



# Tree Beekeeping from Generation to Generation



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Marcinkonys  
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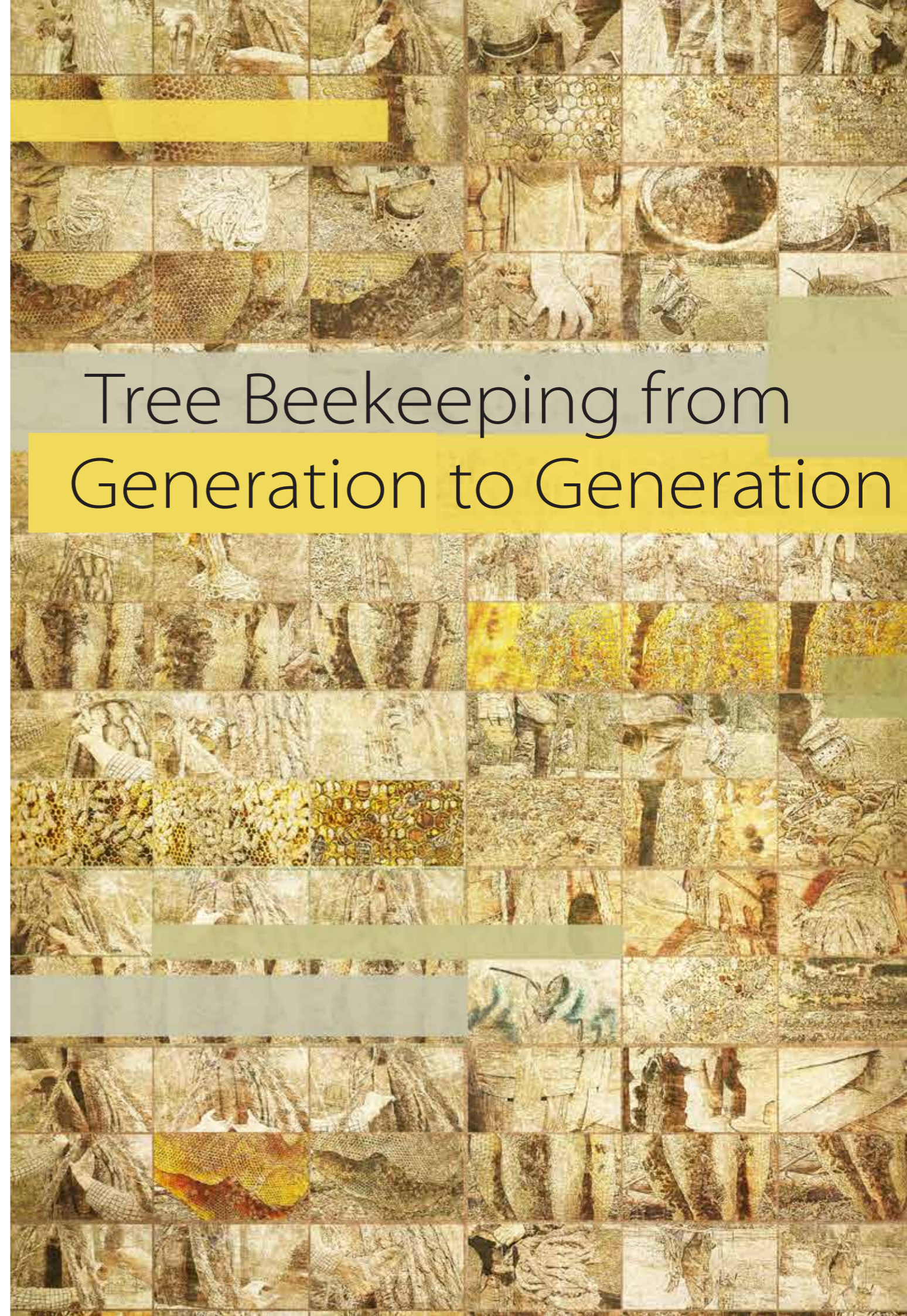
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# Tree Beekeeping from Generation to Generation





## Table of Contents

About Bees and More (Virginija Pugačiauskienė).	8
Bees and People. Development of Beekeeping (Virginija Pugačiauskienė)	10
Beekeeping in the Culture (Virginija Pugačiauskienė)	42
Life according to the Rhythm of Bees (Romas Norkūnas)	58
Bee Products and their Use (Virginija Pugačiauskienė)	74
Beekeeping and Tourism (Romas Norkūnas)	90
The End Word	106
References	108

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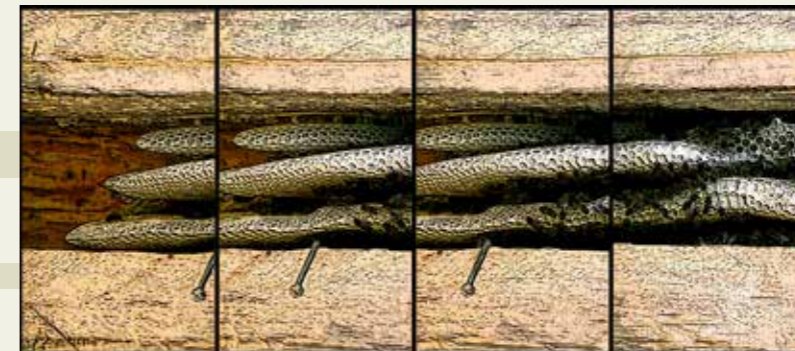
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## About Bees and More

Bees appeared tens of millions of years ago. We know that from the samples sealed in amber. Bees producing honey developed approximately 15 million years ago. Domesticated bees (*Apis mellifera mellifera* L.) came to the Baltic from the south about 6.5 to 6 thousand years ago, after the last glaciers had melted and plants of the warmer climatic zone had spread in the region, providing bees with food and shelter. Wild honey hunting is considered to be the start of beekeeping.

Beekeeping business that once played an important role in the social and economic life of the country currently has only the function of representation, as well as preservation and maintenance of the former tradition. The traditional apiary of Tree Beekeeping Apiary at the village of Musteika was established following ancient beekeeping traditions of the Grand Duchy of Lithuania and the later Polish-Lithuanian Commonwealth.

Old hollow trees called dravės are monuments to this tradition. Presently, the Directorate of Dzūkija National Park and Čepkeliai State Nature Reserve maintains and presents the tradition of tree beekeeping; it provides trainings and hopes that this tradition will continue in Lithuania. The viability of such beekeep-



It is not known when, where and under what circumstances humans first tasted honey. However, surely, honey had been the only sweet food product for a long time.

ing will largely depend on how many apiarists will get involved. Such mutually supportive apiarists exist in Lithuania, Belarus, Germany, Poland, Ukraine, and Russia. We expect that their numbers in Lithuania will grow.

To promote protection of hollow pines, the inventory of such trees in the Dainava Forest was made in the second half of the 20th century and they were listed as natural monuments. Three hollow pines with locked hollows inhabited by bees were found near the villages of Lynežeris and Zervynos. As for the present, 60 hollow pines have been preserved at the Varėna region; 22 of them are listed as natural heritage monuments and stand in the territories under the control of the Directorate. Hollow pines represent rather a cultural phenomenon related to traditional beekeeping and anthropogenic activities than botanic monuments that developed and survived in the result of natural processes.

The next step in preserving the traditional beekeeping business and promoting its viability was including the tree beekeeping of the Varėna region into the List of the Intangible Cultural Heritage of Lithuania that happened on 13 December 2019. The Directorate of Dzūkija National Park and Čepkeliai State Nature Reserve was established as its keeper and protector. This proves that activities in this area are important and meaningful, as well as encourages and obliges to promote maintenance of tree beekeeping. Since 2020, the Directorate has been organizing modular training courses for the traditional tree beekeeping apprentices introducing them to beekeeping traditions and novelties. The practical training in acquiring and developing skills form another part of the courses.

This book intends to present the traditional tree beekeeping. The authors of the book call the readers and the visitors of the Tree Beekeeping Apiary to assess beekeeping as an important business of the past that gives a modern person an opportunity to discover the joy of living following the rhythm of nature. Beekeeping and the relevant traditions have been revived following the tales of traditional apiarists, as well as perennial studies, observations and practical work at the apiary performed by apiarist Romas Norkūnas. The author shares his discoveries and observations with those who are interested in the process of the return of the traditional tree beekeeping.

*“Learn diligence from bees”* – this saying was known to ancient Greeks, Chinese, and Slavs.

# Bees and People.

## Development of Beekeeping

Beekeeping has always been an important business in Lithuania. In several centuries, it went a long road from wild bee honey hunting to the branch of the agricultural industry that became the main source of income and profit to a certain group of people.

Beekeeping that left deep traces in our mythology, folklore and customs goes back to very ancient times. Bees had patron gods. Mead was a beverage loved both by gods and humans and trees inhabited by bees were deemed to be sacred (Baldauskas, 1935: 3).



Beekeeper Jonas Česnulis from the village of Mančiagirė used to say that bees felt the best in tree hives.



The revived tree beekeeping is a return to a very distant past.

Since the ancient times, Lithuania has been famous for its forests that provided our ancestors with shelter, saved them from enemies and prevented famine. Honey gathered by bees in hollow trees had been known already during the period of gathering in Palaeolith epoch (the 11th to 9th millennium BC). The Lithuanian word for honey, medus, might have emerged because this product was found within trees (medis in Lithuanian) (Steponavičienė, 2000: 28). The climate and dominating massive forests created excellent conditions for the proliferation of bees in Lithuania. The northern part of the mixed-forest zone within which Lithuania was located was not that dense: there were a lot of natural meadows in-between the forests and the forests had a lot of old rotten trees with hollows where bees found perfect conditions to thrive. Hollow trees were inhabited only by forest bees, thus tree beekeeping was also called forest beekeeping. People who lived in large forests started using forest goodies very early and honey had an important place among them (Paulėkienė, 1964: 97).

After people first tasted honey gathered by forest bees living in hollow trees and eventually discovered not only nutritious but also healing features of honey, they understood that robbing bees is counterproductive and began to take care of them to get more benefit. That was the start of beekeeping as business.

Beekeeping went through two stages: tree beekeeping and hive beekeeping (Kazlauskienė, 2003: 251). These two stages can be split into four shorter periods: honey-hunting, tree (forest) beekeeping, homestead beekeeping and hive-frame beekeeping (Kibirštis, 2009: 4).

The earliest stage of beekeeping was honey-hunting, when bees were killed when taking honey from tree hollows. Hunters walked through woods and checked old trees. When they noticed bees, they widened the hole with a pick (peikena ) and took all the honeycombs from the hollows. This way, bees were killed. Later, smoke was started to be used to calm down bees and some honeycombs were left for them. This way, bees had food and were able to survive winters (Zemlickas, 2021).

When people noticed that bee families got split and bees moved to other hollows, they started "... making holes in trees on purpose, so bees could have



a place to swarm” (Pečkaitis, 1921: 9). Increasing number of bee families increased the amount of the collected honey. Eventually, hollow trees inhabited by bees became a property; people began to insulate stumps to protect bees from freezing and dying out in winter; the hollows were also protected from bears, squirrels, martens and birds (Kalnius, 2015). After people realized the use of bees in the 10th to 12th centuries, they began to make artificial hollows this way moving towards tree beekeeping; the attitude towards bees changed and beekeeping traditions began to form. As the population grew and the demand for bee products increased, the importance of beekeeping grew as well. Eventually, natural tree beekeeping turned into an important and independent auxiliary branch of industry (Paulėkienė, 1964: 97). It spread not only in the Baltic countries, but also in other forested regions of the Eastern Europe (Piškinaitė-Kazlauskienė, 1995: 4).

Honey was used for food and making mead, whereas wax, demand for which rocketed in the 9th and 10th centuries after the Slavs converted to Christianity was either sold (Isokas, 2006: 55) or exchanged for brass and other commodities; wax was also used to make moulds for brass casting (ibidem: 38). The Gotland Island in the Baltic was the largest centre of Euro-Asian trade in the 10th and 11th centuries. The Rus’ brought in furs, honey and wax and the Lith-



Tops of the pines that were planned to be made hollow were cut off. The hollow pine (dravė) on the Joniškė slope of the Ūla River valley near the village of Mančiagirė.

uanians who lived close to such an important trade route had to trade as well, especially considering that they possessed demanded commodities. When the Grand Master of the Teutonic Order distributed Curonian and Livonian lands to churches and monasteries in the second half of the 13th century, he also distributed tree beekeepers (Straigis, 2002: 25). This implies that beekeeping was an important source of income to the treasury. In his manual on beekeeping, Alexander Butlerov quoted historian Teodor Narbutt: “Beekeeping was a universal craft and treasure of all the nations of the Lithuanian kin: the Lithuanians, the Prussians, the Samogitians and the Latvians. Their forests were very rich with bees (Butlerovas, 1907: 48).

Since the 13th century, historical sources started mentioning honey and customs related to beekeeping business more and more often and, in the later centuries, they also specified relevant tolls applied to the population, because development of the state and wars demanded money. Hunting and beekeeping provided products for exchange (Paulėkienė, 1964: 98). Tree beekeepers were serfs but their status differed from the others. Some tree beekeepers lived in forests with hollow trees, others only gathered honey and wax and brought bee swarms into hollows. The tree beekeepers had to install 20 to 24 hollows but sometimes they installed more (Isokas, 2006: 93). Trees for carving hollows were selected with high awareness using the accumulated knowledge and experience that were passed in the families of beekeepers from generation to generation. Hollows for bees were carved in robust trees which were still growing and resistant to rotting, because only such trees could host bees steadily and facilitate passing them from generation to generation as inheritance. To prevent the trees from growing up, their tops were cut and covered with roofs (Mankus, Strazdienė, 2006: 22) or boards pressed with stones to protect the trees from rotting (Šešelgis, 1974: 9); afterwards, they were left for several or several dozen years so they could grow and thicken. Such custom was also known in the Forest of Belovezh, Polesye, Estonia, Belarus, Germany, as well as by tree beekeepers of other countries (Piškinaitė-Kazlauskienė, 1995: 38). If a pine top is cut, the tree grows thicker and its branches go down. Only sometimes branches of a hollow tree start growing up. After preparing the tree, beehives were made; their number could vary from one to four (Blozne-



lis, Ratkevičienė, 2018: 97) or even five. Hives were made on the southern, south-eastern or eastern side (Piškinaitė-Kazlauskienė, 1995: 38). When hollows were made, people sought to make them as durable as possible. Several robust pines were usually left around the hollow one to protect it from being ripped out by wind and to provide lee to the bees. Broken branches and dry needles around the hole were cleared off this way protecting the tree hive from fires (Bloznelis, Ratkevičienė, 2018: 97).

During the period of tree beekeeping, a hollow tree with bees belonged to the person who found it first. Owners marked the hollow trees with certain signs carved on the trunks. Such signs were the only document proving the ownership. Even brothers used different signs. Hollow trees marked with signs could not be forfeited even in the event of acquiring or buying the land. Tree signs of the noblemen imitated their coats-of-arms and could be used instead of seals. The document of 1509 states: "... we had no seal of ours, so we put our hollow tree sign onto this act." The hollow tree sign also allowed the owner to enter the forest freely (Baldauskas, 1935: 8). Signs indicating ownership were used

to mark not only hollow trees, but also apiaries in the forests (Mankus, Strazdienė, 2006: 22). They served as ownership proofs and provided access to tree hives and apiaries on the land of a different owner. Only a few beekeeper signs have been recorded in our country. More such signs are known in Belarus, where enthusiasts of tree beekeeping still use them to mark their stump hives. The Kabeliai e-museum shares interesting information about marked hollow trees: "the legal disputes of the 15th and 16th centuries over territorial borders often mention tree beekeepers, beaver hunters and other witnesses who often lived near the wilderness. Hollow trees looked after by beekeepers from generation to generation were recognized as certain boarder markers by the courts of the Grand Duchy of Lithuania. Landmarks were seen not only in natural geographical features (like rivers, lakes or swamps) or earth and stone piles called edge-marks or ditches, cemeteries or wells: hollow trees with signs were seen as landmarks, too. This was especially important for the vicinities of Grodno, where there were a lot of territorial disputes not only between Lithuania and Poland, but also those regarding boundaries of the tenures of Grodno, Bielsk, Goniondz and Merkinė" (Kabelių e. muziejus, 2020).

The rights of tree beekeepers were codified in the Statutes of the Grand Duchy of Lithuania (1529, 1566, and 1588) that acted therein (Hejke, 2017: 12). Before the Statutes were drawn, the beekeeping had been regulated by the traditional customary law. The Statutes were based on the customary right to beekeeping. Tree hives could be inherited only by men. Hollow trees were of three types: trees inhabited by bees producing honey; marked trees without bees; and trees newly inhabited by bee swarms. The latter were called blind trees. Tree hives could not be sold. They were seen as private property already in the 14th century, long before forests and water bodies were distributed among individual (Isokas, 2006: 94). Tree beekeepers were true artists in their field; many of them "climbed hollow trees" till old age and had a special gear for that purpose. "They went through forests carrying ropes or geinys on their shoulders and axes and chisels under their belts. Sons of the beekeepers followed their fathers who brought them to the forests for honey-gathering from early youth" (Petruolis, 1970: 154). Hollows were carved at different



A log hive at the village of Zervynos with the sign identifying its owner.



Every tree beekeeper had his personal sign he used to mark the tree hives in his possession.





heights. According to Vladas Jezukevičius who grew in the beekeeper's family from Marcinkonys: "Sometimes, you have to climb 16 to 20 metres to a hollow hive. Only experienced tree beekeepers can act freely at such height. When you stand in a loop with one foot and have to make the other loop with one hand and catch it with the other after throwing, it is quite a difficult task to keep stability at such a high height" (Bloznelis, Ratkevičienė, 2018: 98). Hollows were carved high to protect the bees and honey from bears that attacked hives. Beekeepers had to take measures to protect their bees and honey.



Tree beekeeper Algis Svirnelis is climbing a hollow tree (dravė) hive using the climbing gear called geinys.

They used simple but rather creative gear for that purpose. To prevent bears from attacking hollow hives, beekeepers often hanged nets or spiky bludgeons over the lid of the hole (plautas) so that the bludgeon could swing and give a painful blow to a bear trying to attack the hive. The swinging bludgeon complicated access to honey: the more the bear tried to push it away, the more painful was the back blow. The ground around the tree hive was often covered with sharp spikes or beekeepers put harrows with spikes to the top: if a bear fell on the spikes, it got hurt and never returned. Others hanged a wide board or a crate on an ached branch by the lid of the hive hole. After reaching the hole, a bear tried to sit there and fell as the rope was made too thin to hold it. Wooden circles to which sharp wooden spikes were tied were attached to tree hives. The holes were also protected with sharp branches, spikes and roofs. Bees had to be protected not only from bears but also from mice, martens and woodpeckers. For this purpose, the holes were covered with spruce, pine or birch branches so that birds could not reach the hive lid through such coverage. Pastor V. Jezukevičius who originates from Marcinkonys mentions the following local saying in his book *Dievo valios kelias*: "Oh, child, do not go where you should not or else you will pierce yourself as a bear on a spike and get yourself killed" (Dundulienė, 1982: 68; Isokas, 2006: 262; Bloznelis, Ratkevičienė, 2018: 102, 103).

