Analysis prepared as part of the project "Hotels for Pollinators" realized by the NGO Journalists for Human Rights, with the support of the British Embassy in Skopje

URBAN BEEKEEPING

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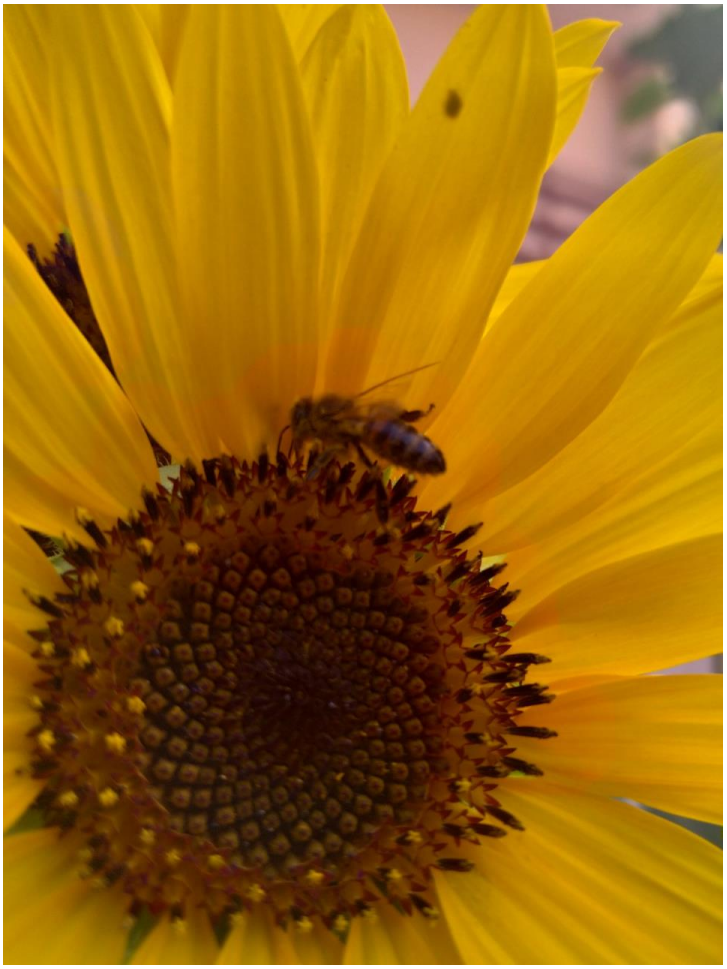

URBAN BEEKEEPING:

What is urban beekeeping? The simplest definition of urban beekeeping means keeping bees in a sustainable way in city urban areas.

Urban beekeeping covers a very wide range of activities in relation to the ultimate goal, which is the survival and development of bee communities in urban cities with sustainable productivity recognizable by obtaining quality bee products freely compared to ecological environments in the immediate vicinity of the targeted urban area.

To achieve the mentioned goal, it is necessary to do beekeeping in a sustainable way, and the sustainable way of beekeeping means quality beekeeping which is closest and most related to organic beekeeping. Sustainable beekeeping is considered to have a real basis for great success in urban centers. Making the right choice between conventional, organic, and sustainable beekeeping is not very difficult if we know that essentially organic requires sometimes applying too strict principles that will be difficult to achieve. While the conventional allows too much freedom and uncontrolled use of heavy and uncontrolled means in the fight against bee diseases. And so the choice is easy - sustainable urban beekeeping. This can be achieved in urban city centers with consistency in applying the established techniques and respecting the principles of sustainable beekeeping already seen and practiced in rural areas. Of course using those experiences, available information, training experiences, available and printed flyers, printed brochures and electronic materials, with the ultimate goal of successful and high-quality urban beekeeping. For that, it is necessary to have perseverance, perseverance in practice, and a love for bees and natural ecological oases in urban centers. We should not be deceived and expect that it can grow into a modern world trend, but we should always look with satisfaction that urban beekeeping will be a significant ecological balance and contribution to healthy urban living.

