Chapter 17 Framing Beekeeping, Environmental Change, and Adaptation in the Italian Alps. An Anthropological Perspective

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Abstract

This chapter wishes to delve into concepts such as assemblage (Tsing 2015) and sympoiesis (Haraway 2016; Tsing 2015) and examine them within the framework of my ethnographic fieldwork on beekeeping in the Western chain of the Italian Alps. I believe that the implications of notions such as sympoiesis and assemblage can be seen to surface in the context of bee-beekeeping and bee culture, as they emerge as multi-species activities where everything and everyone involved can be regarded as a social actor. In this respect, the most relevant issues I would like to tackle are referred to knowledge production and know-how among beekeepers who keep their apiaries in the plains for most part of the year and move them to mountain areas for the summer.

Keywords

bees; Alpine anthropology; sympoiesis; assemblages; humans/non humans.

Introduction

In this chapter I will take into account the connection between nomadic beekeepers¹ who work in the Italian Western Chain of the Alps and the adaptation of their knowledge system to climate change.

I began working in the Western Alpine Chain, specifically in Susa Valley in 2005, as a parallel research to the one I have carried out until 2019 in Eastern Siberia². Unlike my Siberian fieldwork, which mostly delved into the revival of shamanism after the collapse of the Soviet Union, my Alpine research at the very beginning focused on ritual and ceremonial practices in the Alps (Zola 2011, 2013); it then gradually shifted towards a more ecological approach to the study of the Alps. Since 2017, as a matter of fact, I have been analyzing the relationship between "new highlanders" and alternative ways of contrasting social and environmental marginality, such as beekeeping or growing ancient varieties of crops (Zola 2017a, 2017b). I am now at a stage of my research where my interests in Siberian indigenous cultures and those regarding the Alps share some common features. My last fieldwork in Siberia focused on the relationship between hunters and wolves in endangered areas, characterized by changing climate settings; my most recent research on the Alps examines the connections between beekeeping and a rapidly changing environment.

As a number of authors have highlighted, in fact, the Alps have undergone in the past 150-200 years significant changes that led to the creation of "new landscapes" (Tasser et al. 2024): the decrease of agricultural practices has favored the spread of forest in abandoned areas which, at its turn, has produced a decline of plant species. Another important factor which has had a strong effect on alpine environment is represented by an increase of the air temperature. As stated by Antonio Mingozzi et al. (2022), there have been strong climatic variations which have impacted on the ecosystem and its features but also on human settlements and activities. Warmer winters, hot summers, longer periods of drought, increase in wind intensity and other factors make Alpine landscape closer to a Southern environment.

In this respect, beekeeping and bee culture act as an assemblage of people and things, of human and non-human actors which trigger new ways of

¹ Nomadic beekeeping consists of moving the apiaries from one area to the other according to the variety of nectar plants so that bees can forage for a longer period. In my case study, the beekeepers I worked with transfer the hives from plain lands or hillside territories to mountainous ones during the summer. On the contrary, sedentary beekeeping involves settling the apiaries in a fixed place and leaving them there until the season is over, approximately between late October and November.

² I started carrying on fieldwork in Sakha-Yakutia, a Sovereign Republic within the Russian Federation in 2005. Unfortunately, since 2019 I was not able to get back to the area mostly for sanitary reasons and also for the current limits relating to the complex and unstable political situation.

facing climate changes, as landscape is increasingly understood like a practice and form of body politics (Krauß 2018; Olwig 2018), an assembly of entangled multispecies actors that comes into being. This resounds well with the issue of sympoiesis, as elaborated by Donna Haraway:

sympoiesis is a simple word; it means "making with." Nothing makes itself, nothing is really autopoietic or self-organizing [...] Sympoiesis is a word proper to complex, dynamic, responsive, situated, historical systems. It is a word for worlding-with, in company. Sympoiesis enfolds autopoiesis and generatively unfurls and extends it. (2016: 58)