Beekeeping was an important source of income and historic sources even mention apiaries along with arable lands. In the 13th and 14th centuries, the nobility already had rights to the communal land as well as to peasants, their property and work. Hollow tree apiaries were often presented to the clergy by the grand duke of Lithuania as valuable possessions. This way, in 1387, when Lithuania was baptized, Grand Duke Jogaila granted the bishop of Vilnius lands and other possession among which apiaries were listed separately. On 22 June 1421, the Grand Duke Vytautas granted the bishop of Samogitia peasants, lands and other possessions (including apiaries too). The clergy also received bee products directly: in 1387, Jogaila, the King of Poland and the Grand



Tree beekeeper Romas Norkūnas has raised a swarm trap (vabikas, or aviliukas) to catch a bee swarm.



A hive insulated with straw at the village of Žiūrai.

Duke of Lithuania, donated the churches of Vilnius “one birch-bark barrel of honey” from his lands and, in 1389, a barrel of honey was donated to each of the churches (Piškinaitė-Kazlauskienė, 1995: 19). Noblemen and squires bought out peasant lands with communal possessions including forests with hollow trees. This way, communal possessions and forests with bees among them became the property of the nobility. Peasants had to re-pay the right to use the forests that became the property of the dukes, nobility and clergy and bees inhabiting hollow trees therein with the tribute of wax and honey. As the owners of the lands and forests changed, the tree hives were not taken from the peasants: only the recipients of the tribute changed. Land donations did not mention tree beekeepers explicitly; they only provided a mandatory notion that people were granted along with certain tributes (ibidem). Historic documents show that there were disputes over lands and forest apiaries between the local people and the Teutonic Order. The Complaint of the Samogitian noblemen to the rulers of the Western Europe of 1416 mentioned lands and forest apiaries as the key property they were robbed off. Fields and apiaries were also mentioned in Livonia. Henry of Latvia mentioned in his chronicle that, around 1212, the Livs of Autiņa laid the complaint against the Swodbrothers of Wenden (Cēsis) who seized their arable fields and hollow trees with bees. The hollow trees were returned, though the lands were kept by the Teutonic Order (Vaitkevičienė, 2019: 208). Tree beekeeping traditions, customs, laws and methods were similar in Lithuania and Poland. In Lithuania, tree beekeeping as a craft was practiced only by peasants both in private and royal forests; whereas in Poland, tree beekeeping was practiced by people of different social classes (Hejke, 2016: 12). Nevertheless, in Lithuania, beekeeping was not limited to a single class too. Not only peasants, but also townsmen and even noblemen could become apiarists via special relationship called *bičiulystė* which translates as friendship and has a historic meaning of shared beekeeping. The model of such beekeeping-based friendship was maintained by the commoners, but it still worked in the lives of the upper social classes, too. Historic sources provide information about the communities of tree beekeepers that functioned in the cities and towns of the Grand Duchy of Lithuania since the 14th century and included both urban citizens and nobles and apiarists of



different faith, too. Along with other guilds, tree beekeepers had their statutes and attributes (the banner with bees) and regular meetings; they also went under the same banner in a war (Vaitkevičienė, 2019: 230).

In the grand ducal manors, honey was harvested by the chief apiarist. Two thirds of the harvested honey went to the grand duke and one third was left to the apiarist. In the 14th and 15th centuries, tree beekeepers were tributaries. In the 15th and 16th centuries, honey and wax tributes and taxes from the peasants were collected by the district officials (so called key-keeper). Their deputies often were in charge for state-owned mead breweries. In Samogitia

and Dzūkija, tree hives were also owned by officials responsible for forests and hunting (*osoczniks*) (Isokas, 2006: 93).

Written sources of the 15th century also mention tree beekeeping as a separate economic activity. Historians assume that different specialisations of the peasants began to distinguish even earlier: "... different categories of the peasants the names of which reflected their specialisation or dues must have started developing already in the 13th century. Peasants paying grain tribute to the manors were called *duoklininkai* (tributaries), the ones paying tribute in honey and wax were called *drevininkai* (tree beekeepers), the ones who were paying tribute in furs were called *kiaunininkai* (marten fur providers) and *bebrininkai* (beaver fur providers), and those who were paying fish tributes were called *žvejai* (fishmen)." Tree beekeepers were free from grain tribute that was mandatory to farmers (Vaitkevičienė, 2019: 208, 209). Tree beekeepers who lived on the lands of the grand duke had only one due and paid that due in honey and wax (Piškinaitė-Kazlauskienė, 1995: 19). This shows the importance of beekeeping to the entire economy.

During the Middle Ages and the Renaissance, honey and wax were as precious as gold and represented highly demanded export commodities (Hejke, 2017: 11). The privilege of Sigismund II Augustus to Albertus Gastold (Albertas Goštautas) of 1533 states that those who were supposed to hold only tree hives and forest bee farms, but not arable land, will be due only to the tribute of honey and wax (Vaitkevičienė, 2019: 209). The Statute of Lithuania of 1588 states that "if a hollow tree with bees of an empty one breaks, the owner shall be entitled to cut out the hive and take it away, but he shall leave the top and the stump of the tree to the owner of the forest." In the 16th century, the tree belonged to the owner of the forest, but the hollow hive belonged to the beekeeper. The relations between the beekeepers set by the Statute of Lithuania were in force until 1840 (Piškinaitė-Kazlauskienė, 1995: 16). Thus, beekeepers maintained their proprietary rights to tree hives even in a sold or inherited forest, because both customary law and the Statute of Lithuania strictly prohibited expropriating tree hives with signs of other owners, as well as taking honey or bees out of them. Nevertheless, there were thieves who shaved off owners' signs and carved their own signs instead. Therefore, legal disputes



After bees have pitched the hive board, it is impossible to open the tree hollow without an axe.



happened rather often. Violators of the beekeepers' rights and thieves especially were punished severely. If a bee thief was caught, beekeepers often killed such thief themselves. Honey robbers were also sentenced to a severe death penalty, especially if the bees died out after robbery. According a known ancient punishment, the robber was nailed to the tree hive the bees of which died out due to his robbery, and then the tree hive with the robber was rolled downhill. The Statute of Lithuania set penalty for cutting or burning of a hollow tree with bees equal to 2 kopas of groschen and 1 kopa of groschen, if the tree hive was empty. By the way, the Statute also protected the tradition of keeping



Tree beekeeper Algis Svirnelis from the village of Zervynos is gouging a hollow with the tool called peikena.

bees in other owners' forests (Dundulienė, 1982: 66).

According to E. Paulėkienė, "installation of tree hives and their upkeep was the profession of the Lithuanian beekeepers, even if they dealt with agriculture along with their main business". Such situation was maintained until the end of the Vokok Reform. First, it was forbidden to make tree hives in the royal forests. The ordinance on the royal forests of 1641 stated that nobody had a right to install tree hives in the royal forests, except for the specially appointed beekeepers and not in all forests too. As the rights of the beekeepers were restricted, they were also subdued to agricultural works along with other peasants. In exchange for the use of the land, tree beekeepers had to install tree hives for the land owner and look after them. The bees were also owned mostly on the principle of *bičiulystė* that means friendly sharing the ownership rights between the beekeeper and the forest owner, although some bees were private (Paulėkienė, 1964: 99, 100). Considering that beekeepers had not had forests of their own, after installing tree hives in the forests belonging to other owners, they mostly had to give them a half of the harvested honey. Besides, it was specified what kinds of tools can be carried by a beekeeper, when he was going to visit his tree hives (ibidem: 101). When the restriction of the beekeepers' rights began, the model of beekeeping started changing too. The beekeepers' rights and obligations of the state peasants in Lithuania and Western Belarus were modified in 1557 after passing the act on the Vokok Reform. One of its provisions stated: "... the officials must register all the trees with hollow hives and inspectors must check them" (Piškinaite-Kazlauskienė, 1995: 24). The 14th to 17th centuries was the period when tree beekeeping thrived. In the second half of the 17th century and the 18th century restrictions to enter forests for beekeeping matters became more severe. Making hollows was limited only to the forests stretching near the rivers. In the 19th century the tradition of keeping bees in the forests of other owners finally disappeared except for the forested areas of Dzūkija (Dundulienė, 1982: 66).

The 16th century Vokok Reform and the change in the management of the royal forests affected tree beekeeping business. The 17th century ordinance of the royal forests in the Grand Duchy of Lithuania stated that officials responsi-



ble for forests and hunting that held tree hives at the Berštai forest could give half of the honey to the forest ward. This could have been allowed due to the reason that there were a lot of tree hives in this forest. Forest wards could also take half of the honey harvested from tree hives without harming the peasants in the Kaniava section of the Kaniava and Dubičiai forestry. However, the forest ward was to promote that no new tree hives were made in the forest (Isokas, 2006: 146).

In the 17th and 18th centuries, tree beekeeping began to yield the ground to homestead beekeeping (Paulėkienė, 1964: 106), though tree beekeepers still continued to work in the first half of the 17th century, when the use of stump hives began. Tree beekeepers were mostly better-off than peasants. Good tree beekeepers and good homestead beekeepers belonged to the category of wealthy people and their social status was considered to be higher than that of

peasants. The Statutes set a rather high ransom for killing a beekeeper: it was equal to the ransom for killing a high ranking official that was 40 kopas of groschen at that time (Paulėkienė, 1964: 99; Piškinaite-Kazlauskienė, 1995: 20).

People who served as beekeepers earned their living from forests, rather than from land. Their lifestyle was closely connected to their work deep in the woods. Tree hives were not concentrated near the villages; they were evenly distributed in the forested territories in-between separate settlements (Vaitkevičienė, 2019: 210). Distance was not a problem for a beekeeper: according to the accounts of the beekeepers of Dzūkija, in order to avoid paying tributes to the manors, they intentionally “looked for hollows far-away where no guards showed up” or they bribed the guards (Petrulis, 1970: 155). The increasing area of arable land and growing demand for timber in the foreign markets in the 16th and 17th centuries propelled cutting of the forests. This led to the changes in the beekeeping business too. The intensifying farming affected the situation of the tree hives that stood in the fields. The provisions protecting tree hives were included into the Statute of 1529. It stated that the land next to a tree hive was not to be ploughed: “anyone ploughing such his field shall not plough closer to the hollow tree belonging to another person than within the reach of the whip from the furrow. And if anyone ploughs closer to the tree and the tree dries out because of that, that person shall compensate the loss to the owner of the tree” (Vaitkevičienė, 2019: 210). Regulatory, economical and other changes hastened the shift towards another form of beekeeping, namely, homestead beekeeping.

Written sources on Warmia mentioned domesticated (garden) honey bees already in 1388: “when granting the Prussian man called Nirglaudas some land with tree hives, the bishop of Warmia set a condition that the said man was to give the bishop two thirds of the honey from tree hives and half of the honey of the domesticated (garden) bees. In 1397, the bishop granted land to a Prussian man called Michael Adam upon a condition that he would sell a barrel of hollow tree honey for one mark and a barrel of garden honey for one and a half mark” (Dundulienė, 1982: 67). Until the 16th century, homestead



One of the ways to reach the tree hollow is to climb a trunk with short-cut branches called žaginys.



Tree hives were often robbed, so beekeepers used to lock them to protect the bees and honey.



The old way beekeeping in the forests near the village of Musteika.

beekeeping was undeveloped and, only since the 16th century, the growing information of the economical character start providing data on its growth and shift from tree beekeeping to stump beekeeping. The comparison of the data on forest bees and domesticated bees reveals that keeping bees in hive stumps became prevailing by the mid-16th century. Later (in the 17th and 18th centuries), domesticated garden bees made about three fourths of all beehives. For instance, there were 608 beehives (stumps) in Aukštadvaris in 1775: 498 of them stood in gardens and only 110 were tree hives. In 1767, in Rietavas Volost, there were 672 bee hives (stumps) and tree hives were not mentioned at all (ibidem: 67).

In homestead beekeeping, bees were kept in hive stumps that were placed either on the ground or in the forest trees. Forests, clearances and meadows were full of bloomy grasses, bushes and trees, especially linden trees, from which bees gathered nectar and honey. The demand for vax did not disappear even when oil was started to be used for lighting. The tributes of honey and vax remained. Honey was highly valued, so there were disputes over it and cases of robbery. Sometimes manors purchased honey from the peasants, but they had to pay the market price, otherwise the peasants could sue the manor. Honey tributes and charges on honey were common in many manors.



Ancient log hives at the village of Mančiagirė.



Honeycombs in a horizontal log hive at the Tree Beekeeping Apiary in the village of Musteika.

The charges were paid for the hives possessed. Forest wards were responsible for counting them and seeing that none was hidden. Setting the honey tribute was not that easy because peasants avoided showing all the hives they had; besides, hives were carried to the forests in summertime and brought back closer to the homesteads only in winter. In the manors of the Alytus Economy, beekeepers gave the manors half of the harvested honey. Honey was harvested in the presence of the manor representative (Isokas, 2006: 158). By the end of the 18th century, there were 79 stump hives at the village of Zervynos. Of course, this was the number registered in the inventory of the Varėna manor. The peasants had to pay the manor for their bees regularly and, therefore, they concealed the real number of their hives. Some peasants had many hives: in 1798, Motiejus Tamulevičius had 36 and Antanas Tamulevičius had 30. By that time, there were 59 hives in the village of Mančiagirė and 144 in Marcinkonys. According to the manor inventory of 1785, the peasants paid 15 groschen for a hive with old bees and 7.5 groschen for a hive with young bees. In 1798, the list of peasants' obligations mentioned that a hives with old bees were charged with 1 zloty (1 zloty = 30 groschen) and the one with young bees were charged with 15 groschen (Tyla, 1964: 53).

Garden beekeeping was not only more convenient, but also more productive, so it spread rapidly. After bees were moved to stump hives, beekeeping became more progressive. Like in the forests, in the gardens, stump hives were positioned vertically and called *statiniai* (vertical) because of that. In such hives, bees made long honeycombs along the entire height of the hive. Yet, in hot summer days, some of such honeycombs collapsed. Vertical stump hives could also be easily overthrown by wind or animals, so eventually stump hives were started to be placed horizontally. One end was lifted higher and it was called the head, while the lower end was called the foot. Keeping bees in horizontal stump hives was described by Daniel Gottlieb Settegast in his book *Naudingos biczu knygeles...* (Useful Books on Bees...) published in 1801. In 1820, the book was republished. The author specified two types of beekeep-



ing. In the first case, beekeepers took a certain part of the honeycombs from every hive and left the rest for the winter. Usually, the first year, honeycombs were cut at the foot of the hive, and at the head the next year. This way, the bees could survive till spring and fill their hive with honeycombs and honey next year. In the second-type beekeeping, the strongest bee families were left for the winter without taking any honeycombs or honey out of them. Meanwhile, weak bee families were liquidated by taking out all the honey and wax from the hives. Next year, strong bee families produced enough swarms that were brought to the hives emptied the previous year. However, this type of beekeeping was not popular most probably due to the belief that bees must not be killed (Zetegastas, 1801: 32–38, 103–105). Simonas Daukantas republished this book in 1848 in Sankt Peterburg; he changed its alphabet to Latin and adjusted the language to the Samogitian dialect, leaving the content as it was (Salinka, 2019: 9). As it has been mentioned, tree beekeeping was the occupation of exclusively men. Such attitude continued even after people moved to homestead beekeeping. According to the belief of old beekeepers, this business was only for adults and only for males.

The Lithuanian beekeeping, especially tree beekeeping, was dependent on the



Tree beekeeper Algis Svirnelis from the village of Zervynos is transporting a hive to the village of Viksviniai.

foreign market. In the 18th century its market share shrunk, because farming intensified and demand for timber increased and, consequently, deforestation prevented the spread of tree beekeeping and later started threatening its very survival in Lithuania, as well as in Poland, Belarus and Latvia. The demand for food products in the foreign markets that grew in the 18th century diminished the demand for bee products; the production of grain sugar that replaced honey developed; fruit vines replaced mead; paraffin oil was started to be used for lighting instead of wax; and, as the honey tribute was cancelled, beekeeping was no longer seen as a way to earn the living (Piškinaitė-Kazlauskienė, 1995: 4–5). Yet, in the South-Eastern Lithuania, where tree beekeeping was still a business, the situation was somewhat different. Though the traditional tree beekeeping was replaced by stump hive beekeeping, it was still related to forests because the hives were placed in the trees. The honey and wax tributes were gradually replaced by the monetary charge to the manors. The inventory of the Kaniava forest district of 1764 shows that local people were in the possession of 316 homestead and 76 forest bee hives and 62 of them were hollow trees owned by the residents of the following villages: Rudnia – 1, Norkūnai – 5, Lynežeris – 3, Zervynos – 11, Daržiniai – 10, Drominiai – 21, Krakeliai – 11 (Isokas, 2006: 180). Some of the hives surely could have been concealed.

To count tree hives kept by the beekeepers in the forests, they had to be registered, and registration lists had to be submitted to volost offices. In other places there was a request to collect the tree-climbing gear from beekeepers and return it only in spring, when checking the bees and harvesting honey (Isokas, 2006: 131). There were numerous initiatives to ban tree beekeeping or replace it with hive beekeeping arranging bee farms in the forests. However, the local administration of the forests was not against the old-way beekeeping, especially considering that farmers showed little interest in arranging forest bee farms. Furthermore, in the first half of the 19th century tree beekeeping was no longer a separate branch of agricultural industry, but rather a supple-





mentary occupation which existed next to farming. The income earned from beekeeping dropped as well. The initiative to build forest bee farms was motivated by the intent to improve the forest protection and diminish the number of extraneous visitors (Mankus, Strazdienė, 2006: 22).

In 1852, there were 466 tree hives in the state forests of the Vilnius Governorate. The profit earned for honey and wax harvested therein made 70 roubles and 10 copecks. There were tree hives in private forests too. The number of tree hives in the Kaunas Governorate was not specified because such hives were few and they were located only in private forests. In 1827, the state forests of the Augustow Governorate hosted 17,736 tree hives that earned 175.5 roubles of income in total. By 1852, the number of tree hives dropped by half, but the income increased to 1,216 roubles and 46 copecks. In the Varėna Volost of the Trakai Okrug of the Vilnius Governorate, around 1,500 tree hives



Hives hoisted in trees can be reached only by climbing a ladder made of a branched tree called žaginys.

were registered (Isokas, 2006: 262). According to the data of 1872, the Varėna Volost had around 1,500 hollow stump hives and around 500 hives in the gardens (Tyla, 1964: 59). Since 1891, the hives kept at the state forests of the Vilnius Governorate earned around 25 to 40 roubles annually during the honey harvesting period (Isokas, 2006: 262).

