Chapter 6
Topocentric Views of Nature

Abstract Drawing from different secular traditions of India, such as the Ayurvedic health traditions and Sangam literature, geographical description and land ethic practices from South India, this chapter describes place-centric views of landscape which look at nature as a habitat for human beings. While one tradition relies on typology of the human body and its relationship to geography and climate, another poetic tradition from South India utilises topocentric categories called *tiṇai*. Earlier work by scholars in these areas is summarised with appropriate annotation and analysis that links these ideas to the topocentric view of nature.

Keywords *Tiṇai* · Nature as habitat · Topocentric view · *Āranya* · Forest · *Āyurveda* · Wetland · Dryland · Jaina geography

6.1 Introduction

If one was to close one's eyes and try and visually imagine nature, what pictures would form in one's mind? It is most likely that the picture would be of some scene of a landscape, maybe of mountains or rivers or forests. Given that the modern usage of the terms nature, landscape, and scenery are similar, it is also important to study some ideas of landscapes in other textual traditions in India. Brunn and Kalland (1995, p. 10) suggest that the interpretations of environmental issues are anthropocentric in the sense that human beings subjectively seek order in the universe through the conceptualisation of nature as landscape: "We differentiate nature by means of accurate definitions, classes and systems, including shapes and colours but, attribute to it meanings and emotions turning the environment into landscapes".

Though landscape is a constructed category, still it has come to represent nature for us in many ways. Baindur (2010c) suggests:

> From a phenomenological perspective, one could conceptualise nature based on the analysis of the human experience of the world, understanding it as a discourse, and not as

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> mere physical reality. Such an interpretation would explore the way in which one makes sense of the phenomena of the surrounding world and the ways in which a human being is understood to be intertwined in nature.

One might argue that these views do not strictly fall under the philosophical understanding of nature, but given the history of Western thought, it is clear that the Romantic Movement's perception of nature challenged the mechanistic concept of nature. These gave rise to some of the very important debates around the relationship of human beings to nature. It is within the same theme that I seek to understand the categories of landscape features that for the human imagination, are the closest way to identify nature.

There are alternate ways to look at the cultural links between geographical categories and nature. Unlike the geographies of sacred landscape that greatly rely on religious mythology and traditions (to be discussed separately in Chap. 7 of this book), these conceptualisations are closer to our modern understanding of nature as landscape. We will engage with some of the topocentric views of nature from two very different traditions of thought that are not based on philosophical sources and are connected to two non-religious traditions of thought: medicine and geographical literature. The first is a summary of a topocentric view of Āyurvedic categories. The book, *Jungle and the Aroma of Meats,* by Zimmerman (1999) is a good starting point to explore this area of medicine-based topography. This will be followed by an explanation of some categories that are equivalent to wilderness and human settlements, and the relations between forests and people in India where one can bring together ideas from historians and environmentalists. The second topocentric view is from the concepts of Tamil literary traditions that combine topos (landscape) and human dispositions through a unique category of landscape descriptors called *tiṇai*. Though scholars would prefer to treat this as a literature project, more suitable to eco-criticism themes, I prefer to classify *tiṇai* under a topocentric theme. The attempts to link landscape and human emotion are to be found in almost all kinds of poetry and composition, but the analysis and acceptance of this as a literary theory in the poetics has been prevalent much earlier than the discipline of eco-criticism itself that comes to us from the West. In a later chapter, I will use the methods of eco-criticism to analyse other pre-modern Sanskrit literature. The sensibilities of Tamil literature are also different from the rather direct references to nature in other compositions. We will briefly examine the idea of Jaina geography through one of their classical texts. To add to these rich interpretations of landscape, a history of the Bishnoi people's relationship to their land will be described.

6.2 On a Topocentric Ecology and Health Traditions

Callicot (1987) points out that there was a popular view of Eastern thought in the West and many people who read and studied some of the Eastern philosophies had a profound impact on certain sections of Western thinkers. This in turn led to the

development of a very general and popular view of all Eastern philosophy which he rejects as the "shallow view of Eastern thought". He points out that, conceptual resources for environmental ethics in Eastern traditions of thought require further research: "… there is an opportunity for students of Eastern thought to contribute in a most welcome and important way to the literature of environmental ethics" (p. 47).