THE MEANING OF BEES FOR HUMAN SURVIVAL:

The common or known to us as honey bee appeared on the earth 140 million years ago, more precisely in the Tertiary period, while man appeared later. The first migrations of bees occur in the Ice Age when bees travel south to Africa to survive in warmer climates. After surviving, they inhabit Europe, Asia and the rest of Africa. While the settlement in North America takes place in the 17th century AD, in Australia and South America it was transferred to the 19th century and with the help of man the whole world is inhabited by bee colonies.

From the Ice Age until today, the evolution of bees has undergone several important changes, they have ceased to live independently and form a community in which they will warm up together and socially complement each other in a common colony by dividing the roles in the bee community so they can adapt. and survive in all conditions.

The earliest records of beekeeping date back to Stone Age Spain with drawings found in caves. The ancient Egyptians were the first beekeepers. In the Middle Ages beekeeping was a very important branch due to its use as a sweet substance and then honey and wax were traded en masse when the church played an important role in the development of beekeeping. At the end of the 18th and the beginning of the 19th century he got the first scientific bases by sharing that in a bee family there is only one queen, that the queen is paired in the air, a hive is made with a movable honeycomb and standard distance, which are used until today, then the wax press for hundreds of bases was found, then the first spinner for spinning honey was made. Scientific inventions used in everyday beekeeping make beekeeping easier, but not all bee secrets have been fully discovered and challenges are still needed in discovering bee wisdom and organizational skills, such as studying the life and survival of bees in urban areas.

If we draw a parallel between the evolution of bees to this day from its inception to the present day, it will simply raise the question of why bees are brought into a state of survival today, what is the reason?

The problem is complex and there are many reasons for the alarming situation with bees for which undoubtedly the biggest culprit is the man and irresponsible attitude towards nature. And it is based on:

- Impaired balance between animals and plants, especially between insects and plants, and disturbed balance between animals and insects, and the survival of bees is called into question. This means that biodiversity is reduced by destroying many indigenous plants and plants with excessive uncontrolled use of pesticides, thus disrupting the continuity of nectar and pollen sources, as a basic condition for the development and survival of bee communities. Particularly dangerous are the fruit growers and the uneducated traders of fruit preparations and the incomprehensible tradition of treating the orchards in flower, not knowing that the bees are pollinators and

pollinators of the orchards for a richer and more productive fruit growing crop.

- Manipulating the weather conditions, more precisely breaking the rain clouds as fear of hail phenomena disrupts the system of natural irrigation of meadows and nectar springs and especially plants that are rich in pollen and nectar juices remain without freshness and without root vegetation dry and become barren and become barren. . Due to the breaking of the clouds, the danger of fires and destruction of the flora indirectly increases, and thus the sources of nectar and pollen, ie the source of life of the bees. The wisdom of man and society should be in the direction of preserving nature, and not in experimenting or trying to manage and bring the weather under control.
- Climate change with all the unpredictability and drastic drops and instability of temperatures accompanied by cold northern winds are among the main reasons for the lower productivity in the quantities of honey and bee products :
- Insufficient education for novice beekeepers and active beekeepers. Beekeeping is a separate segment of farming or agriculture and does not belong to any branch in agriculture or animal husbandry. Due to their specifics and the necessary basic and advanced knowledge for successful and quality beekeeping, novice beekeepers often enter unprepared or experienced beekeepers remain insufficiently trained to fight bee diseases, which are currently the main reason for reducing the bee stock on our planet, especially for insufficient knowledge and successful management of the Varoa destructor tick, which is a vector of over 15 viral diseases in bees and thus directly reduces the immunity of bees and as a consequence bee families die in a large percentage in a few months, and thus directly has a reduction the number of bee communities worldwide.

So it is necessary to have a good education, good knowledge and management of swine diseases and the use of organic means and biotechnical methods in beekeeping to avoid resistance to certain means used by conventional beekeepers.