In the Varėna Volost, one strong hollow stump hive or tree hive produced around 17 garnec (16 kg) of honey and around 2 pounds (approx. 700 g) of wax. Honey and wax were purchased by merchants and brought to Vilnius (Stanaitis, 2001: 30). In the 1870s, one pood of dried mushrooms costed 3 roubles, a pood of honey – 6 roubles, and a pood of wax – 10 roubles. Meanwhile, in Varėna, a pig costed from 3 to 20 roubles, a cow – 10 to 25 roubles, and a horse – 10 to 40 roubles. In a good year, farmers could earn quite a lot of money from beekeeping (Tyla, 1964: 59), so this occupation was considered to be profitable and relatively effortless. Tree beekeeping that shrunk due to increasing deforestation because of farming, economic conditions and changing lifestyle was preserved only in the most forested part of Dzūkija. The beekeeping style changed too: stump hives were replaced by frame hives that were becoming more and more popular (Sinkevičiūtė, 2016: 41). The first frame hive was made by François Huber, a Swiss beekeeper, in 1784. During the 19th century, such hives were upgraded in many European countries. In Lithuania, hives constructed by the Americans Charles Dadant and Johan Blatt and later upgraded by Frank Berton became widespread. In the second half of the 19th century, frame hives constructed by Polish apiarist Kazimerz Lewicki spread as well. In 1857, an artificial honeycomb was invented and a honey extractor was invented in 1865 (Dundulienė, 1982: 67). In the abovementioned territory, there were many good pastures for bees: flowering plants of forests and meadows, such as alder buckthorn, raspberry, heather, thyme, clover, and buckwheat that was grown in this region and bloomed from spring till autumn. Beekeeping and buckwheat growing businesses supported each other



(Sinkevičiūtė, 2016: 41). At the turn of the 20th century, there were many bees in Dzūkija and that was reflected in the account of the local countryman provided by Česlovas Kudaba: "Everyone had fifteen to twenty tree hives in the woods. The sky was full of bees. When heathers and honey-flowers bloomed, it was complicated to shepherd cows in the forest. You had to cover your years and neck with a headscarf and have a small birch whisk to protect your face. You had to wave it all the time when going. Yes, there were a lot of bees!" (Stanaitis, 2001: 29). In the homesteads of beekeepers, "the lofts of barns, stackyards and cattle-sheds were filled with hives. Some of them were with bees, others were empty. Tree hives were treasured and well-kept and hives next to houses were in good order" (Bloznelis, Ratkevičienė, 2018: 100). Words of the apiarist from Zervynos also tell a lot about beekeeping: "Not everyone had enough bread, but honey was always available" (Šešelgis, 1974: 9). The beekeepers of the first half of the 20th century continued to work similarly, as they learned beekeeping from their fathers. During this period, at least several residents of every village had tree hives in the forests and harvested honey using the traditional tree-climbing gear (Petrulis, 1970: 153–154). The inventory used by tree beekeepers had not changed much during the entire history of beekeeping. Beekeepers who had tree hives in the second half of the 20th century inherited them from their fathers and used the same tools that were used for honey harvesting earlier. Tree beekeeper's tools were simple and used only for works related to beekeeping: to climb a tree, to prepare a tree hive, to clean it, to harvest honey, to separate honey from wax and to catch bee swarms. Trees were climbed using *geinys* (a set of climbing gear made of ropes and wooden elements), a ladder or *žaginys*. Tools used

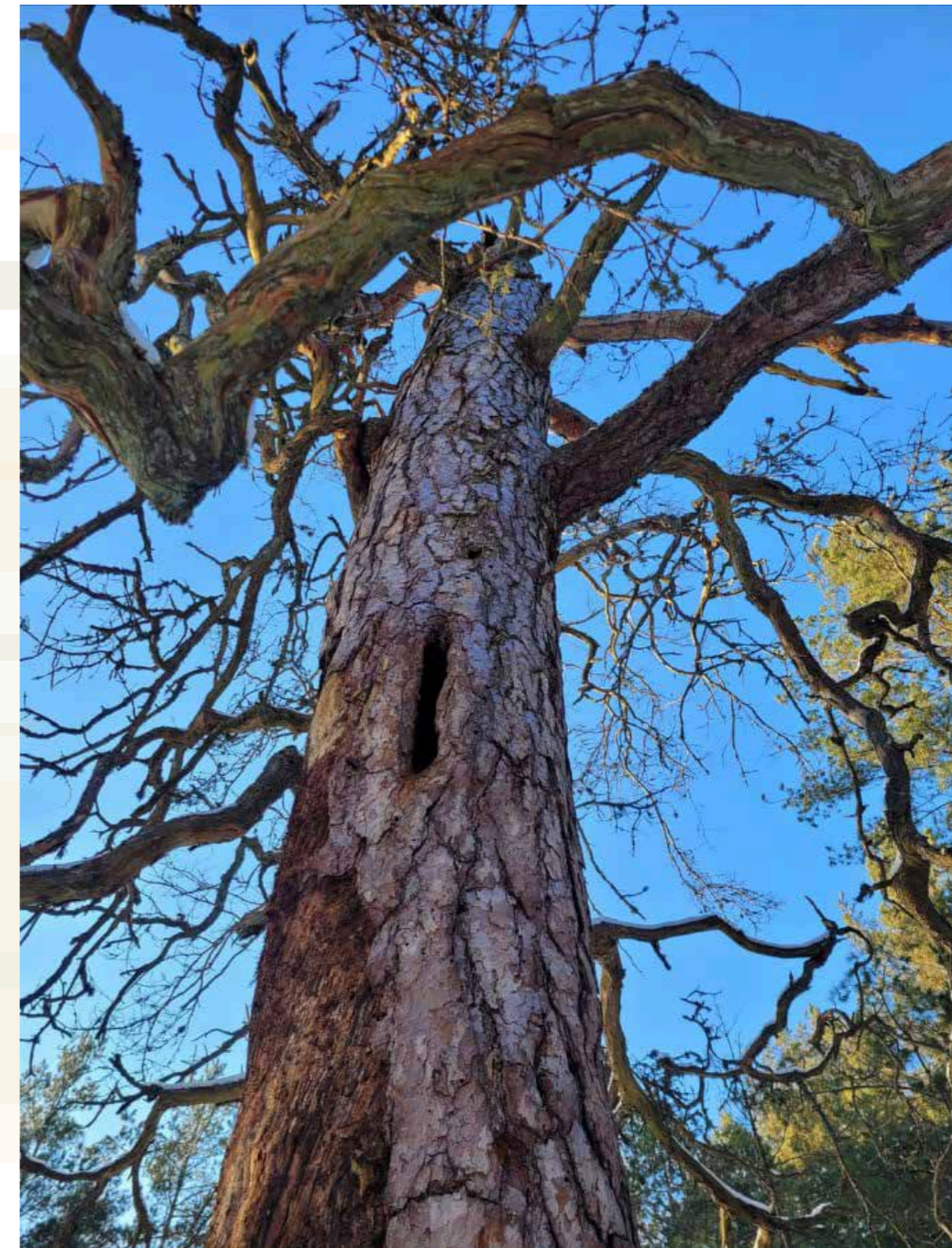
to make a hollow included a chisel, and adze (*skliutas*), a saw, a gouge and a knife. Tree hives were opened only to check and to clean them when harvesting honey in spring and autumn. The cut-out honeycombs were placed into a wooden vessel of a bucket. Bee swarms were caught into sacks and driven with twigs (Isokas, 2006: 262). During the Polish occupation of the Vilnius region, beekeepers paid no charges for tree hives in state forests. During the World War I, the Germans introduced the honey tribute – people had to hand 3 to 5 kg of honey from a hive, so hives were concealed. Those who handed honey, could buy some denatured sugar. Old people of Dzūkija say that the last hollow tree with a hive near the Čepkeliai Reserve was cut during the World War II. Nevertheless, three tree hives with bees that were locked from thieves were found here in 1981 (Piškinaitė-Kazlauskienė, 1995: 36). According to Kazys Šešelgis and Mečislovas Urbelis, the period of the World War II when the last tree hive was made in the great forest, can be considered to be the end of tree beekeeping in Lithuania (Stanaitis, 2001: 32). In the South-Eastern Lithuania, hollows for hives were mostly made in old pines; in other parts of Lithuania, oaks and linden trees were used as well. This was because the South-Eastern Lithuania is mostly covered with pine forests, and pines are durable and robust (Sinkevičiūtė, 2016: 42). Professor Tadas Ivanauskas points in his *Gamtininko užrašai* (Naturalist's Notes) that tree hives were a typical feature of the entire southern Lithuania. In the 1900s, the naturalist still found a lot of them in the region starting from the villages of Eišiškės, Načia (now Nočia), Dubyčiai (now Dubičiai), Rūdnia (now Rudnia) through the villages of Marcinkonys, Berštai and Ratnyčia to Druskininkai; yet, most of tree hives were located in the Gudai and Rūdninkai forests (Ivanauskas, 1974: 38). Also, according to the profes-





sor, "... at the ethnographical border of Lithuania and Belarus, the Lithuanians were more involved in beekeeping than the Belarussians. The later even nicknamed the Lithuanians *borciak* – a tree beekeeper. If a Belarussian married a Lithuanian girl, he said that he married a *borcianochka*. If someone wanted to say that a village was inhabited by the Lithuanians, it was called *borcianski*. The Lithuanian village of Pelesa located in the Lida district near Dubičiai was called *Borcianska Peliasa*" (Ivanauskas, 1974: 38).

The main requirements to a beekeeper had been established since the times of D. G. Settegast: to learn how to manage bees, to regulate swarms, to prevent unwanted swarming, to breed hives artificially, and to carry out all necessary beekeeping works in a diligent and timely manner (Salinka, 2019: 156). The second half of the 19th century brought changes and novelties to beekeeping. In 1882, K. Lewicki established the Museum of Beekeeping in Warsaw that organised annual beekeeping summer courses. These courses turned into a centre of spreading beekeeping know-how and attracting the youth. They were attended by young people not only from Poland, but also from the Governorates of Vilnius, Kaunas and Grodno. Along with other beekeeping novelties, frame hives constructed by Polish apiarists like J. Dolinowski, K. Lewicki, the Warsaw-type hives and others began to spread in Lithuania. By the end of the 19th century, the frame hive of K. Lewicki was already promoted by Feliksas Galminas in *Kalendorius bitininkystės* (1890) and Jonas Staugaitis who published the article of the variety of beekeeping methods in the newspaper *Ūkininkas* in 1892. Marija Pečkauskaitė-Šatrijos Ragana wrote on the more progressive Warsaw-type hives in *Biczių kningelė* (A Book on Bees) published in 1899. In the early 20th century, frame hives of Dadant & Darnov came to Lithuania too. Beekeeping books of the period mentioned hives of such type and their advantages quite often. Yet, in the first half of the 20th century, stump hives and straw hives still prevailed in a large part of Lithuania and especially in the southern Dzūkija and eastern Aukštaitija, where tree hives and stump hives remained in use till the end of the 20th century. Along with



A tree hive near the Grūda River by the old road to Rudnelė.



the spread of new hives and other beekeeping equipment, new beekeeping methods and knowledge also developed in Lithuania; beekeeping terminology related to beekeeping science and practice was established as well (Salinka, 2019: 5, 6). Beekeepers' organizations also started to develop and a lot of press articles, books and beekeeping periodicals were published. The organized activities of the Lithuanian beekeepers began in the early 20th century. In 1905 and 1906, the Beekeepers' Association led by priest Juozapas Ambraziejus worked in Vilnius. The association produced hives, artificial honeycombs and miscellaneous beekeeping gear (Balžekas, Straigis, 2003: 252). Organization of the courses for beekeepers started too. In 1885 and 1886, such courses were organized in Deltuva, at the Tyszkiewicz manor. Women started to get involved into beekeeping as well. The abovementioned beekeeping and gardening courses were attended by writer Gabrielė Petkevičaitė-Bitė, and the lectures (in Polish) were given by Klementina Maculevičiūtė who in turn learned at the beekeeping courses at the Warsaw Beekeeping Museum established by K. Lewicki in 1882 (Salinka, 2019: 79). In 1914, beekeeping courses in Liubava were organized by Jeronimas Pečkaitis. The activities of the Lithuanian Beekeepers' Association Bitė established in Vilnius in 1915 were temporarily discontinued due to the German occupation during the World War I, but its work was renewed in 1917. A beekeeping school with a year-long training programme was opened in Kretinga. In 1918, Feliksas Martišius organized training courses for gardeners and beekeepers in Prienai (Balžekas, Straigis, 2003: 251, 252). In the independent Lithuania, novelties of the beekeeping science and new inventory spread rapidly and practices changed. During the interwar period (in 1929), most of the beekeepers in Lithuania (64.3 %) had 10 bee hives. One fifth of the beekeepers had 11 to 20 hives, and 1.4 % of the beekeepers had over 100 hives. The spread of literature in the native language and training courses for the farmers encouraged the proliferation of beekeeping in Lithuania. There were 126.8 hives in 1930 and 206 thousand hives in

1940. The World War II and the afterwar period brought a major damage to the Lithuanian beekeeping business. Only 36 thousand hives survived, many experienced beekeepers were killed or subjected to repressions (Zemlickas, 2021). Before the World War II, there were 0.7 hives per every rural resident in Lithuania. In 1947, organization of public beekeeping began. In 1950, the Beekeeping Trust (later – the Office and afterwards – the Beekeeping Board) was established at the Ministry of Agriculture and it worked till the summer of 1991 (Straigis, 2002: 30, 31). In 1957 to 1961, beekeepers were prepared at the extramural training courses organized by Jonas Krikščiūnas; in 1947 to 1954, there were courses at the Vilnius Agricultural Technical School; and in 1957 to 1993, there were extramural year-long training courses at the Agricultural Academy of Lithuania. They were graduated by over 700 apiarists. There were also refresher courses; apiarists were prepared at other agricultural schools as well. Many apiarists joined the Lithuanian Beekeepers Association established in 1989. After the Law on the Farmers Homestead was adopted in 1989, three groups of beekeepers formed: amateur beekeepers, professional beekeepers-farmers and beekeepers working in agricultural companies. There were 7 specialized industrial bee farms by 2001. Since 1996, the development of ecological beekeeping began as well. Scientific beekeeping is researched by the Beekeeping Division of the Lithuanian Agricultural Institute (established in 1984), as well as in the Lithuanian University of Agriculture and the Institute of Ecology. After re-establishment of the Lithuanian independence in 1990,





specialized private bee farms having 30 to 100 and even more beehives were established (Balžekas, Straigis, 2003: 251, 252). During the afterwar period, the largest number of beehives in Lithuania was registered in 1961 – 259.7 thousand, and public bee farms had the largest amount of hives in 1978 – 66.7 thousand (Straigis, 2002: 30).

The change of lifestyle and beekeeping practices caused the decline of tree beekeeping even in the part of Lithuania that maintained it for the longest. In Dzūkija, tree beekeeping was also abandoned shifting to the more progressive and productive frame hive beekeeping. The concern regarding protection of the hollow pine hives occurred only in the second half of the 20th century. There was an attempt to register such hives in the Dainava forest and to preserve them by giving them the status of a natural monument. The most important tree beekeeping expedition organized by K. Šešelgis took place in 1980 in the Varėna district: in the forest districts of Marcinkonys, Musteika, Darželiai, Mančiagirė and Puvočiai and within the territory of the Čepkeliai Reserve 81 % of tree hives (64 out of 79) were registered. In order to preserve the traditions of the beekeeping business that once was so widespread in the Varėna district, a Tree Beekeeping Apiary was established in the Musteika village in 2006. Thanks to Romas Norkūnas, a local apiarist, we have an opportunity to learn one of the oldest businesses. The beekeeping tradition that was about to disappear at the turn of the 20th and 21st centuries was picked from the local tree beekeepers and the whole production cycle from making a tree hive to harvesting honey with traditional tools, as well as use and realisation of the products was recreated.

*If you want to earn from bees, you have to rule them and not to let them rule themselves, otherwise you will end up poorly and the bees will get extinct.*

Feliksas Galminas

#### GLOSSARY

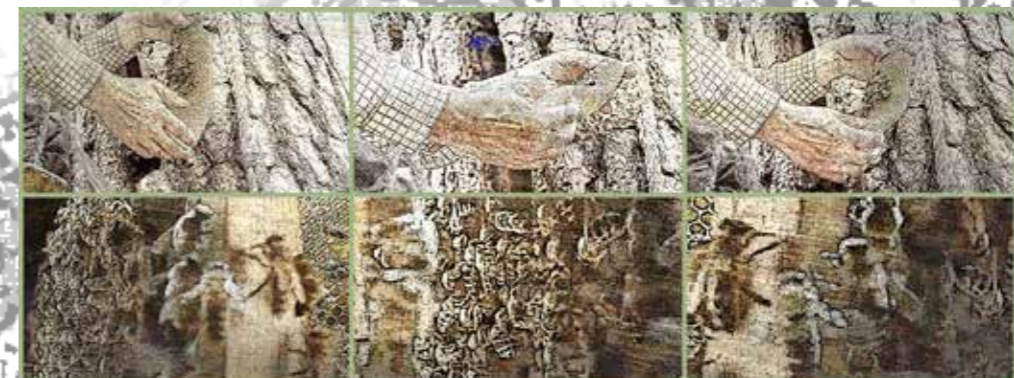
**Dravė** – this is how the local people call a tree with man-made hollows for bees.

**Peikena** - is a gouging tool consisting of a gouge with straight or diagonal blade on a wooden handle and used to gouge log hives or tree hollows.

**Plautas** - is a board used to cover the hollow of a tree or a log hive.

**Geinys** - is a specific climbing gear made of ropes and wooden elements and used to climb trees.

**Skliutas** - is a wide blade axe used by carpenters to square logs as well as by beekeepers to make new hollows in trees.





## Beekeeping in the Culture

Bees were sacred beings for the Lithuanians. The life of bees was an example of diligence, unity and self-sacrifice for the common good.

The oldest proof showing the relations between humans and bees are cliff paintings found in Africa, Asia, Europe and Australia. One of the most famous paintings of such kind has been found at the Spider Caves (Cuevas de la Araña) in Spain. The painting depicts a man gathering honey from a beehive and surrounded by bees. It is at least 15 thousand years old (Socha, 2017: 22; VLE, 2003: 251). This shows that humans and bees have already been living side by side for a long time and that humans were aware of the benefits of bee products and used them.

Like hunted animals, bee swarms had their own divine protectors that owned them and were responsible for them. Forest animals were under control of the forest deity and bees also had their divine ruler. Such perception was reflected in the belief that bees were a gift of God (Vaitkevičienė, 2019: 214). The Lithuanian ancestors believed that bees were protected by goddess Austėja (Baldauskas, 1935: 3) and the god of male bees called Babilas or Bubilas (Steponavičienė, 2000: 31). After the conversion to Christianity, bees went under the protection of the saints: St. Ambrose, St. John and St. Gertrude. Even the Christ and Virgin Mary were seen as divine protectors of bees. So, during the Christian times, bees were called holly birds (Baldauskas, 1935: 3).