Brennan (2002) contests Callicott's position and argues that in the general survey of ecological thought among Hindu traditions, particularly *Āyurveda*, one of the traditional systems of medicine in India has been ignored. And he claims that in this system of medicine is embedded an ecological understanding that is related to the people's life within an environment. This is reflected in the texts that describe the interrelationship between people and places. He explains:

> The quality of a place that emerges seems to be predominantly anthropocentric: an ecology of agriculture cooking and pharmacy, not in an ecology of interacting systems defined without a reference to human meanings and practices. It is a profoundly human ecology, in other words, yet one which sees the world in terms of processes linking different individuals in populations (within and across species)—for example, the processes of concentrating essences through feeding (Brennan 2002, p. 574).

In his paper, he concludes that it was important to pay attention to the "place-centric topographical medicine". He writes: "It is this crucial move, the 'topo-centric' focus of the theories which provides a kind of ecological understanding of the human subject, of the subject in relation to the surrounding world and that of the world itself" (p. 580).

He strongly argues that to dismiss this view of ecological health as anti-environmental is unjustified and that a conclusion based on traditional conceptions of body and place is inconsistent with modern understanding would be a hasty decision, because scientific understandings may not be the only legitimate interpretations of the world around us.

Brennan (2002) therefore recommends a study of the way *Āyurveda* interprets the surrounding and its relationship to the human being from an ecological perspective. He further adds that the system of medicine is closely intertwined with agricultural, seasonal, and food practices; hence, it has implications for ecological health, the valuing, and managing of nature, as well as for biodiversity. An interesting view of landscape in Indian thought comes from the tradition of *Āyurveda* as described by Zimmermann (1999). It gives us (something) to understand how the idea of the jungle and topocentric views seems to be inclusive of the human beings in an essential way. In his book (that Brennan refers to), he uses the perspective of *Āyurveda* to understand some topocentric views in Indian thought. The categorisation of landscape as wet (*ānūpa*) and dry (*jāṅgala*) and the relationship of human–Ayurvedic body types to these landscapes are discussed in detail. Zimmermann suggests a whole new perspective to the study of classical Indian medicine. In the foreword to the book, Wujastyk (1999, p. xv) remarks that this work brings into the field a whole new creative and "interpretative sophistication" to the field of medical ethnosciences. Zimmermann highlights the unique relationship between human beings and their habitats within the context of health and environment. Some of the

main concepts in this book are firstly, the idea of *cara*, the human interaction within food and environment. Secondly, the interconnection between the human body type and the land typology is linked to the presupposition that the microcosm and the macrocosm are often reflections of each other. Earlier traditions of Indian thought also perceive creation as a cosmic person and the human being as the universe. These kinds of presuppositions could also be interpreted as symbolic rather than actual. One could say that such traditions perceived the universe through a person-centric framework. The common ground of experience between creation as nature and the human subject is the functional body of the individual.

In later Āyurvedic texts, one finds that an interpretation is not so much about the similarity of the body of nature and the body of the human being, but the relationship between the two based on compatibility and non-compatibility.

The human body in Āyurveda is seen as a balance of body constituents (*doṣa*) called *vāta, pitta*, and *kapha*. When they are in balance, they create combinatory body constitution of most individuals that have two predominant constituents such as *vāta–pitta* or *vāta–kapha.* Imbalance of these constituents by agitation of any of these three *vāta, pitta*, and *kapha* causes illness. The *doṣa*s are activated beyond normal differently during different times of the day, during different seasons, during different stages of one's lifespan, or during times of mental or physical afflictions. The internal environment given by constitution of these interacts with the external environment given by the wet, dry, and middling landscape, producing effects of either adaptation called *sāmyatā*—harmonious state—or a state of agitation, of the *doṣa*s.