Beekeeping with hybrid non-indigenous bee breeds also contributes to having more aggressive bees, less productive and disease-resistant bees, because only the indigenous bee breed can successfully survive and give good results in pollinating and collecting nectar, as it adapts to that particular region. Only indigenous breeds give greater princes, overwinter better and deal better with bee diseases. Apis melifera makedonika is an indigenous breed for our homeland and in certain regions in the neighboring countries.

WHY URBAN BEEKEEPING IS IMPORTANT (compared to rural)

What is urban beekeeping and why is it especially important for urban centers? We are witnessing that some information about quality urban honey obtained on the roofs of buildings in the centers of some European capitals gives us the opportunity to think to make a comparative analysis mostly with rural regions and why urban beekeeping has hope and good prospects, taking into account the available information.

The advantage of urban beekeeping is due to several factors that are very important and give it an advantage over rural beekeeping. We will first mention the different biodiversity and this can be easily noticed by the richness of the yards with a wide range of different plants and cultivated flowers that in a very high percentage abound in nectar and pollen yield and almost every unintentional walker you will notice that in parks and yards. on the terraces and along the quays there is an abundance of worker bees collecting urban nectar from plants and flowers and the most important thing is that we have a very good continuity in collecting nectar and pollen without empty nectar days that we rarely find in rural centers and cultivated plantations.

A second important factor is the use of pesticides. Compared to urban centers where we have large monoculture plantations, where the fear of more secure income is dominant leads to uncontrolled use of pesticides and especially banned pesticides and insecticides, which in turn leads to mass

poisoning of bees. The use of atomizers and aircraft in the treatment of fruit and agricultural crops is more common in rural areas. It is almost imperceptible in urban areas because pesticide and insecticide treatment is not used in parks, green oases along rivers and yards or on the balconies of urban centers, this is the key factor that gives optimism and a bright future to urban beekeeping.

A third factor that is important for the success of urban beekeeping is the insufficient overpopulation with bee communities in urban centers, which leads to the possibility of higher yields, better pollination and obtaining better quality polyflora bee products;

The fourth factor is the wide range of opportunities for popularization and marketing of urban bee products, the possibility of setting up visible bee communities, the possibility of tourist attractions and setting up apikomors, educating school groups, for a better and healthier everyday life if we take into account that 10% of the benefits of beekeeping are directly received by beekeepers, and 90% are indirect benefits for citizens in urban centers. In short, bees evolved before humans, and humans need to monitor the environment in which bees live. Where there are more bees, there is a greater perspective for a better life !!! The urban city centers offer all the conditions for successful development and quality beekeeping and are in the interest of all its inhabitants.

INTERNATIONAL EXPERIENCES:

Beehives are not uncommon in major world capitals such as Paris, Vienna, Ljubljana, Belgrade. We do not notice that practice. Of course, the list of cities with urban beekeeping is very long. The real buzz on urban beekeeping started in the 90s of the 20th century in London. Today beehives are located at Buckingham Palace, the Natural History Museum, the Gallery of Modern Art and many other places, and London beekeepers are available to their citizens with all their needs around bees (holding stands, swarming, training beginners, etc.). The idea of urban beekeeping does not look bad at all if we know the fact that bees pollinate over 70% of the plant crops that humans eat. Or if we know that the activity of bees is 90% direct or indirect benefit to fruit growers and humans, and only 10% direct benefit to the beekeeper who cares for bee families, then the question should not be asked whether we should have urban beekeeping or not . The visionary beekeepers and the inhabitants of the urban cities mentioned above realized this and placed bee colonies on the roofs of the buildings, which in no way pose a problem to the inhabitants of the urban centers, not even to the people who are allergic to bee stings, for whom it is necessary to carry out certain educations for prevention and first aid. The danger of bee bites is equal in rural and urban centers. They learned that the bee is an indicator of fresh and clean air and if there are more bee families they will have an indicator of a healthy and relatively clean urban urban environment for living.