The idea of sympoiesis, in its turn, echoes with the critical thoughts elaborated by Anna Tsing about independence and autonomy as unique forms of living of the human species:

One of the many limitations of this heritage is that it has directed us to imagine human species being, that is, the practices of being a species, as autonomously self-maintaining—and therefore constant across culture and history. The idea of human nature has been given over to social conservatives and sociobiologists, who use assumptions of human constancy and autonomy to endorse the most autocratic and militaristic ideologies. What if we imagined a human nature that shifted historically together with varied webs of interspecies dependence? Human nature is an interspecies relationship. (2012: 144)

The idea of sympoiesis also matches with the notion of assemblages: in this respect, Haraway (2016) speaks of linked metabolisms of humans and non-humans which are held together by sympoietic ties and relations. As Anna Tsing states, «assemblages are open-ended gatherings. They allow us to ask about communal effects without assuming them. They show us potential histories in the making» (2015: 23). Further on, Tsing compares the notion of assemblage to that of polyphony: if we frame it in a farming perspective, which draws us closer to the topic of this chapter, commercial agriculture has selected single crops and improved them in order to foster simultaneous ripening and coordinated harvests. However, crop selection has not been the only way of farming. If we imagine that multiple rhythms and other social actors such as pollinators, insects, microbes, and other plants can actively take part into farming, the notion of polyphonic assemblage unfolds as a gathering of different actors.

These two key concepts can prove to be very useful tools for anthropologists. On the one hand, as mentioned above, they appear to be the most recent outcomes of almost two decades of reasoning about the nature-culture divide; on the other, they can be adapted to European contexts. The "ontological turn" and its related debates, at the very beginning, mostly referred to extra-European areas. Nevertheless, in recent years, a growing body of works produced by scholars based in Western regions is gaining ground, thus showing the efforts which are being made to try to reconcile these theoretical insights with contexts where there is (at least apparently) neither shamanism, nor totemism, nor animism.

I believe that the implications of notions such as sympolesis and assemblage can be seen to surface in the context of bee culture, specifically in Alpine areas. In fact, beekeeping and bee culture emerge as multi-species activities where everything and everyone involved can be regarded as a social actor.

Non-Human Agents and Anthropology

Working with non-human subjects, broadly speaking, does not mean that, as anthropologists, we have to embrace and fully adopt the non-human actor's point of view. As Viveiros de Castro suggests, the question

is not one of knowing "how monkeys see the world" (Cheney and Seyfarth 1990), but what world is expressed through monkeys, of what world they *are* the point of view. I believe this is a lesson our own anthropology can learn. (2004: 11)

Therefore, it is not of primary importance to give voice to non-human actors and, thus, to understand how bees think, but to highlight what sort of world is represented through bees, what sort of connections, intersections and interspecies collaborations are on display. This also resounds with what Bruno Latour argues about dealing with non-human actors: he sees parallels between politicians who speak for other people and biologists who speak for non-humans (2004). Latour's model for bringing democracy to nature involves consensus building among human "spokespeople".

To this extent, the most relevant spokespeople for a better understanding of bee culture are beekeepers, recognized as "privileged ecological interlocutors", as a beekeeper whom I interviewed defined himself. Beekeepers can be of much help to anthropologists not only in terms of bee caring and beekeeping, but also regarding how we should look at bees and from what angle, how a set of skills and know-how that beekeepers hold can cope with rapid environmental change. Beekeepers not only are ecological interlocutors, but also have to become necessarily multispecies specialists.

The two latter issues where beekeeping is involved and which bear parallels with Alpine anthropology are firstly the question of nomadism, which in its turn recalls the practices of pasture and of herding, to such an extent that in some contexts, beekeeping is labelled as "flying herding"³. Finally, the second issue is connected to urban and Alpine settings, which is a common topic in Alpine anthropology. If, on the one hand, urban and Alpine dimensions have

³ The term "flying herd" is mentioned in a Mongolian NGO project which takes into account the interdependence between pastoralism and bee culture (Greenmongolia 2024).

often been opposed, on the other hand current research stresses the importance of continuity between these two settings which have to be considered in their dialogical dimension rather than in contrast one with the other.