The similarity of human body types *vāta, pitta*, and *kapha* to a classification of topology and landscape as (windy) dry, middling, and wet, described in āyurvedic texts, is about relating the inside to the outside. Zimmerman's study linking these types to the actual geography of India as wetlands—*ānūpa* and dry lands—*jāṅgala* indicates that the medicinal system of Āyurveda may have laid emphasis on the interactions between human health and nature at a much deeper level than is popularly known today. While lifestyle is often stressed in today's prescriptions of Āyurveda, Zimmerman's work seems to suggest the linkages between food, body type, and propensity for illnesses and the geographical landscapes. The aetiology of the system can be critiqued in the light of modern developments of both *Āyurveda* and medical sciences, but it is clear that the conceptualisation of the climate in the natural landscape as similar to the climate (body type) landscape of the human bodies is an important ecological theme. While *jāṅgala,* or the dry and windy lands, are good for habitation, it is likely that a person with a *vāta* complaint will find the wet locale more suitable. Zimmerman (1999, p. 21) demonstrates that in *Āyurveda*, nature and the human being are linked through interactive relationships of geographical inhabitation. To inhabit is to create ways of routine adaptive behaviour to the environment which is captured by a Sanskrit word, *cara*. In some sense, geographical understanding of nature as place is categorised by a human perspective of health and well-being, in other words a sort of biological category of habitat. On the other hand, this understanding is not merely about landscape but also about the various roles and functions of human beings—their food, their activities, their life cycles, and their interaction with the landscape.

Zimmermann (1999) places importance on the human interaction with the environment through the concept of *cara*. He remarks:

> *Cara* is perfect example of a word with a double reference: to nature and to man. The objective or spatial reference—the environment—is incorporated within the subjective or practical reference—the environment regarded as a source of the means of subsistence (p. 21).

The word *cara* in Sanskrit refers to moving or roaming. It also refers to behaviour and eating. Based on a presupposition that one absorbs the essences of the soil called *rasa* through food, it is often concluded in many texts that a human being is subject to influences of the environment and habitat of the origins of food that is consumed. Traditionally too, we find in popular beliefs in practice that rice from the lowlands and from the dry lands are supposed to have different qualities. Drawing from Zimmermann's arguments, one could say that there is another way that the environment affects human beings internally. The essence (*rasa*) of the soil gets absorbed into the body of the eaters through the plants and the flesh of animals. Food, thus, becomes threefold in its function. Primarily it nourishes the body in a homologous sense. Fluids augment fluids of the body and so on. This is the general feature of the nutrients drawn from food. As a prescription, the same food that contains the essence of the soil becomes medicine in a particular quantity and form. Yet again the same food becomes poisonous when the quality and quantity is not right or when the time and season of consumption is disharmonious.

Diet, food, and activities are thus prescribed according to seasons and the time of the day based on a concept called *ṛtucarya—cara* according to seasons. Repetitive seasonal practices and routine include various prescriptions of different types of food to be cooked and eaten based on one's activity, gender, and also age. While Ayurvedic prescriptions are based on classical texts, the practice of *ṛtucarya* is more traditionally practiced at community and household levels. Texts on *ṛtucarya* do contain guidelines and are non-classical in the sense that they do contain reference to non-vegetarian and local diets. This suggests that these texts were not ritual based or limited to study by the elite castes. It must also be pointed that the seasonal practices related to land and food were implemented at the household level by the couple, the woman usually keeping track of *ṛtu* (seasons) using the festival days to mark seasonal changes in diet and seasonal practices. I recollect my grandmother announcing that we had to pack away our warm clothes after the festival *Śivarātri* (a festival for the god Śiva) in February–March, after which the skin had to be gently exposed to the warming influence of the sun to acclimatise us to the oncoming spring and summer. There may not be an authoritative reference to this kind of prescriptions, but they do exist among womenfolk and among many traditional communities. They establish a strong tradition of topocentric and season-centric relationship to the environment. Zimmermann's interpretation of the Ayurvedic sciences as embedded in the geography of wet and dry lands gives us an understanding of nature as a habitat that is implicit in a medicinal tradition.