Since ancient times, the Lithuanians considered bees to be of the divine origin, so they were important at every stage of human life: baptism, wedding and funereal (Socha, 2017: 30). Both tree beekeeping and the goddess of bees Austėja were known already to the hunter-gatherers of the Late Palaeolith. Austėja looked after bees, plants and flowers from which bees gathered honey and material for honeycombs. The cult of Austėja existed for many centuries along with beekeeping. In the 16th century, it was still partly known (Dundulienė, 2018: 36). Jan Łasicki mentioned Austėja in the 16th century list of the Samogitian gods *De diis Samagitarum...* (1582). He called Austėja the goddess of bees (*apum est dea*, LE, 1953: 446) that was especially venerated

during the bee swarming period. She was asked not to let male bees to the hives, so that more bees could come to the hives from elsewhere (Dundulienė, 2018: 36). As the ancient Balts associated the community of bees with the community of humans, Austėja could be considered not only the goddess of bees like it has been accepted since the times of J. Łasicki, but the goddess of family, bees and humans in general. Her competence covered fertility and abundance based on the principle of procreation: the growth of the number of the family members, the growth of the amount of honey gathered by bees, the growth of the number of linens woven by women (Steponavičienė, 2000: 33). Austėja was considered to be the patron of married women and mothers. The right of splashing drinks upwards during *apsėdai*, wedding and baptism could have evolved from the sacrifices to Austėja (TLE, 1985: 141). The image of bees was typical in wedding songs that sing of a bee making a honeycomb and gathering honey and a girl making a wreath and weaving linens for her dowery in parallel. The songs do not mention the name of Austėja but the goddess and the bee from the songs share the same responsibility: she leads a girl from maidenhood into womanhood. The functions of the goddess Austėja mentioned in the mythological sources and the functions of bees mentioned in the songs coincide. Austėja can be perceived as a goddess of metamorphosis (marital), like Laima is a goddess of birth and Giltinė is the goddess of death (Steponavičienė, 2000: 33). It is assumed that initially Austėja was incarnated as a bee and only later acquired anthropomorphic form (Dundulienė, 2018: 37). Bees were respected as much as their goddess Austėja whose name was most probably related to the words *audėja* (weaver) and *austi* (weave) that also means fly or run swiftly back and forwards, gather honey and “weave” honeycombs (LKŽ e.: *austi*). The folklore relates bees to good spirits and souls: it was believed that bees embodied the souls of the dead. There were many bee-related spells and beliefs (Dundulienė, 1982: 73). Although bees were deemed to be holy, they were not venerated as deities and yet they had their place in the mythological model of the world. After Chris-



tianity prevailed in Lithuania, people transferred regulation of the behaviour of bees to the God. Many rituals were used to establish the connection to the supernatural world in order to promote the success in beekeeping. Therefore, beekeeping activities include many elements of magic. People used magic to turn the course of events in their favour (Sinkevičiūtė, 2016: 44). After Lithuania was christianised, most of the pagan rites were supplemented or replaced with Christian. In the countries that were baptized earlier, like Czech Republic, Germany or Poland, beekeeping rituals contain few-to-none pagan elements (Piškinaitė-Kazlauskienė, 1995: 122, 123). People were impressed by the dili-



In the Lithuanian mythology, bees have their own goddess named Austėja. This goddess not only protects bees, but also is a patron of women.

gence of bees and the level of their life organization that reminded the human life, as well as the mystery of their birth and death. Honeycombs made by bees from wax consisting of thousands of hexagonal cells filled with honey, pollen and larvae were also fancied greatly. People copied this hexagonal structure from bees and adapted it to their own needs. The structure of a honeycomb is found everywhere, where a light-weight and robust construction is needed. It is used in the construction of planes, helicopters and ships, as well as in the bearing constructions of buildings; you will also find it shelving, doors, furniture, snowboards, surfing boards and other useful items (Socha, 2017: 14). Up till now, people had fancied the precision of a honeycomb cell. There was even an idea to use the width of a honeycomb cell as a measure of length in the Middle Ages (Kazėnas, 2015).

As people noticed certain similarities in the social life of humans and bees while watching them, many prejudices evolved regarding the behaviour of bees. Bees were related to success, luck and wellbeing. Every Lithuanian farmer sought to have more hives as bees were workers of God and brought luck. It was believed that the one who was successful in beekeeping should be successful in the entire farm too (Steputaitis, 1917: 3). "A bee is a holy bug. Its works always glow in the eyes of God. The bee feels whether a man who owns it is good or evil. If the man is good, the bee works merrily; if the man is evil, the bee feels sad and gets poor, it dies out, it does not work and does not produce swarm." When God created animals, beasts and birds, He asked what kind of life they wanted. Some wanted to run wild, others wanted to fly, the third asked that humans looked after them, and the bee was the only one to ask to be allowed to work perpetually for the glory of God and the sake of men. So, bees must not be harmed, otherwise it will bring misfortune. And the fruit of bee labour always shines in the glory of God, because wax candles still burn in churches. There is a saying that the one who harms bees sins the most to God (Krėvė, 1933). Harvesting honey was an extremely important moment to every beekeeper, so no stranger could be present. Since ancient times, it has been believed that a stranger can look upon the bees with a bad eye (Dubovičienė, 2010: 13). Beekeeping could not avoid prejudices and magical actions that were supposed to bring luck and promote protection according to



the beliefs. The first visit to the bees in spring was wrapped in magical beliefs. One of them was smoking bees and hives with a consecrated juniper (LII ES 1081 (43): 68). In the late 19th and the early 20th century, beekeepers smoked bees with a consecrated juniper from the Easter palm after winter so "that bees would be successful and that devil would not bother them". Newly built-hives and newly-settled swarms were also smoked so "that they would not fly out; the whole homestead was smoked around on the Easter morning" (Piškinaitė-Kazlauskienė, 1990: 21). Even vows were made to get a swarm from God (Vaitkevičienė, 2019: 214). Hives were cleaned and given a sign of cross, prior to letting a new swarm in (LII ES 1081(48): 73). To make bees angry and willing to attack other bees one had "to shoot a wolf and put the mother-bee through wolf's throat before letting the swarm into the hive – then bees would attack others like wolves" (LII ES 1081(48): 75). The bee is the only being whose death is described with the same word as human death in Lithuanian. Dead bees were interred. Out of respect to bees, people avoided quarrelling, swearing, arguing and behaving badly in their presence. In order to protect their bees, beekeepers really used a lot of magic rituals. They have



Bees quietly spending wintertime in the log hive apiary at the village of Musteika.

remained till nowadays; beekeepers still know and even use them, though to a lesser extent.

Honey also played an extremely important role in ancient beliefs and rites. People used honey to make the alcoholic beverage, mead. In Lithuania, sacrifices of honey, wax and mead were made in various forms: by pouring mead onto the ground, by splashing it upwards and by throwing down the cup. Old beekeepers recall, that lips of the bride were lubricated with honey during the wedding so that she could be sweeter to her groom. When a child was born, people burned a wax candle till baptism to protect the child from the evil (Socha, 2015: 30). It was also believed that should a beekeeper die, his family must tell this to the bees. In different parts of Lithuania, different magical sayings were used on such occasion: "Bees, your master has died", "The beekeeper died", "The master died, yet you must live". They intended to protect the bees, as it was believed that the dead beekeeper could take the bees with him or that the bees could leave the hives. When a dead beekeeper was carried to the cemetery, the hives were turned backwards, stirred up or at least given three knocks (Piškinaitė-Kazlauskienė, 1995: 123).

Not every beekeeper was successful. When the cause of misfortune was not clear, it was attributed to supernatural forces. The beekeeper's moral code includes an excuse that "the fortune of bees depends on the fortune of their man, and if God does not help, any good temper would not help either." People spoke of unsuccessful beekeepers with a pity saying that "bees didn't come to their hands" or "bees didn't come, didn't follow the lead". So, bees were kept by those to whose hands they came themselves (Piškinaitė-Kazlauskienė, 1995: 153). Beekeepers used various spells to ensure their success and hoping to catch swarms with the help of magic. Swarms were smoked or splashed with water using birch whisks. Trees that were deemed to be sacred, like lindens, oaks and rowans, were planted around hives (Dundulienė, 1982: 68). It was believed that bees would be successful only if you shared them with someone. Here, we also see magic-related beliefs. To get a bee swarm for a friend you had to put the hive into a tree on the Pentecost morning (Dundulienė, 1982:





69). Tree beekeepers had rules of their own. Jonas Jezukevičius, a tree beekeeper from Marcinkonys, used to say: “live or die but don’t lose a swarm and don’t run away when stinged” (Ratkevičienė, Bloznelis, 2018: 102).

Beekeeping was not only an economic activity patronized by the bee deities, but also a social phenomenon. Beekeeping could bring together people from different families (Vaitkevičienė, 2019: 215). In the Lithuanian culture, the traditions of beekeeping are so deep that even the word *bičiulis* (a friend) must have occurred among the beekeepers and proliferated only later. The model of beekeeping interaction and cooperation called *bičiulystė* (friendship) evolved in the environment of tree beekeeping (ibidem: 208). In the villages, the unique tradition of bee-based friendship and joint beekeeping was also maintained. It was believed that bees choose such friends themselves. When bees were kept in hollow trees, it was too hard to do all the works for one man, so a helpmate was chosen and that helpmate became a friend. There is a saying that “Bee-friends are of the bee kin; they don’t quarrel or envy each other” (Petrulis, 1970: 159). The tradition of bee-based friendship, or partnership, survived till 1940s, although it was partly forgotten during the two world wars and the afterwar period. In the second half of the 20th century, there was an attempt to revive the traditional custom of bee-partnership. In the late



Henrikas Gudavičius is offering to taste honey from a hollow tree hive.

19th century through the 1930s, the so-called bee-based friendship could be established between two beekeepers, a beekeeper and a non-beekeeper and between non-beekeepers. It could be voluntary or accidental when people were brought together by bees. Such friendship can be short-term – up to one year, or long-term. In the late 19th century to the mid-20th century, bee-based friendship was mostly established under the initiative of a beekeeper, and the relationship was not binding to him. The beekeeper just puts a hive under the name of the person he chooses in his bee farm, let in the swarm, looks after it and gives half of the harvested honey to his bee-partner. If the bee-partner learns to look after the bees himself, the bees are given to him. He has to make the hive, and the bees are given as a present. If the bees die, another swarm is gifted and bee-partnership is renewed. Alternatively, two men can make a hive together, friendly look after the bees that settle therein and share the produced honey. In many cases, bee-partnerships were established by accident: bees made the choice themselves, yet it was important to know the owner of the swarm. This way the bees shared honey with the previous owner. The swarms produced by such bees as well as honey gathered by them belonged to both partners equally and such type of bee-partnership was mostly long-term. It was believed that the swarm brings luck to the homestead to which it comes, so people asked to leave it. In the second half of the 20th century, bee-partnership customs changed, swarms were returned to the owners, but owners had to pay it back with honey or money. As swarms were started to be sold, bee-partnership tradition lost its sense. Bee-partnership was also terminated when one of the partners or the bees died, also when the swarm produced by the commonly-owned bees was returned or when such bees were divided between the partners (Piškinaite-Kazlauskienė, 1985: 83–86). Bee-partnerships continued for years and were terminated only if the bees were divided under the common agreement of the partners or if they died out. There could have been more than two partners: one beehive could have belonged to three or even four persons. The importance of gifting swarms in bee-partnership implies that bee-partnerships were based on pre-existing or wanted friendship between the potential partners, and that bees helped to seal such relations and develop them further (Vaitkevičienė, 2019: 216, 217).



Bees were also given as dowery. Dowery bees could be perceived as establishing partnership between the father-in-law and the son-in-law. Bees were a prestigious part of the beekeeper's children dowery or inheritance and not necessarily only for those who knew how to look after them: this could have been done by the in-laws. (Piškinaitė-Kazlauskienė, 1995: 149). The practice when a father-in-law gifted bees to his son-in-law must have been known well because the Statute of Lithuania of 1566 banned gifting bees to sons-in-law if they lived in different villages. This was an attempt to restrict the shift of tree hive ownership rights from the lands of one owner to another because in such a shift landowners lost the honey tribute (Vaitkevičienė, 2019: 219). Due to various prejudices, bees became sellable only in the first half of the 20th century. However, most of the beekeepers, especially the older ones, avoided selling bees being afraid to sell their luck along with them. Before the World War I, a bee swarm (around 3 kg) costed 15 Litas. During the interwar period, a bee swarm (around 3 kg) in Lithuania costed 30 to 35 Litas. The prices varied because bee-partnership tradition when a bee swarm was gifted to a friend, an acquaintance or a neighbour was still present. The bee-partnership custom

was in high respect: partners had to help each other as it was believed that otherwise their bees may die out (Prušinskis, 1929: 10). People also believed that those who sold bees would have no luck in beekeeping, so there was no tradition of acquiring bees by purchasing (Petruelis, 1970: 159). If someone wanted to get bees, he would put a swarm trap into a tree growing in a field or a forest. There were certain rituals to attract swarms: "The hive was were put for the luck of some young guy with no sin and a clean conscience in the eyes of God or for the luck of some commonly respected person, a landlord or a landlady who was considered to be just, or for the luck of some farmer who was considered to be wise and honourable." And when they tied the hive to the tree, they said: "May God give me bees" (Steputaitis, 1917: 3). Historians say that bee-partnership is known only in the lands of the Balts. As the Lithuanian state conquered other lands and expanded, the custom of bee-partnership was transferred to some Ruthenian communities as an obligation, yet in other parts of Lithuania the old meaning of bee-partnership was maintained throughout the 15th to 17th centuries (Vaitkevičienė, 2019: 230). Bee-partnerships were mostly established between people of equal social status: peasants with peasants and noblemen with noblemen; nevertheless, there were bee-partnerships between peasants and noblemen and even between dukes and craftsmen (Kazlauskienė-Piškinaitė 1995: 140). In spring, partners visited each other's homesteads and went to check their hives together; they also assisted each other in other works, attended family feasts, and they performed joined honey harvesting and shared honey in mid-August (LEEŽ, 2015: 43).

Honey harvesting was a great feast attended by the partners with their wives and children, as well as relatives, in-laws and neighbours. Some beekeepers invited even the parson of the parish (Piškinaitė-Kazlauskienė, 1995: 147). The honey harvesting feast was called *bičkopis*, *bitkopis*, *bičkuopis*, *medkopis*, *bičiuolija*, or *medynos* (LEEŽ, 2015: 179; Piškinaitė-Kazlauskienė, 1995: 147; Vaitkevičienė, 2019: 222). It happened once a year, usually in mid-August. Pranė Dundulienė identified the honey harvesting feast with the feast of Austėja that was also celebrated in the mid-August by venerating flowery plants from which bees gathered honey, as well as harvesting honey and giving sac-



Virginija Pugačiauskienė is demonstrating the candle making craft at the festival of the Live Archaeology Days in Kernavė.



rifices to the goddess Austėja. On the 15th day of August that the Christians chose to celebrate the Assumption of the Blessed Virgin Mary, flowery plants are also celebrated in belief that they have healing properties and provide protection from evil spirits (Dundulienė, 2018: 37). Honey harvesting starts with a common ritual: "Before opening the hives, everybody prayed together and made sacrifices to the holy patrons of the bees Austėja and Bubilas and then splashed the holy water..." Sundays were chosen for honey harvesting. Apparently, honey harvesting was perceived like a festivity, rather than work. In ancient times, the day of honey harvesting was considered holy (Dundulienė, 2018: 37; Vaitkevičienė, 2019: 221). The first honeycomb was given to priests and later to beggars, neighbours or children. Honey harvesting involved various prejudices and spells that were to promote success for the bees (Dundulienė, 1982: 70). The main dish of the feast was honey. It was also given to the guest so they could take it home.

Feasts were also held when harvesting honey from the tree hives (Petrulis, 1970: 160, 161). Tree hives were opened twice a year: in spring to clean them and in autumn to harvest honey. Tree beekeepers harvested honey in autumn when it was already clear how much honey had been gathered and what share of it could be taken so that the bees could survive the winter on the rest. When a beekeeper harvested honey, he took his share that made two thirds of all



For many years, the old tree hive had been one of the main accents of the village of Margionys.

the honeycombs and left the upper third of honeycombs for bees so that they survive winter (Piškinaitė-Kazlauskienė, 1995: 43). This tradition is still maintained by apiarist R. Norkūnas working in the village of Musteika: "All the honeycombs in the hollow must be divided into three parts: two of them may be taken by the beekeeper, and the third part, of course, with honey, is to be left to the bees." The cut-out honeycombs were replaced with dry fern or hay to keep the bees warmer in winter (Piškinaitė-Kazlauskienė, 1995: 147). Beekeepers harvested honey from tree hives mostly in September: "Around St. Michael, bees stop breeding and flying, so it is the right time to harvest honey" (LKŽ e.: *drevėti* means to harvest honey from hollow trees). Honey harvesting that was one of the most important tasks of a beekeeper demanded certain preparation. On the other hand, a particular respect had to be shown to bees too. For instance, it was forbidden to visit bees when being dirty, smelly, sweaty or in the state of hangover. Bees hate that and may quickly drive such beekeeper away. Due to this reason, it was believed that bees were able to sense bad men and sting them, whereas they loved good men and helped them and left them unhurt (Kazėnas, 2015). A beekeeper went to harvest honey only after washing himself and changing into clean clothes because bees hated dirt and stung if they sensed the smell of sweat. Beekeepers took care of their bees both in their homesteads and in the forests. They perfectly knew what irritated bees and how they had to be treated because climbing trees using *geinys* demanded both skills and knowledge. Therefore, before going to the hive, they "... made the sign of the cross and climbed only afterwards... They said: the most important thing was not to be sweaty, and they wore a white shirt so bees would not attack" (Dundulienė, 1982: 70; Šalcinis, 1999: 2). The tradition that beekeeping was the business of men was maintained in Dzūkija for the longest. In other parts of Lithuania, female beekeepers started appearing already in the early 20th century, although they were few. Meanwhile in Dzūkija, the old folk still believed that bees could be kept only by mature men, and there were no female beekeepers even in the first half of the 20th century. Bees were men's job (Petrulis, 1974: 159). This was caused by the fact that Dzūkija maintained tree beekeeping and ancient customs. Tree beekeeping required physical strength, endurance, ability to be absent from the family and



skills of surviving in the wild. Such beekeeping was not safe or fit for women.

For a long time, beekeeping was one of the most important businesses in the Grand Duchy of Lithuania. It changed along with the changing political situation of the country and shifts in foreign markets and economy; nevertheless, beekeeping adjusted and survived. The tree beekeeping tradition has survived till nowadays. You can learn about this business at the Tree Beekeeping Apiary established at the village of Musteika.

Bees are mentioned in songs, fairy tales, riddles, proverbs and sayings. Toponymy also preserves information about beekeeping: there are villages named Barčiai and Barteliai in the Varėna district, the town of Vaškai in the Pasvalys district, the town of Bartninkai in the Vilkaviškis district, Bartlankės in the Telšiai district, and the village of Bartninkai in the Jurbarkas district. Some forests are also named after beekeepers: the forests of Barteliai and Barteliškė in Varėna district and the forest of Bartiškė in the Raseiniai district (Isokas, 2006: 68). The history of beekeeping is also reflected in the coats-of-arms of some Lithuanian towns. Tree beekeeping survived in the South-Eastern Lithuania for the longest. It is not a coincidence that a bee is depicted on the coat-of-arms of Varėna. The coat-of-arms was created in 1969, the Republican Heraldry



Wax melted in the old way.

