In this paper, “urban” formation manifested in Mekelle, the “palace city” developed since the late 19th century, is analyzed in relation to the traditional settlement techniques of the targeted region spanning from Tigray (northern Ethiopian region) to adjacent Eritrean highland. Through the analysis, it became clear that topography was the essential factor for settlement site selection, and that there was a preferable layout for these settlements in the targeted region. While Mekelle also basically applied similar techniques, several distinctions, such as existence of a strategic network of hillside and flatland settlements and formation of street concept, can be also found.

**Keywords**: Urban formation, Hillside settlement, “Terraced enclosure”, Mekelle (Meqele), Ethiopia

都市形成、斜面集落、「段々集落」メケレ、エチオピア

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of Christian Ethiopia in the period of Aksumite dynasty which reached the peak in the 4th century, the Ethiopian political center moved southward due to decline of the dynasty around the 7th century. In the midst of expanding Christian Ethiopia toward the south, this region came to lose its position as a political center despite its legacy as an imperial origin. After that, domestic provincial rulers of the targeted region competed with one another, and any attempt for unification ended in tentative control. Nevertheless, this instability came to be overwhelmed before the “Era of Princes” and Tigray fought with other provinces. In 1872, the Ethiopian political center finally returned to Tigray. That is, Yohannis IV originating from Tigray was crowned as Ethiopian emperor and transferred its political center to the targeted region. Though his reign lasted only until 1889 and Ethiopian political center moved again to the south, he left the “city” Mekelle, the present regional capital of Tigray (Fig.2).

Development of Mekelle was initiated by Yohannis IV, who built his palace on the top of a hillock, where no remarkable settlement had existed, and obliged aristocrats and warriors to migrate on its foot. This “down-town” was formed around the palace without the process of modern urban planning”. This raises the following question: How was this “down-town” formed at the time?

As long as the modern urban planning process was absent, considering similarity and difference between “urban” formation and traditional settlement techniques can give clues to answer it. This is the first step to identify the meaning of traditional Ethiopian “city”. Topography is a key to understand it because, historically, settlement has been often formed on the hillside (this feature is examined in chapter 3).

On the actual site of Mekelle, there used to be five hillside settlements before Yohannis IV’s period, while four settlements had also existed in the flatlands (Tadesse 2001, Okazaki 2009). Therefore, the contrasting analysis between the hillside settlements and the “down-town” located in flatland would lead to a clearer understanding of “urban” formation techniques of Mekelle. Among all original settlements, Inda Mesqel has kept the past situation most explicitly. This settlement, which is located on the hillside, has not yet been equipped with roadway and pathways have not been paved, while the number of inhabitants has been increasing. Therefore, the settlement is recognized as the most suitable settlement to apply the reconstructive survey.

1-2 Objective

This paper aims to extract the “urban” formation techniques of Mekelle, from the spatial aspect. It is analyzed in relation to the traditional settlement techniques of the targeted region. Specifically, the case of Inda Mesqel is studied here (Fig.2). At first, the history of the targeted settlement is clarified by the oral history of each hereditary line. On that basis, two research activities in different scale, that is, in settlement and parcel scales, were applied.

The former is extracting the traditional techniques on hillside settlement of the targeted region. Due to the fact that the majority of inhabitants were farmers, the relation between land use and local agriculture should be considered. Then, the case of Mekelle is analyzed, to confirm whether those traditional techniques were applied or not.