6.3 The Geography of the Forest

The forest, or the *araṇya*, is one of the geographical categories of landscape that is popular in almost all kinds of literature including mythologies and epics. As a habitat, the forest is the dwelling place of the non-human. Besides the wild animals (*mṛga*), the forest is also home to ghosts and ghouls, to forest spirits and water nymphs. While one can, for purposes of empirical validity, ignore references to these mythical beings, it is possible to infer from these textual references that forests are not forbidden for human entry but they certainly are not the normal dwelling places of human beings. In a verse in *RgVeda* (*RV* X.46, trans. Panikkar 2001), "*Araṇyānī*" (wife of the forest), the poet of the *Veda*, addresses the spirit of wilderness or the goddess of the forest. One of the earliest references to the idea of a nature perceived as wilderness versus a culture that is seen a habitation of the villager can be seen in this verse. The comparison between the settlement and the uninhabited forest is clearly marked out in the many images of this poem: "… how is it you avoid people's dwellings?" and further: "She needs not to toil for her food, mother of untamed forest beasts". The idea of the polarity between *āraṇya* and *grāmya* is well described by scholars of history such as Zimmerman (1999, p. 101): "Throughout Sanskrit literature *grāmya* (domesticated) is opposed to *āraṇya* (wild/belonging to the forest)". Thapar (2012) also points out that "the dichotomy between the *vana* and the *grāma* evolved in early time when the village constituted the settlement". The idea of the *āranya,* however, is different from the category of a pristine nature. A continuous interaction of human beings with the forest is not unusual. As illustrated in the verse, again we see woodcutters and the cowherd moving through the forest landscape (*RV* X.46, trans. Panikkar 2001) and the benevolent forest offering up her delicious fruits for consumption when approached with non-violence. The terms *āraṇya* and *grāmya* are dichotomous and inclusive "and perceptions accompanying it were neither static nor uniform" (Thapar 2012, p. 106). She claims that these terms capture for us the symbolic value of the landscape. I suggest here that the binary of the *āraṇya* and *grāmya* ignores the interspaces of topography that are referred to in texts and common usage. Notions of the idea of wilderness conceptually influence the modern perception of *āraṇya* as a place for the non-human.

In a short project that I conducted on concepts of landscape in a small village close to Bangalore, villagers were interviewed about their categorisation of land. Out of this survey, category distinctions were made by these 20-odd villagers between arable land (farms), pasture land, village, and the market (the city was a market). The interspaces between a forest and a settlement are occupied by a series of changing topos, not only divided spatially but also temporally. These interspaces become the places where the human and the non-human encounter each other. Each of these places can be adjacent to or even enclosed by another functional type of landscape. The landscape type is also connected to the available water source and natural resources that are present in the place.

On the other hand, if we look at the concept of *āraṇya*, *vana*, and other cultural terms describing landscape, they are used in specific functional contexts in literature.

We find that they are not used so synonymously. An *āraṇya* is a deep, dark forest almost equivalent to wilderness. Humans do not dwell here, unless they are sages. Rāma kills the wicked demoness Tātakā in *Daṇḍakāranya*. The *vana*, on the other hand, usually denotes a less dense category, often like a grove of trees. The *vana* is the forest for exile, the "out of settlement" region; exile is called *vanavāsa*. Sacred groves are also designated as *divyavana*. The edges of a forest that are close to the settlements were called *upavana*. The *āśrama* in the forest is a human settlement within a forest as much as an *upavana* is a wooded area within a settlement. When the rural *grāmya* becomes the town, *nagara,* the wooded area is included within the human settlement, as *udyānavana.*

Many of the Upaniṣads were themselves created in the *āraṇya*, sometimes called *āranyaka.* The forest thus had its mystical influence on the path of liberation through a symbolic act of leaving the *grāmya* (village) for the *āranya* (forest). Thapar (2012, p. 112) suggests that this act emphasises the solitary journey of an individual for purposes of asceticism and has many interpretations such as "… distancing from civilization, seeking of knowledge through isolation and meditation; and a search for the meaning of life through experiencing the unknown". Since the social obligations were reduced, there were fewer intrusions into the practices of the aspirant who wished to be liberated from rebirth (Thapar 2012, p. 112). The very context of the forest then forms a backdrop to the creation of ideas that were inspired by the solitude and wilderness—the Upaniṣads.