Commission endorsed the idea of artist Kęstutis Gvalda and prof. Česlovas Kudaba that the coat-of-arms of Varėna was to reflect the ancient traditions of beekeeping of this region. The motives of the coat-of-arms were discussed several times, as there were various suggestions: a bear climbing a tree, a bee, a honeycomb, etc. The project of a bee with a honeycomb was discussed for the longest. In 1970, K. Gvalda presented a new version of the coat-of-arms adding the blooming heath. It was decided to give up the honeycomb and the final version of the coat-of-arms of Varėna was the bee flying over six blooming heathers. Unfortunately, it failed to be approved. The heraldry traditions of the Lithuanian towns were revived only during the National Rebirth. The coat-of-arms of Varėna was drawn by the same artist – K. Gvalda, and it was approved by the Heraldry Commission of the Republic of Lithuania on 24 November 1994, while the President of Lithuania issued the final affirmation decree on 12 January 1995. The coat-of-arms depicting a golden bee on a blue field and six silver blossoms of heathers of with golden petals and pistils that symbolize the ancient beekeeping traditions and diligence of the people of the Varėna region (Averkienė, 2020). Two other Lithuanian towns, namely Bartninkai and Vaškai, have coats-of-arms related to ancient tree beekeeping. The Bartninkai town, had no historic coat-of-arms, so it was decided to create it based on the name of the town. Considering that tree beekeepers were called bartninkai in the ancient times and that they gave the name to the town, it was decided to draw the coat-of-arms depicting a bear with bees. The residents of the towns were long involved in beekeeping and, most probably, the name of the town developed on the basis of their business (*bartininkas*, *bartninkas* means a tree beekeeper in Lithuania). In the Slavic languages, a tree hollow was called *борть* and tree beekeepers were called *бортьники*. The commission



decided to depict a bear protecting itself from bees (VLE e.: Bartninkų herbas). The coat-of-arms of the town of Vaškai depicts a honeycomb that is the source of wax (*vaškas* in Lithuanian). The red character V painted on the honeycomb background symbolizes the name of the town. According to various versions of the origin of the town name, it could have originated from the yellow colour of wax, of which the first church building that enabled the development of the town was painted. Yet, the name could also be related to beekeeping in this region (LE, 1965: 237; VLE e.: Vaškai).

Ancient people that were unaware of the laws of nature were impressed by the diligence of bees and organisation of their life reminding the life of humans, as well as the mystery of their birth and death. So, bees were highly respected and deemed to be extraordinary. Bees were related to many totemic images and in the Lithuanian language they are the only beings that “die” like humans and not like the rest of the animals. As people highly respected bees and were unable to understand them fully, they mystified both bees and beekeeping and included many magic elements into the relevant works. In some places, the habit of taking off hats in front of bees or paying other homages was still preserved in the early 20th century. (Dundulienė, 2018: 37). In the folklore, bees are usually related to good spirits and souls of the dead that may reincarnate in bees. In our culture, the image of a bee symbolised diligence, hard and accurate work, wisdom, love to the family and the native land. For many centuries, the image of a bee in the culture was unquestionably positive. Therefore, beekeeping that influenced the spiritual perception of the world and social relationships, became a part of both economic and cultural history.

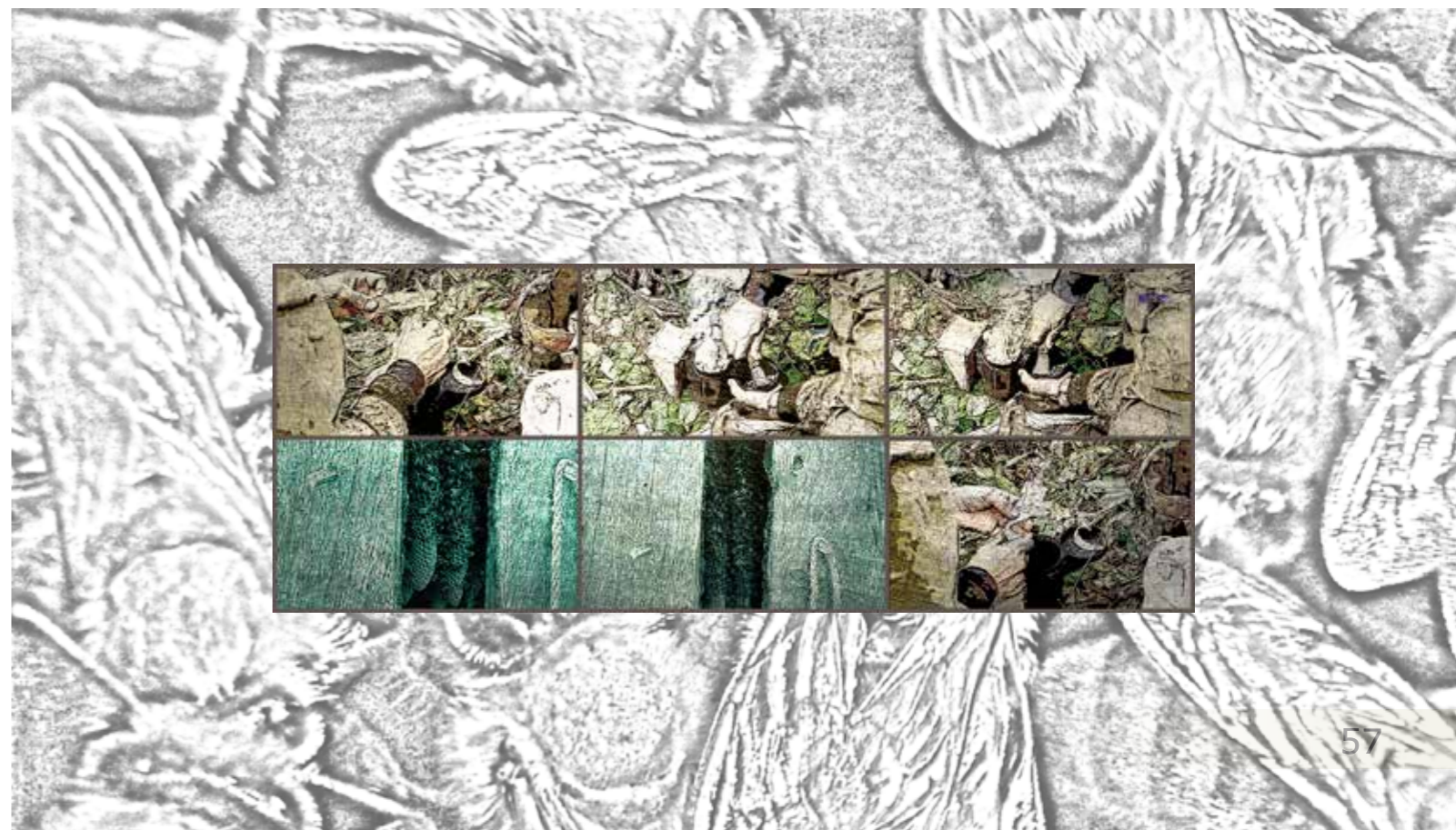
*Even unintentionally, bees make a man do everything in a timely manner, teach him to work consciously and to be economical; they awaken the action of mind and attention and give peace and satisfaction.*

Jonas Laurinavičius

## GLOSSARY

**Austėja** – is the goddess of bees and the patron of family and serious and modest women.

**Apsėdai** – is a custom when the groom is treated by the bride and her friend sitting on both of his sides.





## Life according to the Rhythm of Bees

With the warm spring wind, the winter cold and blizzards have gone and the new life has awakened. But it is neither ants, nor bees or even humble-bees that shows up first in the light and warm of a resurgent spring. The first sign of the upcoming spring is a change of a tune in the songs of birds who have spent the winter locally. We listen to that change by the end of winter and in the early spring. The tune is easy to hear: it awakens our soul and brings new feelings. Bees living in hives also undergo this invisible shift that is so hard to notice from the first sight. When bees feel warm, they start to prepare for spring: the time comes to raise bee-workers that work on the spring flowers. The new year cycle with its works, worries and joys begins.

The beekeeper also becomes anxious. He has not seen his bees since last autumn: bees should not be disturbed during the cold period; hives and tree hollows must not be opened. Nevertheless, in winter we listen to bees: if you put your ear to the inlet of the hive, you will hear a quiet buzz that gets

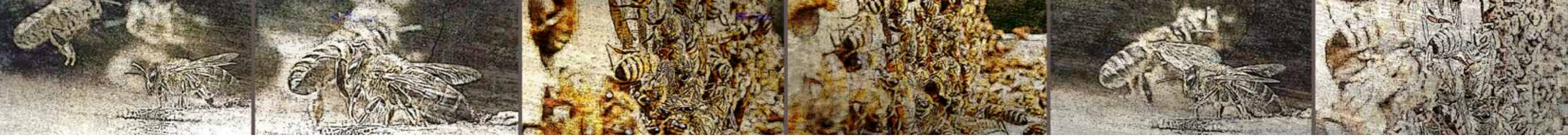


A new tree hive built in the Tree Beekeeping Apiary in Musteika.

slightly louder when you quietly knock upon the hive. Bees spend winter in warm: hives maintain the inner air temperature at 14-28 degrees Celsius. If bees have been kept well with enough food left and the hive or the tree hollow properly insulated and if the bees have been treated from varroosis, they should not experience too many difficulties. In winter, the main enemy of bees is not cold, but mice, as well as some birds and martens. All of them want to taste bee products. Mice start attacking hives already in autumn. If they get inside, they make their nests and feed on honey weakening the bees that rarely survive such neighbourhood and mostly die out. Martens and woodpeckers bother bees in winter too. Woodpeckers make holes and martens try to get into hives looking for weak spots where wood is rotten or the side boards are poorly fixed. Spruce branches tied around the hive or the hollow tree with bees protect them from intruders. They also protect inlets from being blocked by snow. When spring comes, it shows whether the hibernation of bees was taken care of properly.

The first fly-out of bees is a sign showing how they spent the winter. On a warm day of an early spring, a beekeeper goes to check whether his bees fly or not. It is not a usual phenomenon, especially when snowdrifts are still lying. Nevertheless, if the sun shines in a clear sky, hives may heat up to 10 degrees Celsius or more and the bees are driven out. The first fly-out of bees may happen in late February or early March. The fly is an indication of the strength of the hive. You can watch an interesting picture in a bee farm or near a tree hive: bees spread in the air and tiny yellow droplets appear on white snow; these are undigested food from the organisms of the bees that they can clear only now.

All of that happens both in apiaries and by tree hives. Only in the forest, where there is less sunshine and warmth comes later, the first fly-out of bees may happen later. Snow is not always present when bees start to fly out. The warmth of the early spring stimulates vegetation of some plants as well. Hazelnuts are the first to bloom and bees find their first spring food therein. In



the early spring, bees also gather pollen from black alder blooms, as well as yellow resin from alder sprouts and petals from which they make propolis. Then the time comes for other plants to blossom: willow, aspen and poplar join the cause. It is good, if such plants grow in plenty: then bees get occupied from the early spring. This can be promoted by planting certain bushes and trees. In Musteika, there is quite a lot of melliferous plants and bushes around the presently deserted meadows of the Musteika Brook. Here you can watch how bees labour in yellow willow spruces in the early spring.

In spring, beekeepers have various works but there is no urge for most of them. One of the most important tasks is protecting bees from ants. Big brown forest ants impose the major threat. Such ants make huge anthills; they can dig deep into the ground and often they settle in and around rotting tree stumps. There are many anthills in the forests and on their outskirts because ants like sunshine, and that is exactly where our stump hives and some tree hives are located. To avoid ants, we have to help the bees to clean the inside of the hive or the hollow as early as possible. By the way, we also have to watch that no bigger anthill appears near the apiary or the tree hives. If an anthill



The purple tansy (*Phacelia tanacetifolia*) is one of the most melliferous plants. Bees gather nectar and purple pollen from these plants.

appears, we have to dig it out, put it into a barrow and carry further from the bees. It is especially important in spring: ants love aphid and their secretion, but while there is no aphid and the food is in shortage in spring, they seek to attack bee hives.

Other spring works of a beekeeper are not hasty as well: mostly, they are limited to watching the bees and enjoying the changes brought by spring. We observe how the bees visit the first plant blossoms and fly to the water. A small pond by the hives of the tree beekeeping apiary in Musteika is the place where the bees come to drink. When the weather warms up, it is really nice to sit by it. It is always full of life. When water warms up by the banks of the pond, the bees come down to pick some and carry it to the hives.

In spring we observe the bees getting stronger. Modern beekeepers keeping bees in frame hives watch them continuously and give the so-called candy paste to strengthen weaker bees in spring. The candy paste is made of sugar powder and honey sometimes adding pollen as well. Bees living in stump hives can also be strengthened with candy paste in spring: it should be put at the bottom of the hive.

Preparing swarm traps and finding places to hang them is another spring task for a beekeeper. It is especially important if the bee farm is expanded or if there is a need to replace bees lost during winter. Empty hives and tree hollows are cleaned in winter and spring: we will need them when bees start swarming. In spring, you can also plan other works: for instance, what melliferous plants you are going to sow or plant and where. Then your life will be easier during the bee swarming period. The most important thing is not to plan too much. Beekeeping in May and June is quite intensive: bees must be checked several times a day and swarm traps must be watched continuously.

The work at the Tree Beekeeping Apiary of the Dzūkija National Park and the Čepkeliai State Nature Reserve is slightly different than at an ordinary bee farm. Usually, works are carried out here not only in accordance with the season but also following the ancient beekeeping tradition. Educational activities are also carried out here: guests and visitors are regularly introduced to the



exposition and the apiary.

Sowing melliferous plants in the fields by the Tree Beekeeping Exposition and the Apiary is yet another work for spring. The sowing begins in early April. Usually, lacy phacelia is sown first. It can be sown every month: then its blooming period that starts in June will continue till autumn. Buckwheat is sown the last. This cereal is local, traditional and well-adapted to our sandy soil but it is susceptible to frost that may hit even in early June. Sunflowers are also sown along with the abovementioned plants. Their beautiful yellow flowers bloom in the second half of summer and attract bees and other insects. Glandular globe-thistle that was first planted at Musteika by tree beekeeper Vytautas Tamulevičius also looks very decorative. Bees love this biennial plant and though it is quite demanding and hard to grow, all the related hardships are paid off by its decorativeness and melliferous gain. Other melliferous plants, like yellow and white honey clover and white mustard, are sown as well. Bees love rosebay willowherb, blue giant hyssop, and especially oregano that produces a lot of nectar even in high heat and is always surrounded by its lovers. Sandy



A buckwheat field in bloom looks like a giant hive. Fragrant buckwheat blossoms produce a lot of nectar, so beehives are often brought to buckwheat fields.

soil is not really fit for clover, goat's-rue, lucerne or common sainfoin. These plants are very melliferous and it would be good to have more of them, but they are hard to grow. It is good for bees to have many plants that bloom in spring. Therefore, you need hazelnut and willow plantations by the bee farm; willows also grow well in sandy soil. As for summertime, bees love linden the most. So linden trees are also protected and respected.

When the period of sowing comes to an end, the main trouble of beekeepers, namely, bee swarming, begins. Bees start swarming in May when the blossoming of orchards is over. However, if spring is very warm, early swarms may appear already by the end of April. Bee swarming when bees breed in hollow trees and stump hives is uncontrollable and may last long: small swarms may appear even in July. Nevertheless, the earliest swarms are the strongest and the most valuable. Usually, they are the largest ones and have more time to gain strength till autumn. Beekeepers have a lot of swarming-related troubles. If there is a need to replace the bees lost during winter or to expand the apiary, bees must be watched. This must be done continuously, because the occurring bee swarm may depart swiftly and fly away in any direction. It must be noticed as soon as possible in order to avoid losing bees. The noticed swarm is collected into a special sack or a swarm trap. Sometimes it may be complicated, especially when the swarm hangs somewhere high in a tree. Old beekeepers say that swarms are always valued. Losing a swarm means losing a great treasure. Algirdas Valentukevičius, the old-fashioned beekeeper from the village of Kabeliai said that no matter where the swarm hanged or how high the tree was, he always caught it, brought it back and let into a hive.

When a swarm is caught, it must be let into a hive. It is easy, but you must have a hive prepared for a new bee family. Bees are brought into a hive in the evening. Preparations must be done: you must make a rising path to the inlet of the hive – put some boards and cover them with a cloak, preferably with a white one, because a white background makes bees more visible. When you are letting bees into a hive, it is very important to find the mother-bee that must be put into the special cell called *matašnykas* in the local tongue. The cell is made of black alder and the queen bee has to spend two days therein; afterwards you let it out. This is done so the bee swarm could not escape from





the hive. It is easier with tree hollows, as bees tend to fly to them themselves.

After the bees are let into the hive, the trouble is not over yet. They must be watched carefully, especially during the first days when they start to explore the surroundings. Sometimes the swarm decides to escape from the hive. Everything ends well if the queen bee is separated and kept in the *matašnykas* cell. Then bees make a circle or two around the bee farm and come back to their queen. In order to prevent the swarm from escaping, beekeepers may use other ancient tricks. You need some water and a whisk. Water is splashed onto the swarm with a whisk and this prevents bees from flying. You can also make strong noise by bouncing iron tools: bees get confused and gather into a ball somewhere near the apiary or the hollow tree. In the event of success, the swarm is caught. Sometimes visitors of the apiary can watch the process. If a swarm is flying low, you can reach and catch it and then collect into a swarm trap.

In the early summer, the work in the tree beekeeping apiary is the most intense. Bees swarm and settle in hollow trees. The collected swarms are let into hives and watched to prevent their running away.

In earlier times, when tree beekeeping still prevailed, the hives were opened

rarely – usually only twice a year. In spring, the hollow of the hive was checked to see how the bees had spent winter and to clean dead bees from the bottom. Honey was harvested only in autumn. Bees have always been highly honoured. Up to now the perception of bees has changed considerably, but they are still in great respect. Yet, the beekeeping based on modern frame hives is much more intense. It is regularly checked how bees work, how much honey they have collected and whether they have larva. Bee swarming can be controlled: honeycombs can be checked for the presence of the larva of queen bees. To prevent swarming, such larva must be taken out. Frame hives enable watching the entire life of bees. Tree hives provide no such opportunity; however, in modern times the work with tree and stump hives has been changed as well. Now, such hives are also opened quite often, especially in summer, when the Apiary receives a lot of visitors. Sometimes honeycombs are cut out to check whether bees have gathered honey. Visitors find it interesting to see how a natural honeycomb looks like. This happens at the Tree Beekeeping Apiary. The Tree Beekeeping Trail is a different story: here the tree hives are not opened in summer and honey is harvested only in autumn. Only recently, after the Lithuanian dark bees mating station has been established at the outskirts



The apiary of Jonas Kašėta at the village of Mergežeris.



Natural sand is the best protection from ants.



of the Čepkeliai bog, the bees of the nearby Tree Beekeeping Trail are being bothered more often, as eggs are taken from some hives in order to breed the local bees. The works of cleaning the isolation zone around this bee mating station are also carried out: this means that alien bees are evicted from some of the tree hives.

Summer is a time for feasts and events, so fresh honey is sometimes required, especially during such feasts like Live Archaeology Days in Kernavė, *Subatėlės vakarėly...* (Saturday Night) in Marcinkonys and others held in early summer or later. The last event at the Tree Beekeeping Apiary is the honey harvesting autumn feast (held in the second half of September). There are several horizontal and vertical stump hives with bees at the farm and several tree hives with bees nearby, so there is plenty honey for tasting. The Apiary visitors value honey from tree hives and taste directly from honeycombs.



A more progressive beekeeping began when bees were moved to log hives.



Freshly made honeycombs shine yellow.

Summertime tends to be the most intense, as most of the works fall into this period. Nevertheless, if an opportunity occurs, you may also want to visit neighbour beekeepers, to enjoy the bee farms of close and distant bee-partners and to share experiences. Nowadays, beekeeping is mostly modern: bees are kept in frame hives. Beekeepers can talk about their experience endlessly. It is good to listen to their tales in winter, but they sound even better in summer when beekeeper's tales are accompanied by the humming of working bees or a well-groomed garden or orchard of melliferous plants growing by the homestead. It is even more interesting to meet an old beekeeper ready to talk about beekeeping in good old times. Some of them still keep bees in stump hives. Their experience fits our purposes the most because the tree beekeeping apiary concentrates exclusively on beekeeping in stump and tree hives. Beekeepers mostly talk of beekeeping traditions of their own families. Sometimes they recall how their fathers used to harvest honey from hollow trees as they knew how to climb them using *geinys*. We do our best to revive such traditions, to preserve them and to pass further.