The quality of honey obtained in urban centers is exactly the same as the quality obtained in rural areas because bees do not go to a contaminated flower or plant, but if they ingest something

contaminated, they filter it, all residues, residues, heavy metals, they accumulate pesticides in their fat deposits so that their product can be clean.

Beehives can be placed on the roofs of buildings or houses, in yards or roofs of institutions, in parks without any danger, but under certain security measures (to be fenced with a hedge or a high green net) and to be taken care of trained and educated beekeepers.

Situation with bees in Skopje

There is no official urban beekeeping in Skopje, maybe in some suburban settlements beekeeping is kept, also in the park in Skopje there is an apiary that has been on that location for years, although recently the city authorities are making efforts to dislocate it, the apiary survives and should remain inthe heart of the city.

The biggest problem is the legislation on urban beekeeping, ie the legal safe distance from urban areas where bees and other domestic animals can be kept, these legal regulations are adopted by the city councils. So the biggest problem for urban beekeeping in the city of Skopje would be the neighbors and the legal regulations.

In addition to the wishes of beekeepers, well-meaning citizens and environmentalists, the city authorities should also show interest in the concept of urban beekeeping in Skopje. Owners of hotels and catering facilities presenting urban honey can also make mini apical nests and observing bee colonies in glass or plexiglass hives.

Of course, for placing beehives, certain criteria must be met, for example, that the bees must be placed at a minimum of 100 m from school, kindergartens, sports centers, 20 m away from the road or street and to find a solution not to disturbs the neighbor.

Beehives should be made of wood according to Balkan standards with preserved dimensions.

Honey plants that can be sown in the yards and parks in the city of Skopje are: sage, lavender, calendula, mustard or sweet fennel, linden, acacia, white and red clover, rosemary, ivy, almond, dandelion, etc.

SAGE

Sage is a genus of plants in the oral family. The name sage generally refers to common sage (Salvia officinalis), but can also be used for any member of this genus. The genus Salvia includes nearly 700 to 900 species of shrubs, herbaceous perennials and perennials with almost worldwide distribution.

Sage is used as a spice and medicinal herb and is also used to make essential oils. In phytotherapy, sage leaves are used, which are grayish-white due to the presence of white hairs. They are collected in the period when flower buds develop - in May and June.

LAVENDER

Lavender is an aromatic and medicinal wild plant. It grows on almost all types of soil that contain enough limestone, on very poor and stony soils and that is why this plant can be grown in our fields because there are not many requirements for the soil. Wet and acidic soil does not suit her. As a heat-loving plant it has great needs for heat, and especially light. It is recommended to grow at higher altitudes, up to 700 meters.

It should be planted in the south, unshaded exposure, which is not exposed to winds.

It grows as a low bush with a height of 50-80 cm. The stems are numerous, hairy and quadrangular. The leaves are linear-spiked, without leaf stalks and scattered. The flowers are small and gathered in clusters and with a very beautiful purple color, so lavender is grown as an ornamental plant. The flowers, like the whole plant, have a very pleasant smell. Due to its long-lasting and unique scent, lavender is one of the most widely used aromatic plants. It also thrives in urban areas.

MARIGOLD

The Latin name of marigold is officinalis calendula, which means healing and heavenly beautiful.
Marigold is an annual plant with low branched stalks and beautiful yellow-orange flowers.
Marigold has a specific, pleasant scent that is recognizable and different from other flowers.
Blooms from June to September.
It is a widespread plant that radiates beauty, is grown in pots or in the garden, but can be found along fences and roads.
Marigold is also known as a rain barometer - if the flowers are closed in the morning, then it will certainly rain during the day!

CLOVER

Clover is one of the most common perennial grasses that can grow anywhere: in meadows, forests, forest edges, city parks and lawns. Red and white clover are known.

Red clover grows to a height of between 10 and 110 cm, but rarely exceeds 60 cm. It is therefore ideal to grow in a pot for the rest of your life, or in any type of garden, large or small. Spring is a good time to plant red clover in the garden or change the pot. Does not require too much maintenance.