6.4 *Tiṇai*: Landscape and Poetry

Tiṇai refers to the bio-geographical regions mentioned in the *Caṅkam* Tamil poetry works. These are categories of natural regions that are described in detail in the *Tolkāppiyam*, a grammatical work of much importance on the poetry and grammar of *Caṅkam* literature (Sivathamby 1974). The literary and cultural movement during the *Caṅkam* period in the south of India gave rise to a number of poetical works which were based on compositions created during three assemblies held in the town of Madurai, the capital of the *Pandya* kings (Murugan 2008). These works form a significant landmark in the classical literature of the Tamil people. The culture and language of the original inhabitants of the south of India is referred to as Dravidian as against the Aryan culture that was predominant in the north. The Dravidian culture was based on a classical form of Tamil, one of the few languages in India that is not Sanskrit based. Zvelebil (1992) dates the period of composition of these works from 200 BC to 200 AD. The literature of this era spans a rich tradition of poetry and commentary including the *Tolkāppiyam* (henceforth, *TKP*), a grammatical work on these poems composed by the author referred to as *Tolkāppiyanar*.

Scholars who work on *Caṅkam* literature use the term called *turai* to describe to the literary categories that refer to "context" or the twofold classification of poetry called *agam* and *puram*. While *agam* poetry deals with themes related to family and

love, *puram* deals with affairs of court, military conquests, and heroes. Zvelebil (1992) refers to this classification thus: "In classical Tamil Poetry—in its *pre-bhakti*, *pre-Pallava* age—a self-conscious, indigenous Tamil culture is depicted in its two principle forms, the interior (lyrical *agam* hyper genre) and the exterior (lyrical *puram* hyper genre)". Of the two, it is the *tiṇai* of the *agam* poetry that conceptualises nature in its complexity, intertwined with the human beings and their activities. The poetry besides describing nature has a deeper layer of meaning.

There are seven *tiṇai*s in the *agam* context, each representing the poetical mood of love. Five of these can be said to be "natural" relationships having physiographical content or natural "well-matched" love situations, and they are named after a plant endemic to that region. Two categories of *tiṇai*s describe "unnatural" moods of love, *peruntiṇai,* and *kaikilai,* which were in contrast "ill-matched". Gurukkal (2010) calls these categories as "ecotypes" or geographical descriptions of place. He analyses the eco-semiotic view of *tiṇai* in the context of Tamil poetry. He points out that the *tiṇai* are ecological signs and have a metonymic structure. These signs, according to him, have evolved from the ecosystems and attained what he refers to as "… cultural signification through linguistic and aesthetic practices of peoples adapted to these different ecosystems…" (p. 78).

Sivathamby (1974, p. 25) on the other hand, explains that the five *tiṇais* were contemporary physical realities[1]. He also argues that the physiographic division of the Tamil landscape is actually four in number, excluding the *pālai* (desert), indicated by the fact that the Tamil landscape is often called *nānnilam* (land that has four types). With evidence from literature, he demonstrates that the desert landscape *pālai* arises from the other four *tiṇais* during particular seasons or during drought. He then suggests the five "landscapes," (*tiṇais*) into which space is organised, that correspond to the major ecotypes (*nilam*) of the Tamil region. These are (from Selvomony 2008, p. 25–26):

1. Hill, *Kuṟiñci* (*Phelophyllum kunthaianum*), named after a flower predominant in hilly tracts.
2. Field, *marudam* (*Terminalia* sp.), which grows where the soil is alluvial with ponds, water buffalo, water birds, and fish.
3. Pasture, *mullai* (*Jasminium* sp.), named after a type of jasmine flower.
4. Seashore, *neytal* (*Nymphaea* sp.), after a water lily which is a characteristic flower of the region.
5. Wasteland, *pālai*: desert land, arid region with the shrub *Wrightia tinctoria.*

Before describing these landscapes in detail, it is important to also examine the classification of the components of *tiṇai.* According to the classical analysis of *Caṅkam* poetry, *tiṇai* is co-constituted by three elements (Takahashi 1995; Dubyanski 2010). The classical commentary *Tolkappiyam Porulatikaram*

[1]Sivathamby (1974), in his paper on the social origins of *tiṇai* concept, also points out the historical, cultural, and social significance of these categories. He attempts to examine uneven patterns of development and social organisation and analyses them.