The great troubles occur in the apiary by the end of summer and when autumn comes. It is the time of honey harvesting. The work at the ancient apiary is very complicated, especially when it comes to high tree hives. When honeycombs are cut out, bees are moved and they start appearing everywhere. This slightly reminds beekeeping in the Himalayas: bees, smoke and dripping honey all around. We already use modern beekeeper's suits that are not fit to climb trees. The veil is especially uncomfortable as it gets stuck in the ropes of *geinys*. Nevertheless, it is better to work in the suit because then bees cannot sting the beekeeper.

Other difficulties also occur during honey harvesting. We can no longer learn how ancient beekeepers used to deal with them: we must find our own ways. One of such unanswered questions is what kind of vessels were used to carry cut-out honeycombs. Most probably, these were some wooden buckets or watertight baskets made of linden bark. We have not found actual artefacts, so we take the most convenient items. We use enamelled buckets. A bucket is lifted into the tree and honeycombs cut out from the hollow are put into it. Later honeycombs are put into a larger enamelled bucket, where they are grinded mixing honey and bee bread. Everything what is in honeycombs get into hon-



ey. Such honey is scarce: you can get up to two kilograms from a stump of a tree hive or even less.

In ancient times, honey was harvested in autumn. The choice of time is not coincidental. In autumn bees are already prepared for winter: young bees have already hatched and the hive is filled with honey. Bees that hatch in early autumn are those that spend the cold season in the tree hive. It depends on their strength how much honey is going to be gathered in spring. The preparation of bees for winter begins in the early September. Usually their honey resources are checked during the harvesting. If honey is harvested at the end of summer, bees have to be given extra food. If honey is harvested in the second half of September or in August, bees are not fed, but enough honey is left to promote their survival through winter. The norm is to leave the honeycombs by a span from the top of the hive or by a span from the edge of the opening in the end of the nest, if the hive is horizontal. This is how ancient beekeepers did it, and we continue to do it now. We even put sticks into hives to mark

the margin from which honeycombs must not be moved or taken: this is the winter supply for the bees. The sticks are put into hives perpendicularly, approximately a span from the top of the hive or the tree hollow.

Treating bees from varroosis is another autumn trouble. We cannot expect that bees will manage to get rid of these tiny Varroa destructor ticks by themselves. If not treated, the ticks spread and infect other bee farms. Although it is hard to treat bees in tree hives, some methods help. We smoke the hives with Varidol or oxalic acid. Although modern beekeeping is quite advanced, most of the usual varroosis treatment methods are not fit for hollow tree or stump hives, as there is no access to the inside of the bee nest and only healing smoke can reach it.

When all the preparations for winter are over, bees enter the period of peace and quiet. Their time in the hive will be long. Although warm days still happen in the mid-autumn, bees are unwilling to fly out. Their last fly-out is hard to notice, but it is still possible on a sunny autumn day. The final autumn work is to tie spruce branches to tree and stump hives. This has been done since ancient times and modern beekeepers continue the tradition. They cover the hives with spruce branches from the front; sometimes they also use protective boards. This protects inlets from snow, strong winds and even birds. This way tree hives are protected from black and spotted woodpeckers and smaller birds whose knocking may draw bees out of the hive and lead to their death. Spruce branches provide some protection from martens as well. Hollow tree and ordinary hives must also be protected from mice that sometimes get into hives, make their nests there and disturb the bees.

Winter may be a quiet period for bees, but not for beekeepers. Their tools and other gear used throughout summer come back to warm workshops for repair. *Geinys* must be fixed, new hollow tree or stump hives must be made and honey must be poured into vessels. These are the usual works, but some new ideas also occur every winter. For instance, in the winter of 2021, a new tree hive was made: as many as four hollows were gauged in one tree trunk. That tree trunk was later included into the Tree Beekeeping Exposition. *Geinys* requires most of care. We have two sets at the apiary. We made them ourselves. One of them was made by Algis Svirnelis, a beekeeper and carpentry



A woodpecker has just attacked a log hive.



Log hives are covered with spruce branches for winter. This way, bees are protected from woodpeckers, mice and martens.



artist from the village of Zervynos. *Geinys* must be fixed to promote safety of tree climbing. It is interesting that *geinys* may be used not only for tree climbing: Juozas Miškinis, a beekeeper from Marcinkonys, told how he once used *geinys* to climb the church towers in order to fix the broken windows. You can also use *geinys* to get birchbark suitable for weaving. So, this gear is quite important and universal.

In winter, other working tools are also checked. It is highly important for a beekeeper to have a proper split wood basket. Earlier, there used to be at least five split wood basket weavers in the Dzūkija National Park, so the experience of weaving such baskets was passed continuously. Now, we pass it further at the annual split wood basket weaving summer-camp held at the Tree Beekeep-



Beekeeper Algirdas Valentukevičius from the Kabečiai village is melting wax the ancient way.



The apiary of Vytautas Tamulevičius at the village of Musteika.



An ancient-way-looking beekeeper from the village of Mardasavas wearing a beekeeper's veil.



A bee swarm landed on a pine tree branch is being collected into a sack.



Tree beekeeper Vytautas Tamulevičius.



Tree beekeeper Algis Svirnelis and operator Jonas Bilinskas are working at a tree hive.



ing Apiary. Only two or three real split wood basket weavers have remained in Lithuania and the craft is at the brink of extinction.

Most of the crafts one way or another related to tree beekeeping are rare. The old candle making method is rare as well. Earlier candles were made by beekeepers in winter. Now we seek to preserve this tradition, so making candles and casting vax is one of our winter tasks. Usually candles are made in December or January because vax candles are consecrated on Candlemas on the 2nd day of February. This tradition has been preserved since the ancient times.

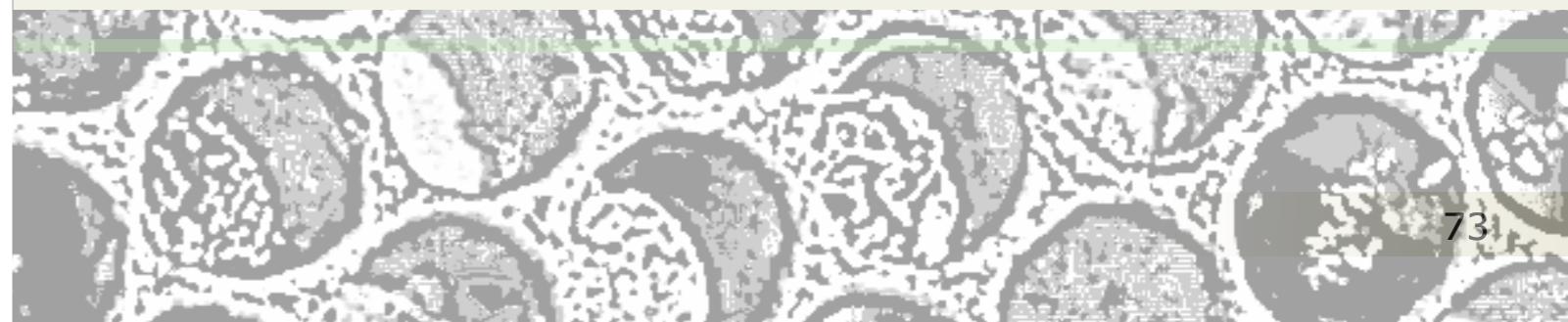
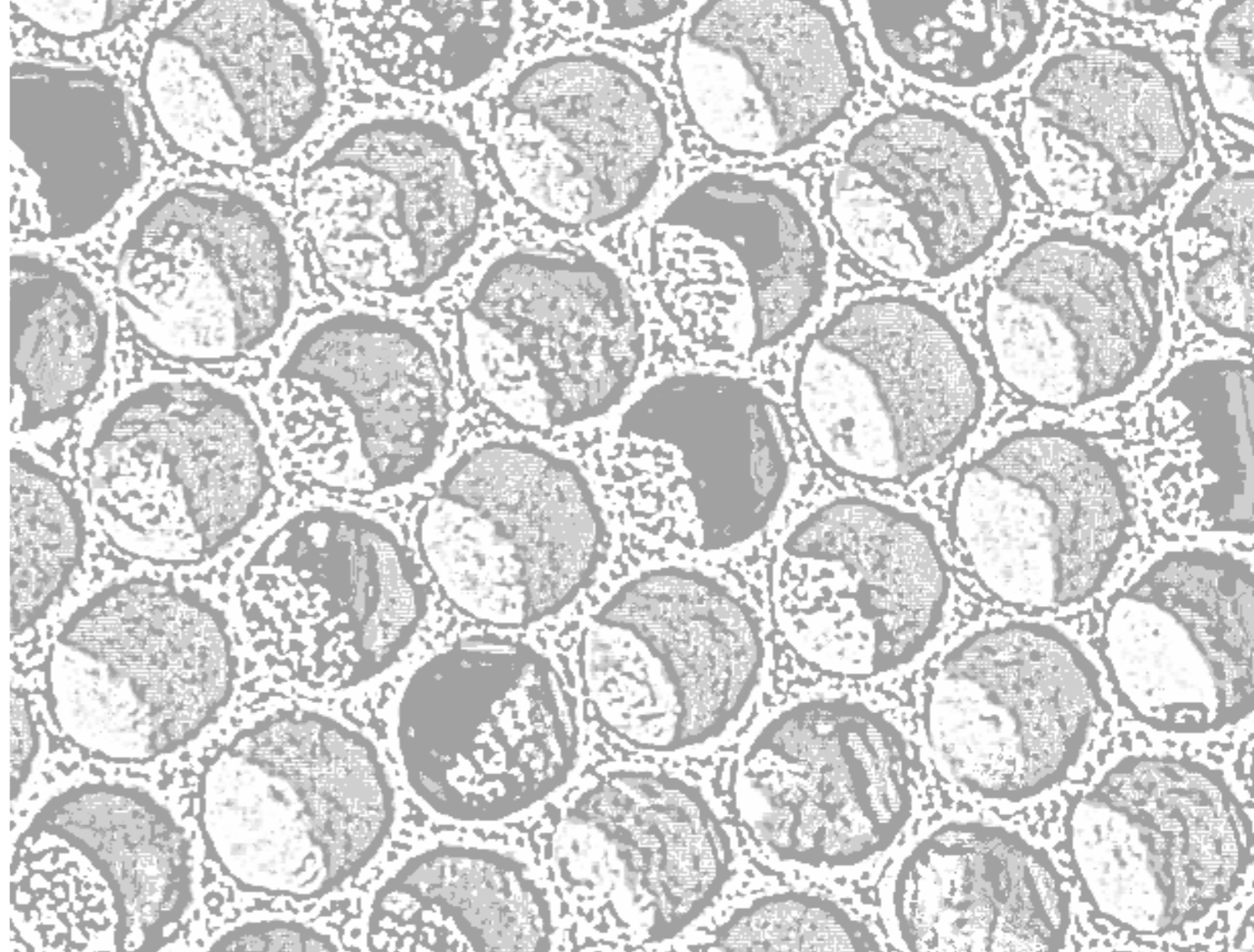
The tree beekeeping is also rare and it is at the edge of extinction. Only a few people are involved now. But it must be preserved. Modular training courses for the beginners of beekeeping organized by the Directorate of the Dzūkija National Park and the Čepkeliai State Nature Reserve help a lot. The courses attract up to ten young beekeepers and sometimes even more. By maintaining tree beekeeping and sharing the accumulated experience, we promote the liveliness of the ancient tradition and the relevant crafts.

*Let's work as diligently as the bees do, let's preserve the treasures of flowers, let's raise the spirit of those dissatisfied with life in the meaningfulness of poetic beekeeping.*

Father Jeronimas Pečkaitis

#### GLOSSARY

**Matašnykas** – is a cage for the queen bee.





## Bee Products and their Use

Honey, wax, pollen, bee bread, bee milk, propolis and bee venom – all these products are necessary to promote life and efficiency of bees, but they are also useful for people. Healing, preventive and restorative properties of bee products are often better than many synthetic products (Puišys, 2006: 3). In the beginning, people used only honey and wax. Honey and wax were main products and, for many centuries, they had been highly demanded both in local and foreign markets.

Since the most ancient times, honey had been used not only for food, but also in medicine – both in the folk and the traditional one. Physician Hippocrates described the healing properties of honey as early as in 2400 B.C. (Kibirkštis, 2009: 13). In ancient Egypt and Greece, honey was used for embalment and conservation purposes (Puišys, 2006: 15).

The tree beekeepers of our region also had known the taste and healing properties of honey already since the 13th and 14th centuries. Some tree beekeepers paid their tributes to the manors in honey. A good share of the



Bees make regular hexagonal honeycomb cells.

harvested honey was used to make mead, and the rest was exported. The fact that honey was a purchasable commodity is proved by the letter of the Grand Duke Vytautas to the Grand Master of the Teutonic Order of 24 January 1409: the grand duke complained that subjects of the Order block purchasing of honey, goats, horses, etc. (Isokas, 2006: 67). Honey was an important medicament, a food supplement and the main component for mead production. Although bees were abundant, beekeepers were short of honey: "... our beekeepers had a lot of bees"; "... linden groves on the banks of the Merkys were endless bee farms and there were more bees in the woods..."; "but our people did not have much honey: the manor demanded a lot" (Petrulis, 1970: 158).

The great Roman poet Virgil (70 to 19 B. C.) called honey the fragrant gift of the heavens (Motiejūtė, 2021). Honey is a valuable food product: it contains a lot of glucose and fructose, various ferments and other useful components strengthening human organism and maintaining its vital energy (Ceileris, 1997: 20). Scientific investigations have proved that honey has a positive effect on the organisms of humans, animals and bees themselves not only due to various biologically active components but also due to their biologically active overall balance. Honey has a well-known immunological, stimulating, anti-allergenic, pharmacologic, anti-radiologic, conservating and anti-biotic effect. Anaesthetic and anti-inflammatory properties of honey have also been known. Honey stimulates growth of the granulation tissue that quickens healing of wounds (Puišys, 2006: 14). In the past, honey was not seen only as an important food in the Dzūkija region. It was used rarely and served only to the dearest guests and sick people: "Honey is a sweetener and a medicine." Earlier, a beekeeper gathered some 15 to 20 kg of honey in a season and then distributed it to relatives and neighbours who had no bees "by droplets for medicine" (the norm of "a droplet" was a dipper or several spoons). The sort of honey was identified by the beekeepers based on the colour. Honey gathered from buckwheat and other grasses was more used for food, whereas linden honey and pine honey were mostly used for medicine. Honey was used for food only randomly (except for feasts); it was eaten with bread. Honey was mostly used



for the dishes of the Christmas Eve and Easter (Petruelis, 1970: 162). Honey “was grinded into a mash along with honeycombs, then heated and filtered through a sieve” to separate honey from wax (LII ES 1081(48): 73) or eaten with honeycombs, if they were cut from stump hives (LII ES 1081(46): 71). Until the 19th century, honey was the main sweet. It was used to make mead, it was served to guests, brought when visiting sick friends or as a fairing or a wedding present. Honey was fit to be used as a supplement to various dishes. It was drunk with boiled milk, tea, coffee or bread kvass. Honey was also used to make cake, bread or curd cheese sandwiches. It was also served with fresh cucumbers. Honey was used to bake gingerbread and wedding cake *karvojus*. Honey was also used to make mead brandy and *Krupnik* liqueur (LEEŽ, 2015: 180).

The folk medicine has developed and preserved the natural methods of using bee products for disease prevention and healing. Biologically active bee products include honey, pollen, bee bread, propolis, queen bee milk, male bee larva milk, bee venom, extracts of dead bees, and wax moth tinctures; the



Honey from tree hives is grinded and eaten together with honeycombs, bee pollen and propolis.

hive (bee nest) air and even the sounds produced by bees have a positive effect on human health (Kibirštis, 2009: 11). Many beekeepers sought to have some honey for medical purposes available for all year round. It was assumed that old candied spring honey was more fit for healing (Petruelis, 1970: 163). In some regions of Lithuania, honey consecrated on the day of St. Laurentius (the 10th of August) was used to heal the sore throat (LEEŽ, 2015: 180). Honey was also used to treat lung diseases, abscess, erysipelas and festers. The ointment for wounds was made of wax, grease, resin, onions and honey (Isokas, 2006: 131). Honey used to treat cough was mixed with aloe. To make an abscess rupture, a tobacco leaf was lubricated with honey and put upon that. People suffering from insomnia drank warm milk with honey before sleep. The same drink was used to treat constipation. A teaspoon of honey with a glass of cold water increases gastric acidity. Bee bread (propolis) heals stomach ulcers. Honey was deemed to be a must-eat product for children and elderly. If a bee stung, honey was the first aid: it had to be applied on the spot of the sting (Jakaitis, 2016: 39). Honey was also used as an antidote in the event of mushroom or other food poisoning (Puišys, 2006: 15). D. G. Settegast, the author of the first beekeeping manual in Lithuanian, mentioned the usefulness of honey: “Honey and wax have always been well paid for; and isn’t it good in a household? For the sick, it is a relief and strong medicine. Sugar is expensive but not half as healthy.” That was the first reference to honey as healthy food having strengthening properties in the Lithuanian beekeeping literature (Salinka, 2019: 11). A living bee was also used for treatment. It was kneaded into dough and given to a cow bitten by a snake: bee venom was believed to be stronger than snake venom (VU RS F-306: 8). Bee venom was also used for healing. Their properties were known in Ancient Egypt, India, Greece and China. Bee venom was used to suppress pain, to stipulate hair growth and to treat festers. It is known that Charles the Great and Ivan the Terrible treated their gout by means of bee stings. In the 19th century, such treatment method received more attention and was started to be researched scientifically (Puišys, 2006: 86, 87). The simplest method of applying bee venom was known for ages: you simply had to put a bee or a few ones to the sore spot



and make it sting. Bee venom has a bacteriocidal effect, it lowers blood pressure and dilates blood vessels, so it is used in the pharmaceutical production. Sure, those who are allergic to bee venom must avoid bees. Pollen gathered by bees is especially wanted in pharmaceutical and beauty product industry. Propolis and bee milk are also used in medical production (Ceileris, 1997: 21, 22). Since the Antiquity, propolis was known as an extremely strong preservative. It was used for embalming as well as for keeping food products (Puišys, 2006: 39, 40). It was recommended to chew honey containing pollen and wax to strengthen gums, clean food remains from teeth and prevent periodontitis. Wax improves intestinal function, so you should not be afraid to swallow some. Chewing wax stimulates excretion of saliva and gastric juice, and vitamin A it contains is necessary for the recreation of the skin epithelium (Baltuškevičius, 2021).

Honey quality is highly dependent on the vessels honey is kept in. In the old times, honey was kept in wooden vessels. Buckets or barrels made of linden wood were used for that purpose (Dundulienė, 1982: 68). They had to be new and unused for other product, so that honey would not acquire the smell of

meat or fat or other. Nowadays honey is poured into glass or glazed ceramic or enamelled metallic vessels. Honey must be kept in a clean, dry and cool place. There must not be any other odours (like petrol or gasoline), because honey soaks in smells and vapours (Straigis, 2002: 138). Honey is a product of nectar and honeydew procession: bees add some components of their own and keep honey in honeycombs of their hives (Puišys, 2006: 4). Therefore, honey is a product of both plant and animal origin.