Red clover is a plant that must be outdoors in the sun. It does not grow quite well in shaded corners: the stems weaken, giving the specimen a sad appearance and it does not bloom.

However, it can be, for example, under trees whose crown is quite small.

White clover

White clover is usually sown in a mixture with perennials. Due to its shallow root system, white clover is sensitive to summer droughts because it cannot reach enough moisture.
However, even after severe droughts, white clover has the ability to reappear from seed. When there is moisture in the upper parts of the soil in spring or summer, white clover is able to regenerate from seed and multiply rapidly.

ROSEMARY

'Rosemary (Rosmarinus) is part of the family of oral flowers, belongs to the genus of woody perennials with evergreen coniferous leaves that have a very pleasant smell and aroma. Translated from the Latin name rosemary means "freshness of the sea". Rosemary is one of the plants known for its abundance of nutrients, phytonutrients, antioxidants and essential acids.

This popular herb is thought to have originated in the Mediterranean region, where it grows as a wild, scattered, perennial, evergreen shrub. This popular herb is thought to have originated in the Mediterranean region, where it grows as a wild, scattered, perennial, evergreen shrub. At home it can be stored in a pot.

DANDELION

Dandelion, milkweed or milkweed (Taraxacum) - a large genus of flowering plants of the family Asteraceae. Of these, common (T. officinale) and red-seeded dandelion (T. erythrospermum) are found as weeds all over the world. Like other members of the shield family, dandelions have a large number of very small flowers located in the inflorescence. Many species produce seeds asexually, ie without pollination.

The members of this genus are biennial or perennial herbaceous plants that grow in temperate areas. The leaves are 5–25 cm (or more) long, simple and entire or with petals. The inflorescences are yellow to orange, open during the day and closed at night. They stand on a hollow stalk that rises 1–10 cm (or more) above the leaves and secretes a rubber latex if broken. One plant can have several such stalks. When ripe, the inflorescences become spherical seed heads with a large number of single-seeded fruits called achenes. Each seed has a "parachute" with thin hairs (papus) that allows scattering over long distances with the help of the wind.

In gardening, dandelion is considered a beneficial weed with many uses and can be a good companion plant. Because their roots are deep, dandelions take nutrients from the lower layers and make them available to plants with shallower roots. They enrich the soil with minerals and nitrogen, attract insect pollinators and release ethylene which helps in fruit ripening.

Dandelion is a well-known honey plant in beekeeping.

LINDEN

Linden grows in temperate regions of the northern hemisphere. These are large deciduous trees with a height of 20-40 m and stalked heart-shaped leaves with a diameter of 6-20 cm. The exact number of species is unknown because they easily cross both in nature and when bred. All are bisexual (the flowers have both male and female parts) and are pollinated by insects.
In Macedonia, the small-leaved (T. cordata), large-leaved (T. platyphyllos) and silver-leaved linden (T. tomentosa) are autochthonous.
In urban areas, linden is popular in rows and because of the thick shade due to the density of the leaves. The flowers are fragrant and sticky with nectar. They are used to make herbal tea and inhalation liquid. In beekeeping, linden is known for its bright but rich honey.

ACACIA

Acacia (Robinia pseudoacacia) is a deciduous tree belonging to the genus Robinia. It can grow up to 25 meters with a diameter of 50 cm. Acacia is not picky about the terrain. It is found almost everywhere: it is good for afforestation, as a hedge, it is found in forests but also individual trees along the borders and meadows. It usually blooms in the first half of May but it can bloom later in the year as well. It is of great importance for beekeeping, although it requires warm nights and warm and quiet days, high humidity without wind.

ALMOND

Almond is a small tree whose fruit is also called almond. The plant is classified as a peach in the Amygdalus subclass of Prunus, which differs from other subspecies in its fruit. It is adapted to dry environments, so it does not need much rainfall.