(*On Tolkappiyam,* hence forth *TP*), describesthat *tiṇai* is co-constituted by three elements—(1) primary or (*mutal*), which consists of basic things such as tract of land (*nilam*) and time (*poḻutu*), (2) germinal elements or things that are born (*Karu*) consisting of things that grow or that transform in the environment such as god, food, beast, flower, bird, occupation, tree, drum, and musical instrument, and (3) the specific *(uri)*: feelings, behaviour, and situation (Takahashi 1995). Each *tiṇai* is related to geographical elements, a season, a time of the day, occupations, and the moods of human beings in relationships with each other (Baindur 2010c). What is interesting about this conceptualisation of nature is that it includes the human being within its fold and is described as a poetic background of nature for human activity.

For example, in the poem representative of the seashore, *neytal tiṇai* (extract from Kuruntokai 325, trans. quoted from Selby 2008, pp. 21–22):

> What she said:
> …
> O Mother,
> our master who supports us—
> where is he now, I wonder?
> The place between my breasts
> has filled up with tears,
> has become a deep pond
> where a black-legged
> white heron feeds.

We find that the sea is represented by the salty tears of the heroine. The pond and marsh all reflect the mood of lament of a lover's absence. According to Selby (2008), the very body of the heroine becomes the landscape, each reflecting the situation of the other. While the mistrust of the heron is similar to her lover, she herself feels as if she has been the fish. Tuan (1974, p. 93) describes the relationship between landscape and human beings as "topophilia". According to him, this word describes "all the affective ties of a human being with the environment". It is only natural that the aesthetic response of the *Caṅkam* age to nature should find their expression in poetical aesthetics. Moreover, it is clear such a conceptualisation of nature that includes the human being can be attempted only through the medium of a language and through categories of interpretation that express this relationship in all its complexity, that is poetry (Baindur 2010c).

6.5 *Tiṇai* as Nature-Place or Nature-Landscape

Are the *tiṇai* mere literary categories or are they related to the real landscapes? If they were mere poetic categories, then the imagination of *tiṇai* as nature is limited only to literature and its engagements and would not be as relevant for the cause of ecological thinking. I posit that the *tiṇai* describes the metaphysics of nature as inclusive of the human.

Dubyanski (2010) points out that in *TKP*, the author refers to the five regions that are called "parts of the earth" (Sutra III, 5; 951 in V. Murugan's edition, quoted by Dubyanski 2010):

> The world of forests where *māyoṇ* (Naryana) dwells,
> The world of dark mountains where the Red-one (Murugan) dwells,
> The world of sweet waters where *Indra* dwells,
> The world of spacious sea sands where *Varuna* dwells.

He also suggests that according to *TKP,* there is a definite correspondence between human situations and natural background. Three poetical themes that do not correspond to the actual geography are excluded in this description—*pālai:* desert land (as a degraded state of other types) and the two ill-matched *peruntiṇai,* and *kaikilai*. This could create an objection to the argument that *tiṇai* are mere poetical categories that have no significance to the natural world. Selby (2008) explains that while *tiṇai* is the artistic space in poetry, it is based on actual ecotypes called *nilam*. However, this seems to be based on the conceptualisation of nature as non-human. Even if we consider non-human components of *tiṇai, nilam* or land is only one constituent of "place"; the other constituent *karu*, which includes flora and fauna, is equally a part of the natural world.

Perhaps one could suggest that though *tiṇai* is a conceptualisation of nature in poetry, it is still based on real geographical elements of human experience. We cannot, however, relate direct abstract categories of meaning-making in poetry to the phenomenon of experience. However, given that *tiṇai*s are named after ecosystem signifiers, it is possible to understand it as poetry being derived from geographical experience.

Murugan (2008, p. 11) also emphasises the deeper connection between the natural and the human by pointing out the intertwining of these elements in the complex of *tiṇai*. He writes:

> For here, nature is not conceived as simply a backdrop to the human drama as is the case with most poetry of the world. It is not even a mere evocative background to the play of human emotions and deeds. The rhythms of human life and those of nature are made to correspond, coexist, and coalesce in these poems.