A certain share of the harvested honey went for export, whereas the other was used to produce mead as honey was its main component. Mead is one of the oldest alcoholic beverages in the world. Historical sources reveal that mead-based beverages were produced in Iran, China and India already in 7000 to 5000 B. C. Mead was used in Ancient Egypt, Greece and Rome. In the Middle Ages, mead was widespread throughout the entire Europe and Lithuania too. It was produced in Poland, Bohemia, Finland and Russia. Mead is a national beverage in many countries (VLE e.: midus). Wulfstan of Hedeby wrote around 887 to 901: "... The Aesti do not make beer but mead is plentiful." Peter of Duisburg, the 14th century chronicler, mentioned that mead was



In the Middle Ages, wax was one of the most important export commodities. It was used for many purposes: from making candles, polish and seals to cosmetics and jewellery.



Beekeepers use feathers to brush bees off from honeycombs.





The local bee *Apis mellifera mellifera* in the oak blossom.



Melted wax is cooled. In the Middle Ages, melted wax was formed into lumps that were called stones.

brewed at manors and monasteries and sold at their inns (Isokas, 2006: 67).

The place of mead in social life is represented not by the beekeepers but by the nobility feasts. Mead was an integral component of the image of the grand duke of Lithuania. This was a prestigious beverage of the rulers and the noblemen: "mead was an important argument in the diplomacy and warcraft of the Lithuanian rulers [...]; hundreds of barrels of mead served at their feasts manifested their might and wealth." During the Congress of Lutsk of 1429, the Grand Duke of Lithuania Vytautas served mead in abundance to other European monarchs. Every day "700 barrels of mead were served apart from other beverages." Mead was also widely used at the court of Sigismund II Augustus, although, in the 16th century, imported vines were already starting to push it out more and more. In his letter written from Lithuania in 1544, Stanislaw Gurski, the canon of Cracow, wrote that the royal court consumed 30 barrels of beer and 30 barrels of mead weekly. Although in the 16th and 17th centuries mead was already replaced by wine at the royal court, the nobility continued to use it (Vaitkevičienė, 2019: 202, 203). It was traditional to ferment mead after honey harvesting too. Mead-making recommendations were provided already in the beekeeping manual of D. G. Settegast. He advised to use fresh honeycombs, mentioned plants fit to be used for mead-brewing and described the very process of mead fermentation (Zetegastas, 1801: 146–152). Mead is a honey-water solution; it was brewed. Some sorts of mead were enriched with clove, ginger, other spices, flavourful roots, herbs, raspberries and cherries. The best result is received when mead is mixed with berry juice and fermented for a longer time. Mead with dried berries was loved by ladies (Ragauskas, 2013). It was brewed at manors and monasteries. Urban mead brewers started appearing since the 14th century (Isokas, 2006: 131). Mead was brewed by inn-keepers and other individuals, later – by small business companies. Mead and beer brewing was seen almost as magic (Ragauskas, 2013). Before schnapps appeared, only beer and mead inns were mentioned. Mead brought a lot of income, so the state monopoly for mead brewing and trade was established already in 1432. The right to brew mead was granted by the grand dukes of Lithuania (Isokas, 2006: 131). In the 16th century, mead brewing was highly restricted. Peasants could no longer brew mead for their own



needs without supervision and taxation. In the 16th century, mead brewing was mostly concentrated in larger cities and mead-brewers' services were established. Mead was also brewed at manors and monasteries, they had a lot of old well-fermented mead. Mead produced in Kaunas was best-known and valued, as Kaunas had a long mead brewing tradition. It was widespread in Lithuania, Poland and Prussia. As tree beekeeping declined, mead brewing declined as well: high prices of honey made it economically inefficient. Mead brewing was also impeded by the spread of schnapps brewing (Dundulienė, 1982: 71; Paulėkienė, 1964: 105,106). This way the traditional Lithuanian beverage lost its importance (Paulėkienė, 1964: 106). Although mead was one of the oldest Lithuanian beverages, during the interwar period its brewing in Lithuania remained undeveloped due to high production costs and low demand. Mead production received no government dotation and depended on the activeness of the individual businessmen and enterprises (Ragauskas, 2011: 622). In 1940, mead-brewing tradition was interrupted. Mead production was renewed only by the end of 1950s at the Stakliškės beer brewery Gintaras (now, UAB Lietuviškas midus) under the initiative of Aleksandras Sinkevičius and based on the technological process he recreated (VLE e.: midus). Ever since, the Stakliškės brewery has been producing mead in the industrial mode.

The second important bee product was wax that used to be one of the main Lithuanian export commodities throughout the Middle Ages and even substituted money. Wax gains were always lesser than honey gains, so wax was always in demand: it was always valued and economized.

How does wax occur? Wax is a sticky material produced by bees to make honeycombs and seal the filled cells. A worker bee has eight wax glands on its underbelly: they secrete tiny particles of wax. Bees bring them to their mouths using bristles and brushes on their legs and then chew them and use to make honeycombs (Isokas, 2006: 67–68, LEEŽ, 2015: 310). It is known that in 1279 the Sudavians traded wax to the Ruthenians in exchange for grain. Although chronicles fail to mention wax export in the 12th century, it must have existed, especially to Polish and Ruthenian cities that had a lot of churches that needed wax candles (Isokas, 2006: 67–68). After Catholicism was adopted as the state religion in Lithuania in 1387, the demand for wax and candles grew at the domestic market too.

In the 13th and 14th centuries, farmers paid tributes in furs, honey and wax.

In the 13th century, wax from Lithuania went to Hamburg, Vismara and Rostock. There even were wax custom offices that dealt with wax export. If a merchant sold wax abroad tax-free, one half of the earnings went to the treasury of the grand duke and the other was left to the merchant. Wax was exported not only from the current Lithuanian territory. For instance, the Polotsk custom office passed through 4,411 stones of wax in 1506 and 4,812 stones of wax the next year. Wax was used to make candles for lighting Catholic and Orthodox churches, as well as manors; a lot of wax was used to seal various treaties: the seals were pressed onto a piece of wax attached to the document. Candles were made at wax shops. Wax shops also formed wax lumps that were called stones. Usually, one wax stone weighted 14.4 kg. Nevertheless, wax stones could be both lighter weighting about 12.5 to 13 kg and heavier – up to 30 kg. Wax lumps belonging to several owners were much heavier. Sometimes wax stones carried their own seals (Isokas, 2006: 94). The fact that wax melting shops and stores were monopolized by the state also show the significance of this bee product and its importance to treasury income. The main wax shops were located in Kaunas, Vilnius and Trakai. The bishop of Vilnius also had a wax shop and was allowed to produce candles for his own needs. However, when he started selling candles, his wax shop was closed. In early 16th century, 12,227 stones, or approximately 160 tons, of wax were transported annually via the river Nemunas. Sometimes wax stones were forged using real stones or other heavy items, so they were started to be sealed to prove the quality and avoid fraud. Custom offices charged 6 groschen for every wax stone and an extra fee of 1 groschen for the custom officer for every 6 wax stones. Lithuanian wax was exported to Poland, Germany, Holland, France, Spain, etc. Some wax was exported tax-free (Isokas, 2006: 132).

Wax was the first polymeric product in the world and it was produced by bees. In the Middle Ages and later times, wax was used not only in fine arts and sculpturing, but also in the industry like ship building, dye and varnish production and galvanic technologies. Wax was used to make moulds for metal casting already in the 9th and 12th centuries. Wax was also used in cannon casting. First, a cannon mould was made of wax, then it was covered with clay and burnt. Melted wax ran out leaving the cavity and then bronze alloy was poured into that. Bells for churches were cast the same way (Baltuškevičius, 2021). Certain technological processes of jewellery making had not been



possible without wax too, so wax was also used in precious metal casting (Isokas, 2006: 55). Wax was also used to make seals of various sizes and forms that were attached to documents. Seals often served as signature substitutes (Dundulienė, 1982: 71). And signs on wax tablets marked the wake of literacy.

According to the data of the Beekeeper Association that worked in Lithuania during the interwar period, in 1927, there were 9,837 beekeepers that owned 40,026 hives (including 63.1 % of frame hives, 35.3 % of stump hives, and 1.6 % of straw gives). A frame hive produces approximately 0.3 kg of wax and a stump hive – about 0.7 kg of wax (Prušinskis, 1930: 58). Wax was used for various funeral, wedding and baptism rituals. Some part of wax was used to make artificial honeycombs. The shop of artificial honeycombs opened in Kaunas under the initiative of the Lithuanian Beekeepers' Association produced 36 kg of artificial honeycombs using wax provided by the farmers in 1928, 169 kg



Candles being made by Paulina Stasiulionienė from the village of Musteika.

in 1929, 576 kg in 1930, 743 kg in 1931, and over 1,000 kg in 1932. It was estimated that Lithuania (except for the Vilnius region) produced about 20,000 kg of wax annually and 40,000 kg were used for the needs of the church (wax used by the Orthodox churches and for other needs is not included; Prušinskis, 1930: 56, 58). With the start of production of artificial honeycombs, the shortage of wax became even more obvious. So, in 1930 to 1936, approximately 12 000 kg of wax was imported (Kazlauskienė-Piškinaitė, 1990: 30, 31).

According to the accounts of the old people, wax played a major role in farmers' lives. Wax was used by tailors and even housewives for clothing sewing and mending. In Dzūkija, wax was used to cast soles for bast shoes and knitted lady's shoes. There are written records saying that in the past, boats that sailed in the Nemunas River were made of wicker and sealed with cast wax (Petruolis, 1970: 163). Some people use wax to graft fruit trees or to paint easter eggs. Wax is used to make artificial honeycombs. And when people built a log house, they put a wax cross into the first log clamp to chase away the ghosts (studijoms.lt).

Wax is a great raw material for certain industries, like pharmacy (for the production of patches, candles, etc.) and cosmetics (wax is an ingredient of creams and pomades). In general, if a product needs to be sticky or slippery, wax is added. In optics, wax is used to polish lenses. Wax is also irreplaceable in the restoration of the works of art (Ceileris, 1997: 21). As for industrial applications, wax is used in the production of varnishes, polishes, lithographic pencils, ink, furniture pastes and other products. Natural bee wax is used in electronics, radio-technics (production of insulation bands and dielectric sensors), galvanic plastics, and polygraphy (stiff paper production) (Puišys, 2006: 26).

The production of wax candles was closely linked to beekeeping. Farmers that kept many bee hives in their gardens and had know-how and tools inherited from their ancestors made candles exclusively for their own needs. It was not acceptable to sell candles for money in villages. However, honey and candles were given as presents to neighbours to express gratitude for the help in gathering rye, flax or potato harvest. If someone died, candles for the funeral were



also given for free. Everyone sought to have a consecrated candle for protection. And sure, a candle had to be lit by the bed of a dying person, so that he or she would not close the eyes without the death candle (Strašunskas, 1975: 206, 207). The tradition to consecrate candles on the Candlemas (the 2nd of February) has survived till nowadays and such candles must be made of natural bee wax. Candles had to be prepared for the entire year. The candles of the Candlemas were deemed to be sacral. They were used to perform Candlemas rituals at home, so that the home and the family members were protected by the holy fire. It was believed that a consecrated candle protected the home from the lightning strike: it was lit and put on a windowsill if a storm started. It was also believed that such candle protected the house from fire. When a



Tree beekeeper Algis Svirnelis is demonstrating the ancient way of wax filtering.

house was built, a piece of a consecrated candle was put at the intersection of logs of the first row. Beekeepers used to put a cross made of two pieces of a consecrated candle into a new hive, "so that the devil could not lure out the swarm". The coming year, its weather and the harvest were forecast based on the weather of the Candlemas: a cloudy day meant that everything was going to grow well and a blizzard meant a bad year and frequent bee swarming (LEEŽ, 2015: 89, 90).

Such candles were burned by the deathbed. Dying people held them to appease death and lighten the way for the soul to the heaven. Consecrated candles were burned at funerals and *atminai* (LEEŽ, 2015: 90). Burning a consecrated candle was equal to a prayer. They were put into the coffin to protect the diseased from evil spirits. A consecrated bee wax candle was deemed equal to singing seven gospels for the diseased. Even in the late 20th century, bringing consecrated wax candles to the funeral instead of flowers or money was still vivid in the rural culture (Žukauskienė, 2018). Consecrated wax candles were also used on Christmas Eve to foretell the coming year for the family: if the smoke went upwards or towards the table, the coming year promised to be good; if it turned towards the door, that promised misfortune (LEEŽ, 2015: 89). When a child was born, a candle was made and it went with him or her to the deathbed. The baptism candle had to be long, straight and beautiful because it set the future for the new-born. The candle dedicated to a boy had to



be straight and tall, so that the boy could grow up tall, healthy and handsome; the candle dedicated to a girl had to be straight, long and thick, so that the girl could have thick and beautiful hair and beautiful stature (Pugačiauskienė, 2010).

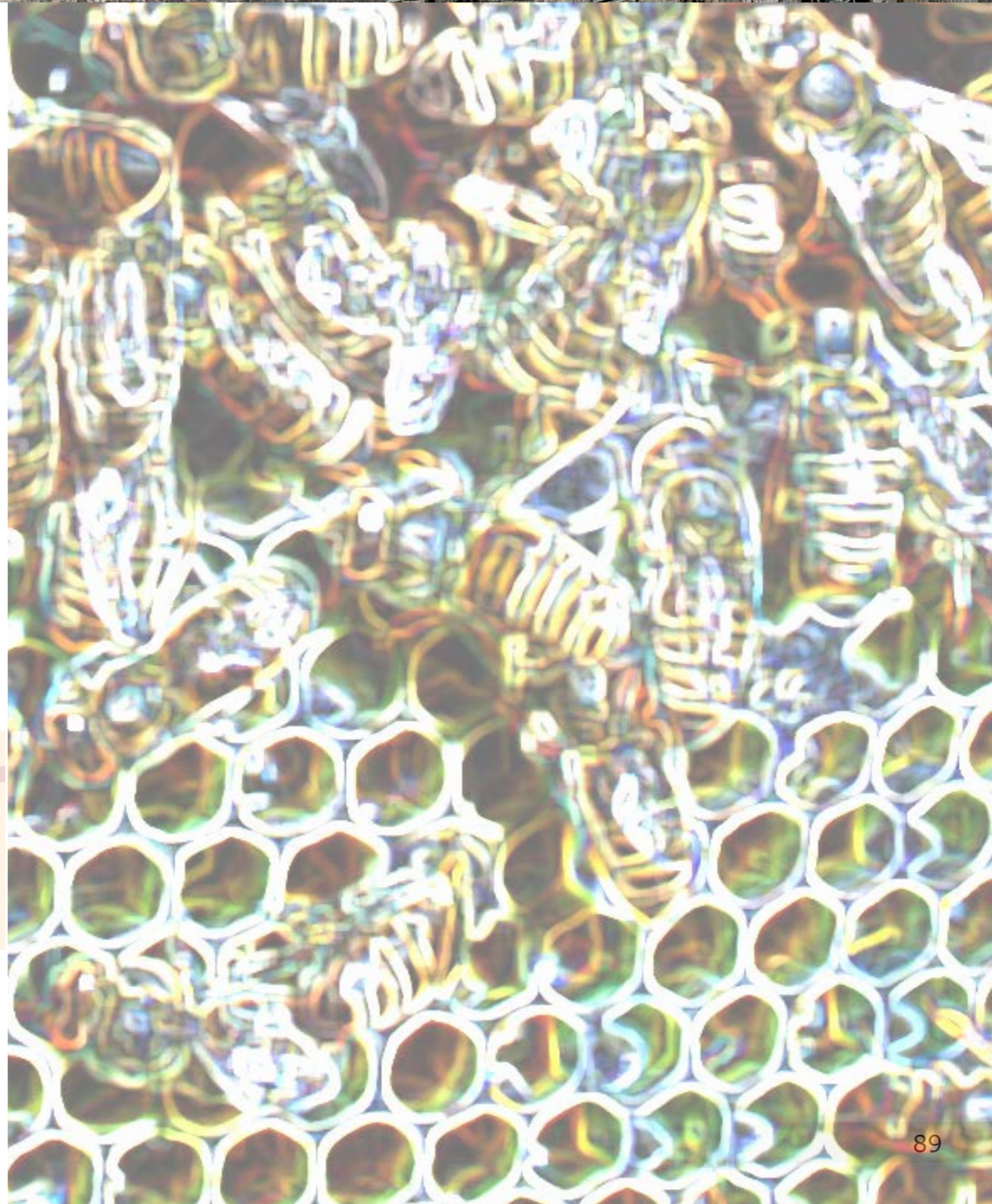
Beekeeping is one of the oldest businesses in Lithuania and bee products have always been known and widely used for medical purposes and food, as well as to pay tributes, to carry out religious festivities and rituals, and also in a daily life. Beekeeping is an integral part of life, culture and traditions of the local people. Our ancestors lived in harmony with nature and bees played a special role in their lives. Bee products have not lost their value even nowadays and scientific discoveries reveal a lot of new and interesting facts about bees and their products.

*These tiny and diligent beings that were deemed to be holy have always been a treasure and still are...*

Laura Piškinaitė-Kazlauskienė

#### **GLOSSARY**

**Atminai** – is the memorial of the diseased. On this day, relatives, friends and neighbours of the diseased attend a dedicated mass, then visit the grave and finally attend the mourning feast with prayers held at home.



# Beekeeping and Tourism

As soon as the spring sun starts shining, nature wakens up. The first birds return and anthills start moving. Bumblebees get out of their nests. Bees that have patiently survived winter in a warm hive also fly out for the first spring ride. Although snow is still often lying around at this time, the new life is already born in the beehive.

Bees have lived through millions of years, so they are well adapted to various natural changes. From the first sight, this insect flying in forests and meadows from one herb to another looks no different from the others. However, bees have received a special attention: many books were written about their life and work. But do we really know them? Tree beekeeping adds to this knowledge and represents one of the ways to get to know bees.

Though living in a hostile environment since the ancient times, humans eventually learned to tame it and change in their own favour. Domesticated animals became an integral part of our life. Humans sought to domesticate bees because of the goods they made, especially because of sweet and empowering honey. But how to get these goods? Bees did

not rush to the anthropogenic environment. Humans had to adjust and learn how to look after them while they were still living in trees. Consequently, the long-standing tree beekeeping tradition that was passed from generation to generation emerged.

Now we can enjoy bees buzzing around our homesteads as well as the goods they bring. Humans have learned to get along with bees and refined their homes to make them comfortable both for bees and beekeepers. It may seem that tree beekeeping has gone into oblivion. However, ancient hollow trees bearing the memories of that still swing in the forests. They may seem to be an archaic relic, but they remind of the centuries-old tradition when bees and men have been the symbol of getting to know each other.

In many ways, bees are unique and very interesting insects. They are so tiny and yet there are so many incredible things about them! You can learn all these incredible things at the Tree Beekeeping Apiary established in the region of the forested Dzūkija at the village of Musteika near the Čepkeliai bog. Tree beekeeping is an archaic beekeeping tradition



The honey harvesting day was deemed to be holly in the past.



The buckwheat harvesting feast at the Tree Beekeeping Apiary. The buckwheat is one of the most melliferous plants grown in the region of the forested Dzūkija.



Looking after tree hives (dravės) is an obligation of every tree beekeeper. Tree beekeeper Algis Svirnelis is cleaning the bark from the dead hollow tree.