My fieldwork, which goes on extensively since 2017 mostly in the Susa Valley, has taken into account nomadic beekeepers, such as those specialists who keep their apiaries in the plains or on the hillsides for most part of the year and move them to mountainous areas for the summer. The recurrent reference to the continuity between plain and mountain and between nomadic and sedentary beekeeping are well established topics in the beekeepers' talks, as shown by O.B., who lives in Soubras, a small village at a height of 1,480 meters in Susa Valley:

It is my business partner who keeps the bees in Avigliana⁴, we have been working together since 2008, when we embarked upon this project with bees [...] The thing is that it is hard to keep them here [in Soubras] all year round, so my business partner keeps them mainly in Avigliana, and they could well live in Avigliana 12 months long. Until three years ago, we did not even have to feed them, but then we decided to have a defined amount of permanent hives in Avigliana, which can be moved to other places according to the type of honey we want to harvest. For example, some hives are moved to Cascina Roseleto⁵ in order to have dandelion honey, some others come here at the beginning of June until the end of the month, when the blooming season is at its peak. However, it is all up to the weather conditions: some years at the beginning of June it is still cold and flowering stops abruptly, other times the blossoming is gorgeous but the flowers are empty, and bees cannot find any food [...] (OB 2022)⁶.

This beekeeper hints at a common problem her colleagues had to deal with in recent years, that is blossomings with no nectar. L.B., a beekeeper who works between Langhe and Roero, a hillside area of Southern Piedmont, has faced the same predicament: the contrast between an apparently rich flowering season and the lack of particular scents indicates an alarming situation. He claims:

It is a nice sunny spring day, temperatures are between 22 and 25 degrees, no wind, apparently there would be very good conditions for the bees to forage abundantly. However, if you keep an eye out, you will hear just a light buzz lost among other noises coming from the wood. If you smell the air, the acacia flowers' scent, which is normally pervasive, is only slightly perceivable. So there is a

⁴ Avigliana is a small town in the lower Valley of Susa. It is surrounded by mountains and hills, and also features two lakes of volcanic origin. It is an area with considerably mild climate conditions.

⁵ Cascina Roseleto is a farmstead in Villastellone, near Torino, whose owners since 2009 have started to practice sustainable and extensive livestock management in order to produce *Latte nobile* (noble milk), that is milk obtained from livestock grazing in specific areas where forage crops are abundant. The case study of Cascina Roseleto is an example of how sympoiesis works, as the grass growing in these areas can be useful both for the cows and for the bees.

⁶ All the translations from Italian are my own.

sort of contrast between the flowering, which seems to be so rich, and the lack of specific scents. (LB 2022)

Beekeepers themselves cannot find an explanation to this: by observing the facts and figures of the last ten years of climate conditions, at least in Piedmont, if compared to the previous decade there has been a sequence of springs which have been colder and windier, sometimes characterized by late frosts. In a word: illusory springs with warmer temperatures and then abrupt cold snaps.

This could be one of the reasons for the lack of pollen, hence showing that, in changing situations, the "hands-on" empirical knowledge beekeepers hold, sometimes is not enough.

Adaptations and Environmental Change

The need of adapting their know-how and skills to rapidly changing environmental circumstances is a common topic among the beekeepers I interviewed. A summer season like the one we experienced in 2022 has shown that they have had to adapt to dry climatic conditions and flows of unusual heat, fostering new ways of interacting with bees, for instance, feeding them. Supplying bees with a replacement nectar, called syrup, a mixture of water and sugar, is no new practice, however 40 or 50 years ago feeding the bees was out of the question. Providing them with extra water is another way of facing a climatic challenge: sometimes the beekeepers position the hives very close to water sources, such as springs, small rivers, permanent wetlands or fountains, especially in extremely dry years. Another practice that emerges as a direct consequence of environmental changes is represented by "hive stocking", that is creating a hive stock ready to be moved in case of need, as again witnessed by O.B.:

Once, in beekeeping, the timing was good: the first to blossom was the acacia, then came the chestnut tree, but now what happens is that chestnut trees will start blooming a week after the acacias, while your bees are busy [...] How can you cope with it? Luckily enough, this year we had ten extra hives that were ready to be moved according to different flowerings. This is a new way of thinking, which implies planning your moves well ahead and be ready to take action at any time. This also implies that the hives are less productive than they used to be, because with a good timing you could have all your hives forage the same flowers, whereas now they scatter to forage different flowers simultaneously. (OB 2022)

The issue of new sorts of know-how and skills is inextricably linked to that of interspecies collaboration, where humans and bees are just a part of a complex network of actors, but not the only ones: bees' health, together with the health of other wild pollinators, is contingent upon the health of the plants and flowers they forage, which, in its turn, depends on the physiology and composition of the soil. All this creates an interspecies assemblage of human and non-human actors who work together, and therefore the role of ecological informants held by the beekeepers comes to light too.

Langhe and Roero, a hillside area of Piedmont where L.B. has his apiary, is well known for its wine production, in particular of the renowned Barolo and Barbaresco brands. These areas bear the mark of an intense human effort towards monoculture, which wrested away their due space from the woodlands, and featured an extensive use of impressive amounts of herbicides to free the vineyards of parasites.

Some wine producers, however, have stopped to practice weeding between the vine lines and have started to grow green manure crops such as clover, lupins, phacelia. Green manure implies leaving uprooted or sown crop parts to wither on a field so that they serve as a mulch and soil amendment. It is commonly associated with organic farming and can play an important role in sustainable annual cropping systems.

This practice is also encouraged both by recent viticulture manuals and by a number of guidelines issued by Regione Piemonte. The Guidelines for Integrated Agriculture issued by Regione Piemonte report that

it is strongly recommended to plant and grow green manure. It has beneficial effects on the roots of the plants and crops, as it allows the roots to grow deeper into the soil to assist with aeration and breaking up heavy soils such as clay. However, they also offer similar benefits in the summer months, with the leafy foliage acting as a defense against the drying effects of sun and wind. (RP 2022: 7)

A viticulture manual, instead, states that «in order to foster the fertility of the soil and to provide it with organic matter and mineral elements, it is recommended to sow green manure mixtures of legume forage crops» (Bottura 2011: 128).

The forage crops in the vineyards help maintain the soil moist and, thanks to the synergic cooperation between microorganisms living in the ground and the vines, the organoleptic properties of the wine resulting from the enriched soil have improved considerably. Once again, an example of sympoiesis, where contamination ends up being also a form of cooperation, as Anna Tsing (2015) would state.

Some relatives of L.B.'s own some hectares where they grow vines. He reports that, since they started to reintroduce green manure crops, specifically lupins and clover, the wine they produce has gained «flavors and scents that they could not recall tasting and smelling before» (LB 2022). Some green manure crops, when allowed to flower, provide forage for pollinating insects too, and habitat for beneficial predatory insects, which allow for a reduction of insecticides where clover crops are planted. The predatory insects, just like the pollinators, need pollen and nectar in order to feed themselves. Consequently, also the most recent guidelines for viticulture suggest to introduce flourishing plants in the vineyard; they also recommend for vines to be planted close to small woods and fences, the so called hallways of connection (Alberoni, Bosco, and Ercole 2021; Zola 2021).

Plants, microorganisms of the rhizosphere and pollinators are thus considered a biological unity, an assemblage which grows, reproduces and evolves conjointly.

Another example of interspecies cooperation, back to Alpine areas, is represented by the case study of Soubras, where different social actors, both human and non-human interact: soil, plants, animals, and humans.