The conceptualisation of *tiṇai* entails a deep connection of the land and its belonging. Belongingness expresses as belonging to a place, where the sense is given by natural landscape (Baindur 2010c). According to Tuan (1974, p. 132), early civilisations historically show the transformation of the idea of a cosmos into landscape. He calls this "axial transformation". Landscapes according to Tuan (1974, p. 141), served the purpose of being "the background for commonplace human activities". He posits that the world of the pre-modern man was rich in symbols and metaphors, which evoked emotional responses to nature that was multi-layered and ambiguous.

Andrew and Duncan (1989, quoted from Anderson 2010, p. 39) describe place as constitutive of three parts: location, locale, and sense of place. I suggest here that location indicates an objective point in space represented by a grid or axis of reference, locale describes the background of natural, social, and built environment that makes

every day human experiences possible. It is often the feel and ethos of a place. The third part of place is the "sense of place" and it relates to the affective component of human beings and space. Comparatively, it seems that the three elements of *mutal* (time and place) are similar to "location", while *karu* given by the elements describes a sense of the "locale", and finally, *uri* is the specific situation representative of the "sense of place". In fact, it is the human emotion that finally designates the *tiṇai,* explains Selby (2008):

> In fact, the *Tolkāppiyam* stresses that emotion (or mood) is the only thing within a *tinai* that is actually fixed, a rather difficult concept to grasp, but crucial to the understanding of this system. *Akattiṇaiyiyal* verse 13 states: "The things that are not behavioral elements may overlap," meaning that everything except for the behavioral elements may (p. 25).

6.6 Jaina Geography

The Jaina texts are very descriptive of the geography of landscape or the middle worlds that human beings inhabit with all other kinds of beings. These are also somewhat secular descriptions of landscapes of the great continent called *Jambhūdvīpa* (island of the rose apple/Indian blackberry tree) which are highly imaginative. These descriptions are not story narratives like sacred landscapes stories of sites of Hindu pilgrimage centres. In that sense, these descriptions are secular. But in another sense, these narratives form a part of the soteriological concerns of the philosophy—the idea of *karma* and liberation for the Jaina thinkers. This cosmic geography is described in some of the primary texts like the *Jainā-gama*s and also in smaller texts like the *Jambhūdvīpasaṃgrahaṇī* (henceforth, *JDSH*) of Haribadra Suri composed in *Mahārāṣṭri*[2]. The elements of the human and non-human world are organised into geography and cosmography through detailed description of directions, sizes, and areas of the cosmos. Pániker (2010) writes that the geographical concerns of Jaina*s* were connected to their requirement to categorise the various beings of their cosmos in their designated habitat worlds: "The description of the physical geography of *Jambhūdvīpa*, as detailed as it may appear in the text and illustrations, is not the most relevant consideration, what is fundamental, let us stress again is the moral and soteriological geography" (p. 42).

According to the Jaina texts, only two and a half spheres of the seven continents on *Jambhūdvīpa* are subject to moral degradation and the effects of *karma* and its fruits (p. 42). The rest of the cosmos remains constant in virtue, body size, climate, or vegetation. The part of the cosmos that undergoes change and the suffering of *karma* is called *karmabhūmi*:

[2]A form of Prakrit. The version referred to for this book is with commentary in Sanskrit by Prabhananda Suri, critically edited and translated by Frank Van Den Bossche.

> It is in these regions that human beings have to work and act in order to get by, and consequently it the where the law of *karma* imposes retribution according to action. Fortunately, it is precisely in these regions that humans can have recourse to asceticism to be able to 'burn' *karma*, attain enlightenment and final liberation (p. 42).

Bhāratavarśa is described as the southern continent separated from the rest of *Jambhūdvīpa* by the Himalayas. Only a part of this region, the south central part, is called *Āryakhanda*, where the reach of Jainism prevails. This is the region where one may aspire for liberation or a higher birth in one of the other *karmabhūmi*s that are more conducive for liberation, where the chronological period ensures presence of a *tīrthaṅkara* (an enlightened soul who is a guide for liberation) and certainty for human liberation.