The Beekeeper's Hut at the Tree Beekeeping Apiary.

and one of the oldest forest businesses that survived the longest in the Dzūkija region. Tree beekeeping stipulated by the foreign trade reached its peak in the 16th century and the first half of the 17th century, but it was still vivid in the forested South-Eastern Lithuania in the second half of the 19th century. Tree beekeeping tradition that was disappearing at the turn of the 20th and 21st centuries was picked from the local beekeepers. The project Nurturing of the Traditional Beekeeping and Preservation of the Natural Meadows at the Village of Musteika was implemented in 2005 and 2006. To preserve this business, a Tree Beekeeping Apiary exposition at the village of Musteika of the Varėna district was established under the initiatives of the staff of the Dzūkija National Park and the whole business cycle from carving hollows to harvesting honey with traditional tools and selling it was recreated in 2006. The ancient methods of pressing wax and making candles were recreated too. The educational trail going past 6 old and 10 new tree hives was established, 25 new stump hives were made, a beekeeper's house-museum hosting traditional beekeeping tools was built at the Apiary. Eugenijus Drobelis, Sc.D., who was the deputy director of the Dzūkija National Park at that period was the initiator of this project. Everything is true and real at the Tree Beekeeping Apiary and exposition; everything has been tested through ages. It is not a coincidence that the village of Musteika was chosen for such an Apiary. Here, the business that once used to bring fame and impressive economic benefits to the GDL has survived the longest. The bees inhabiting hollow trees in the forests surrounding the village were looked after by Vytautas Tamulevičius. He said that he returned to the village of Musteika only for the bees (Černiauskas, 2018: 5). He was the primary enthusiast of recreating the tree beekeeping tradition. Valdas Jezukevičius, the forester of the Musteika Forestry, also played an important role: he encouraged the beekeeper to continue tree beekeeping and supported this business in every way.

In terms of educational tourism, this site of the Dzūkija National Park plays a very important role: here visitors learn about beekeeping, its development and features in Lithuania, the life of bees, their place in



the ecosystem and their ecology. The Apiary is very important for the purpose of promoting tree beekeeping as a traditional craft and principles of ecological beekeeping. In the Apiary, visitors can see how bees are kept in stump and tree hives and how honey and wax harvesting is handled. They can also learn how stump hives used to inhabit bees and mini-hives called vabikas used to attract bee swarms are made. Visitors can also try various crafts at the Apiary exposition. Musteika hosts the week-long Weaving Summer Camp that has already become traditional. This way old crafts of the Dzūkija region are preserved. Introducing, training and making – such is the aim of this summer camp. Camping is a perfect way to get acquainted with the ancient village of Musteika, its architecture, the local way of life and the nature of the forested Dzūkija. One of the main events introducing tree beekeeping is the traditional

Honey Harvesting Feast in September. The feast invites everyone who is interested in beekeeping and willing to discover something new and unknown. Buckwheat harvesting education is also performed during this feast: guests are introduced to this traditional cereal of our region. Visitors of the bee farm may not only be observers, but participants too. They can get in touch with the beekeeper's daily works: make a candle, a hive or geinys, as well as to taste a honeycomb right from a tree hollow. The best emotions come when you do things yourself. Visiting the Tree Beekeeping Apiary and the Tree Beekeeping Nature Trail is one of the ways to spend your leisure time. Beekeeping as a form of leisure that now is called the educational or cultural tourism was mentioned already in the 1920s: "Beekeeping brings a great pleasure for people in the daily life, it makes it interesting and gives recreation to



Geinys is one of the main working tools of every tree beekeeper. Participants of the tree beekeeping modular course for starters learn how to make it.



Juozas Miškinis, the last tree beekeeper of the old generation, with his self-made tools called geinys.



Preparing tree hives for winter: moments from a tree beekeeping training course.



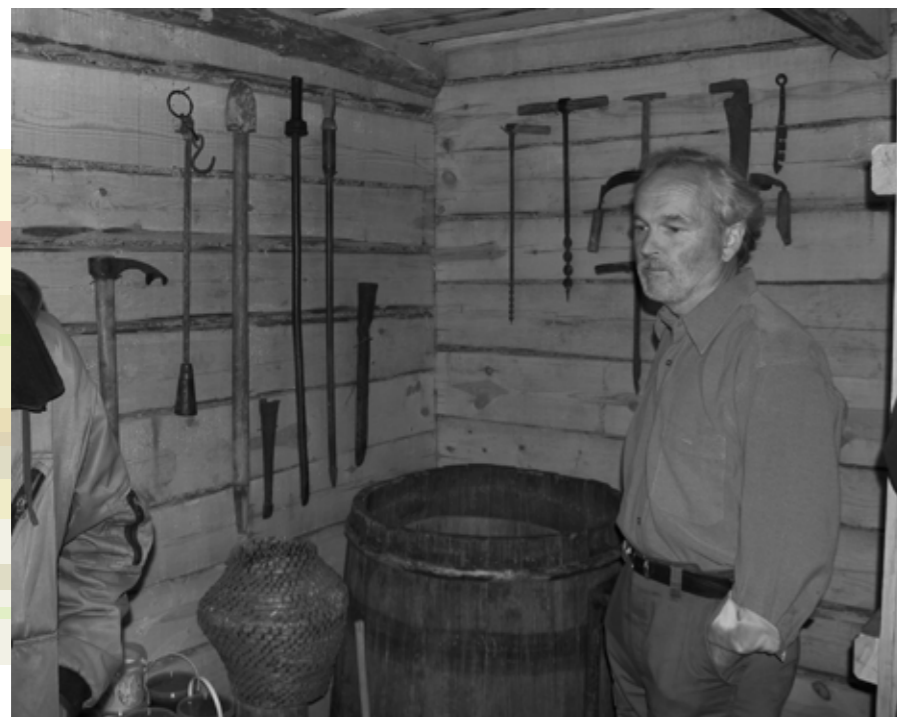
When climbing to a tree hive, a split-wood basket is taken along: it is used to carry tools or honeycombs.





the soul. Such recreation is especially important to those who work in the factories or sit by dusty desks all day long. Beekeeping is of great importance for individuals, families and the country as it softens the human soul" (Laurinavičius, 1928: 9). Such way of spending leisure time continues to be important nowadays too. Everyone getting to know bees for the first time finds themselves in a strange, but exceptionally fascinating and even fantastic world – perfectly organized and flexible, simple in its natural perfection, but also highly complicated. Getting to know bees demands elementary knowledge of modern biological life (Straigis, 2002: 6,7).

Nearly a thousand visitors visit the Tree Beekeeping Apiary exposition at the village of Musteika every year. Some of them come in organized groups, others prefer to explore on their own. Most of the visitors come during the warm season, when bees are the most active and melliferous plants bloom intensely. Visitors are introduced to the village of Mustei-



Doctor in natural sciences Eugenijus Drobelis, the initiator of the foundation of the Tree Beekeeping Apiary and exposition.

ka, its history and present. This village is one of the larger ones in the Dzūkija National Park. It is a scattered street-type village known for its architecture. The village is surrounded by rich forests. There are lots of wild animals and the adjacent forests and marshes are full of berries and mushrooms. Since ancient times, there were beekeepers that passed beekeeping traditions from one generation to another. Currently, there are 8 larger and smaller apiaries in the village and nearly 40 hives altogether. One of the larger apiaries belongs to the Dzūkija National Park. It has about 20 bee families in total: they inhabit stump or tree hives in the village as well as in the forest where the Tree Beekeeping Nature Trail has been established. Visitors are welcomed to the Apiary all year round because the life of bees is always interesting and the beekeeper's works never end. Winter is the quietest period both for bees and the beekeepers. If bees are properly prepared for winter, with enough food and well protected hives or hollow trees, they spend winter calmly. Meanwhile, the beekeeper uses this period to make new hives, to fix the inventory and to cast wax. When the weather warms up, the spring works begin and continue till autumn. In spring, bees are checked after winter, hives and tree hollows where bees have not survived are cleaned and prepared for new swarms. Swarm traps are erected to catch the swarms. In summer, we monitor how bees are working and harvest some honey to treat visitors of the Apiary. Yet, the main honey harvesting happens in the end of summer or early autumn. In autumn, bees are prepared for winter, so honey is taken only to the limit that bees could have enough food for themselves. In autumn, weaker hives are given extra food to promote the survival of the bees, especially the local ones. Bees also receive a preventive treatment from varroosis. Visitors of the Tree Beekeeping Apiary also learn the history of beekeeping from the early honey hunting to frame hive beekeeping that prevailed in the 19th century. In the living exposition you can see a fragment of a hollow tree that once was used for beekeeping. There are several man-made hollows too. Stump hives in the trees also remind of a certain beekeeping



period, when it was believed that bees could inhabit only stump hives elevated high in the trees and reminding natural tree hollows.

There are several inclusive activities developed for visitors. At the Tree Beekeeping Apiary exposition, you will be shown how to light a fire with a flint and a splitter. This fire lighting method was recreated based on the records of the local people and both children and adults love to try it. The fire is usually used to light the beekeeper's smoker used to calm bees. If the weather is good, visitors are allowed to have a look of an opened hive. They have to wear beekeeper's veils that promote protection from bee stings. Sometimes, depending on the season, some fresh honey is taken out.

Climbing a hollow tree with geinys is also interesting. We learned to make geinys from Juozas Miškinis, the old tree beekeeper from Marinkonys. Climbing a tree with geinys is a very special spectacle, not everyone is capable of doing that from the first try. When climbing with

geinys, loops are made for feet sequentially. This way the climber goes up until reaching the required height. The Tree Beekeeping Apiary exposition includes four tree hollows the highest of which is located at the height of seven metres, while the lowest is one and a half metres high. Climbing with geinys is most complicated when going up. When this gear is fixed at the required level, everyone can try it. When the board of geinys is fixed in the tree, climbing up and down becomes easier. This way the beekeeper may go down to pick the tools required to work on a tree hive.

Visitors of the Apiary may get acquainted with the tools that are used to work with bees most often. There is a number of such tools. Beekeepers need smokers to calm bees when harvesting honey. They also need axes that are used to open and close hive boards. The beekeeper's basket would also contain a knife to cut out honeycombs as well as a goose feather or any other bigger feather used to brush the bees off



A log hive hoisted in a pine tree at the Tree Beekeeping Nature Trail.



This is how natural honeycombs in a vertical log hive look like.



A log hive is being gouged with a special tool called peikena.



Harvesting honey during the Honey Harvesting Feast.



the honeycombs. Other tools are used as well, especially when it is time to treat the bees from varroosis or to feed them. Bees living in hollow trees can be reached not only by climbing with geinys. There are other ways too. You can also see and try them at the Tree Beekeeping Apiary. You can simply climb a ladder. This is the easiest way. However, it is not convenient to work when standing on a ladder, the board of geinys is more convenient as you can sit on that. The old way was to climb using a ladder made out of a branchy tree: visitors can also try such way of climbing.

The Tree Beekeeping Exposition also offers observing the ancient methods of wax casting and candle making. Approximately five kilograms of wax are produced here annually. Old honeycombs are melted and cast on an open fire, the mixture of melted wax and boiled wax is poured into a special sack that filters out impurities. Wax and water mixture runs out into a vessel where it cools. The hardened wax is taken off from the water surface. It is melted again to make candles. You can also try to make a stump hive; such work requires a special tool – a gouge

called peikena. Making a stump hive does not require many tools. Next to peikena, you may need an axe, an adze, a saw, a chisel and a set of drills. A stump hive hollow is gouged out like a hollow in a tree. This work slightly reminds the work of a woodpecker and so one section of the village of Marcinkonys where beekeeper Stasys Miškinis famous for gouging hollows used to live is called Geniai (the woodpeckers).

Honey is loved not only by humans. Bears also loved to eat it whenever they had an opportunity. So, it was necessary to find a way to protect tree hives from them. The protection gear was simple, but inventive. To prevent bears from attacking hives, a cudgel or a spiky bludgeon was hanged in front of the lid covering the orifice of the hive: if a bear tried to reach the hive, the bludgeon swung and hit painfully. The swinging bludgeon complicated access to honey: the harder the bear tried to push it away, the harder back-blow it suffered. Furthermore, sharp spikes were dug into the ground in front of the hollow tree or a harrow was put with spikes upwards: if a bear fell on that it got hurt and never came back. You will learn about these and other methods of protecting



Harvesting honey from a horizontal log hive.



Visitors of the Tree Beekeeping Apiary.



hives in the Apiary exposition.

This way the visitors of the Tree Beekeeping Apiary exposition are introduced to the ancient beekeeping. You can see various works and the actual life of bees in hollow trees. Bees love the tree hives made by beekeepers and choose themselves which ones to inhabit. Beekeepers' interference into the life of bees is minimal. The modern beekeeping is rather advanced, almost everyone can make use of its advantages. But tree beekeepers return bees where they belong: high under the crowns of the trees where few can reach them.

The Tree Beekeeping Apiary exposition is also fit for individual visitors. They can see both old stump hives and newly made ones. The hives are with bees. Those who want to learn more and love to listen can hire a guide. Visitors can get acquainted with ancient beekeeping tools and methods of their use. The exposition includes such gear like geinys, hoists for lifting stump hives and nesting boxes, veils, cells for queen bees, feathers to brush bees off from honeycombs, hive frames, wooden forks, sacks for collecting and transporting bee swarms, wooden feeders, gouges, and other ancient artefacts. You can touch everything and even try some tools in action. You can also taste fresh honey from the tree hives: it is not separated, honeycombs with honey, bee bread and other products are simply grinded. This way, honey is consumed along with other bee products.

The Tree Beekeeping Nature Trail is located 5 km from the village of Musteika. The arrows show the way from the Tree Beekeeping Exposition to the arbour at the starting point of the trail. You can see both old and newly made tree hives on the trail. The old hollows remind that tree beekeeping in these forests has been practiced since the old days. Stands built along the Tree Beekeeping Nature Trail inform how tree hives were gouged in the past decades ago and passed from one generation to another. A trip along this trail gives a great opportunity to see hollow pines reminding of one of the oldest crafts of this region and see a combination of sandy elevations and bogs characteristic only to the vicinities of Musteika. A trip along this trail will give you valuable knowl-

edge about the history of beekeeping and help to appreciate the work of the beekeepers of this region. There are bees living in both stump and tree hives on the Tree Beekeeping Nature Trail. Honey harvesting is usually done at the end of summer or early autumn. The process can also be observed. Bees mostly settle in the hollows by themselves: swarms come from the neighbouring forests. The interesting fact is that most of our bees are local dark bees *Apis mellifera mellifera*: they are well-adapted to our climate zone. Such bees are nursed, we try to preserve them.

You can also visit not only the tree hives located on the Tree Beekeeping Nature Trail. There are about sixty surviving hollow trees in the National Park. Some of them are old and decayed, but others are still doing well. Most of such hollow trees stand near the villages of Marcinkonys, Mančiagirė and Musteika. Some of them can also be found at the Čepkeliai Nature Reserve, in the village of Darželiai and near the villages of Grybaulia and Zervynos. Some of them can still be revived. The Dzūkija National Park protects these old trees. Forest supervisors and owners also undertook to preserve such trees because they represent our cultural heritage.

Beekeeping can be seen not only as a business, but also as a heritage



Jonas Bajoriūnas demonstrates candle making.



Winter is a calm period at the apiary, but you may want to listen to the quiet humming of the bees.



representing local traditions, history, culture and cuisine. All can be discovered traveling by the Honey Road. This route presents the ancient business surviving in the Lithuanian and Belarusian cross-border region.

There is also a beekeeping museum in the Aukštaitija National Park in Stripeikiai, Ignalina district. It was established in 1976 under the initiative of Bronius Kazlas. The outdoor and indoor expositions presenting beekeeping development, history, and inventory were opened for visitors in 1983 (Kazlauskienė, 2003: 252).

*Male bees are larger than worker bees; they do not work and sit in the hives instead; they go out of hives only in heat and buzz. Male bees have no sting and serve as mates to mother bee. In the beginning of every autumn, they are extinguished.*

Petras Vileišis



## The End Word

This book introduces one of the oldest businesses of our country – tree beekeeping. It presents the short history of the beekeeping business from the ancient times to the early 21st century. We introduce the stages of the beekeeping development and its changes determined by political and economic shifts in the local and foreign markets. Honey and especially wax were the main export commodities of the Grand Duchy of Lithuania. Beekeeping and bee products have not lost their importance till nowadays and science brings a lot of new and interesting information about bees and their products.

To preserve tree beekeeping traditions for the future generations, the nongovernmental organization Biota and the Directorate of the Dzūkija National Park implemented the project Nurturing of the Traditional Beekeeping and Preservation of the Natural Meadows at the Musteika in 2005 and 2006. In the framework of the project, 2 ha of the Musteika Brook meadows that were about to be covered with bushes were cleaned, a barn was built and a Tree Beekeeping Apiary and the Tree Beekeeping Nature Trail with tree and old-type stump hives were established. The Tree Beekeeping Apiary at the village of Musteika was developed following the ancient beekeeping traditions. The dying tradition was picked from the local beekeepers and the entire business cycle from making hollows in the trees to harvesting honey with traditional tools as well as use and sales of the products. The activities of the bee farm have been expanded to the organization of excursions, lectures, educational programs, summer camps and other events, promoting tree beekeeping at various public events, feasts and festivals.

In 2020, another project The Preservation of the Ethnic Culture Heritage and Tourism Development at the Tree Beekeeping Region was developed and started to be carried out to tidy up the territory of the Apiary and to renovate the infrastructure making it more comfortable to the visitors. The project was carried out by the Directorate of the Dzūkija National Park and the Čepkeliai State Nature Reserve and the public institution Nature Heritage Fund. The project seeks to preserve

the revived tree beekeeping traditions and to use them for the tourism stimulation in the Dzūkija region by means of information, promotion, education, organization of events, feasts, festivals, training courses, educational activities and trips. The chosen activities are informative and attractive; they give a possibility of get in touch with one of the oldest businesses in the history of mankind. Tree beekeeping in the Lithuanian border region is also presented in the developed tourist route called The Honey Road. When traveling along this route, you can learn not only the beekeeping tradition, but also the country history, culture, architecture, cuisine, the local people and their way of life. You can get acquainted and even learn the tree beekeeping craft at the tree beekeeping apiary in the village of Musteika. The business that was about to pass into the oblivion was preserved and revived by the efforts of the staff of the Dzūkija National Park Directorate.



Bee swarm has come to vabikas, a swarm trap raised by a beekeeper.

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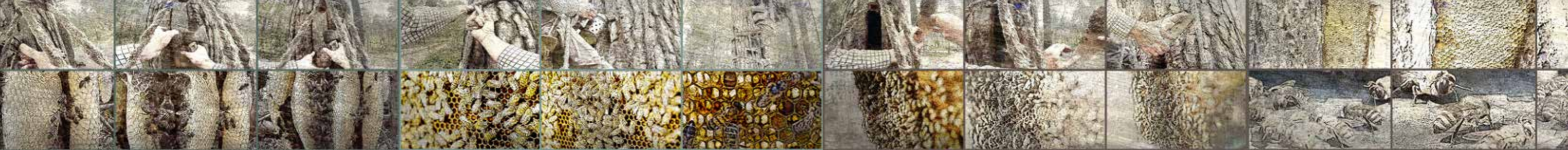
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A tree hive near the village of Mančiagirė.







Romas Norkūnas

Virginija Pugačiauskienė

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