Since we started bringing the bees here a month a year from Avigliana, the fields where the bee hives lay have totally changed. Everything seems to have strengthened, and long disappeared plants such as clover, vetch, pheasant's eye, wild carnation, plantain [*plantago lanceolata*] and wild sage are growing again. The amount and the variety of species in the fields has increased, and the grass itself looks thicker. This has also impacted on the quality of the hay we harvest every year. Last summer, in spite of the dry weather, we did not have a significant decrease in hay production: instead of 500 hay bales we managed to have 470. This means that everything that grows in these fields grows mainly thanks to our bees. Both our bees and the meadows have adapted to harsh climatic conditions: last summer it was so dry that some varieties have inevitably dried out; however, there were other species ready to grow, balancing the lack of some species in favor of others.

The thing is that, before placing our apiary here, there were less flowers and more "grass", but since the bees have started to forage, flowers bloom more frequently and grow in number the following year.

Another good thing about bringing the bees here and having a flowering field is that we harvest and sell hay, but in recent years we faced some problems because of the price of hay. Ours is generally more expensive because it is harvested at high altitudes, but luckily enough a young man from Vazon [the upper village] has started to breed two cows and a veal, and next year he will have seven. We agreed that he will come and cut our hay and will use it for his cows. For us this has a twofold advantage: the fields are mown and the hay will go to Vazon. (OB 2022)

From a beekeeper's perspective, quite surprisingly, this sympoietic aspect took place in 2022 too. For many farmers it has been a terrible year in terms of crops, of lack of water and rains. The few rains of autumn 2021 were followed by only one snowfall in December, then almost no rain until March-beginning of April, when rain was more frequent but not enough to limit the damage of a dry period. These were the premises of a disastrous season, for if the spring was warmer than average, it was followed by an even hotter summer. Considered the particularly negative farming and agricultural season, everyone would have expected similar results for beekeeping as well. On the contrary, the year 2022 has been surprisingly good, as L.B. reports: For the past ten years, we have had an unusual warm weather already in February, then temperatures would drop again abruptly, and it is not uncommon to have frosts in April or even at the beginning of May. This affected the whole flowering system, which did not have time to complete its cycle. This year, instead, we have had cold weather on 10th March and the plants still had to grow. When temperatures began to lift, the first to grow was grass, followed by leaves, whereas last year the leaves grew first, so the grass and underwood had not enough light to grow. The end of winter 2022 and the beginning of spring have followed a more "natural" cycle: rain in autumn, the one snowfall in December, December temperatures quite warm. When the weather has started to be very dry, luckily enough the grass favored the soil's thermoregulation and it also preserved the small amount of water that had been absorbed, helping the flowers at the same time. I am also referring to the role played by plants blossoming after the cherry tree and before acacia. (LB 2022)

According to his words, then, there would be a close relation between some environmental variabilities and pollen production. This would also mean that climatic upheavals could in fact impact on the reproductive and adaptation abilities of plants. In spite of the lack of rain, the year 2022 favored the ideal conditions for grass growing and the soil, as a consequence, has retained the ideal amount of water according to its needs, sustaining itself and also favoring the survival of microorganisms and of plants.

Concluding remarks

The summer 2022 with its unpredictable consequences both in farming and in beekeeping contexts, together with climatic variations over the last 10-15 years, has had a strong impact on those activities which rely on a body of empirical and "hands-on" sort of knowledge. Skills and know-how relating to bee culture are rapidly evolving and adapting to the circumstances. To this extent, they could be labelled as volatile as, just like bees, they need to swarm and form a new body of knowledge which keeps changing. This situation is not limited to Alpine areas. However, I chose to take into account beekeeping in mountain contexts because, by virtue of their position as innovation sites rather than barriers, I understand Alpine areas as privileged grounds for observing and assessing new ways of engaging with a specific environment (the Alps). Finally, as anthropologists, we need to acknowledge that carrying on research on human and non-human actors in upland contexts, thus adopting a multispecies perspective, is in fact opening new paths for exploring the multiple ways of bee-coming.

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