The *JDSH* (Haribhadrasūri) in particular describes the various regions, mountains, and rivers, naming them with certainty, with a number of references to distance and directions in the forms of *sūtra*s with a commentary. The text sets out its agenda in the second *sūtra*:

> 1) sectors, 2) the *yojana*s, 3) continents, 4) world mountain ranges, 5) peaks, 6) fortresses, and the rows (of abodes), (7?) 8) provinces, 9) the mountain lakes, and 10) rivers The sum total of these [constitute] the *samgrahiṇi* (summary) (Haribhadrasūri, *JDSH Sūt*. 2, p. 41).

One of the most interesting aspects of Jaina geography in the *JDSH* is the listing of numerous names of places and regions. Apart from naming so many regions, the geography is mathematically mapped out according to the canonical descriptions of earlier masters and teachers. We can see from the *Sūtra* 2 described earlier that the Jaina world is divided into natural features that are somewhat similar to our own modern descriptions of landscapes. The mountains are called *giri* and *parvata*, and they have sharp peak features called *pavatakūta*. The abodes in a row are those of divine beings often constructed with precious metals and ornate pavilions and gardens. The *kṣetra* or *varśa* refers to the continent and also the great *Jambhūdvīpa* in general. The text is elaborate in its descriptions with numerical distances and sizes that claim the area of regions and heights of the peak. For instance, in the sixth and seventh *sūtra*, the calculation of the area of a wall with a lattice and a balcony around *Jambhūdvīpa* which is circular is mathematically explained. The commentator acknowledges Aryabhatta I's method of calculation is to be followed: "The circumference of a circle is the square root of ten times the square of the diameter. Its surface area is the circumference multiplied with a quarter of the diameter" (Haribhadrasūri, *JDSH Sūt*. 2, p. 64).

This text seems to suggest that the Jaina philosophers were very interested in naming and describing the geography of the world they lived in. Yet, the logic of calculation through mathematics informed them of the validity of their conclusions. After explaining that there are 11 peaks in *Himavat* and *Śikharin,* the author derives 61 peaks on the mountains and arrives at a total sum of 467 peaks in all (Haribhadrasūri, *JDSH Sūtra* 15, p. 178). The number of peaks in each of the listed 61 mountains is multiplied by various numbers of peaks each to give the total number. Two sets of numbers are given in relative order to be multiplied by another series in

order to give the final total: relative orders being {11,2,52,2} numbers and {4,7,9 and 11} peaks (Haribhadrasūri, *JDSH Sūtra* 16 p. 181).

For instance, the *Himavat* and *Śikharin* have 11 peaks (*kūta*s) and are to be multiplied by 2 to give a total of 22 peaks. The text is difficult to follow without the commentary that clarifies a great deal of these mathematical operations that arrive at different figures and numbers of measurement and counts of landscape features.

The Jaina geographical imagination seems to be an exercise in mathematical imagination and abstraction of landscape itself. It may contain some geographical information in some places, but one could almost call this a mathematically imagined geography. The description of operations of numbers and the various calculations of area seem to be significant for the author than describing actual landscapes, climates, flora, and fauna. Small descriptions of some of the landscapes are present in the commentaries that are not in the main *sūtra*. For instance, "*Mahādrahah*" refers to "great lakes", or mighty bodies of water, much larger than other lakes (*Sūtra* 20, commentary, p. 204). But these are insignificant compared to the numerical descriptions of rivers—how wide, how deep, and how long, mountains—how high and the circumferences at the base and on top, or continents—how large an area. *Sūtra* 27 on the mountain descriptions, for instance, reads thus: *Śikharin* and *Kṣullmahimavat* are one hundred *yojana*s[3] high and are made of gold. *Rukmin* and *Mahāhimavata* are two hundred [*yojana*s] high and made of silver and gold (p. 242). Further describing the mountains, the *sūtra* claims that they are rooted under the surface of the earth, one-fourth part of their height (*Sūtra* 28, p. 254).

In conclusion, one may say that the precision involved in describing the geography is to delineate the regions of *karmabhūmi* with accuracy. It is also to indicate the places where liberation is possible and where one could find the true teachers of Jainism, the *tīrthankara*s. In other words, where one is located, in Jaina thought is to be articulated in detail to let one know what one has to do to advance in the spiritual path. This knowledge would possibly motivate one to seek the lands of higher possibility of liberation.

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[3]One *yojana* is roughly 15 km (from Pániker 2010).

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