The latter research activity is about a more detailed one in the parcel scale. How the hillside land was inhabited in the middle is the key. On that basis, concrete formation process of the targeted settlement is studied. In short, the analysis deals with how the land was gradually occupied, and what kind of people occupied the land. Lastly, this is to be compared with the case of the flatland down-town, for the comprehensive understanding of “urban” formation.
1.3. Methodology
In spite of the detailed descriptions of Pankhurst, his explana-
tion was not based on visual sources such as historical sketches
and photos, or field survey. His study could not cover more specific
issues on “urban” formation or spatial structure. Therefore, this
paper descopes the area of study and approaches the “urban” char-
acteristics from visual sources and results of field survey.
A series of field surveys of Índa Mesqel have been done in 2010,
2011, 2014 and 2018 intermittently. According to the survey held
in 2014, the existence of 53 parcels has been confirmed. However,
this number is the result of constant land division by inheritance
and selling. The interview research enabled to extract the original
eight hereditary lines that have occupied the land of Índa Mesqel.
The key informants are the descendants of each hereditary line.
The oral history of each family is helpful to clarify the transfor-
mation of the targeted settlement. The outcome of this interview
enables the analysis of spatial issues, by combining the present
cadastral map with the aerial photo taken in 1960s.
Though available sources are not abundant, there are several
historical sketches and texts by successive European travelers,
including two sketches of Mekelle drawn in the 19th century. Fur-
thermore, the relevance with local agricultural knowledge gives
authors findings, because majority of Tigray’s people were, and
still are, farmers. These are helpful to extract traditional tech-
niques on hillside settlement formation.
As relevant preceding study, Okazaki has already researched
the old town of Mekelle. Comparative analysis between our result
of hillside settlement and her study of flatland town would lead to
the comprehensive understanding of “urban” formation of Mekelle.

This paper aims to form the basis for future related researches
on Ethiopian “city”. For example, comparison with other “city-like”
places such as Gonder, and etymological study on ketema and oth-
er related words will enhance its understanding.

2. History of Índa Mesqel
Índa Mesqel is situated on the hillside looking down on a water
stream pouring into down-town, which is now almost exhausted.
This is a legendary settlement where the messengers visiting
Egypt in 1382-91 arrived with the Holy Cross (mesqel means
‘cross’). Existing eight hereditary lines had started settling down
since the 19th century gradually (Table 1, Fig.3: A-H corresponds
with the original hereditary lines). The earliest settler among the
original hereditary line is <family-A>, which has passed down an
interesting family history. The ancestor who settled to Índa Mes-
qel had a close relationship with Mîrch’a, father of Yohannïs IV
Ⅳ. He arranged the marriage between Mîrch’a and his wife Siiffa,
and Yohannïs IV was conceived here. Then, his son also served
Yohannïs IV, as blattén-gêta. The credibility of this family history
is not certain, but it is worth referring to another legendary story,
which may corresponds to this one.

According to Tadesse (2001), Yohannïs IV had five localatal
candidates to construct his palace, including Mekelle. It is said
that the reason why he chose Mekelle was because the local people
had a favorable attitude towards him, compared to the Tämben
people who opposed. The family history might explain the reason
of the mutual favorable mood between Yohannïs IV and the local
people.

The original condition of Índa Mesqel before the beginnings
of the 20th century is vaguely known. According to the key infor-
ant of <family-A>, the ancestor occupied broader land in days
past (Fig.4: A). Furthermore, local people say that the settlement
previously spread more to the upper side. This is confirmed by the
aerial photo taken in 1960s (Fig.4: Land-X). Still, no further detail
of this site exists”. Aside from this, at one point in time, a certain
Mikael Church existed in this settlement, albeit it disappeared
due to the church removal during the reign of Yohannïs IV (Oka-
zaki 2009). Though the scale of the church is vague, it is said to
be located at the highest part of the hill (Fig.4). As compared with
upper hillside, condition of lower part of the settlement might be
less densified. According to the field survey, the hereditary line,
which dates back to Yohannïs IV period is only <family-B>, whose
land is located at the bottom of the hill, besides <family-A> (Table
1, Fig.4).

Tigray’s political history in the first half of 20th century is com-
plicated. Here, the story is minimized to introduce two grandsons
of Yohannïs IV, Siyyum Mengesha and Gugsa Ar’aya. Siyyum,
a son of Mangesha Yohannïs, was appointed as the governor of
Tigray in 1914, when he was 27-years-old, by the imperial govern-
ment of Ethiopia. In 1928, the governor of eastern Tigray was altered to Gugsa, while Siyyum continued to govern western Tigray. Gugsa made Mekelle his capital (Erlich 2005). After his death in 1933, Siyyum again led the whole Tigray, and fought against Italy in 1935/36. Though he surrendered to Italy, he was again appointed as governor of Tigray in 1941 (Rubinkowska 2010). The interview has clarified that Inda Mesqel had a close tie with Siyyum (Table 1: C, F, G, H). It was as much as to set his land here (Fig.4). Though when it happened is unknown, the family history of family-C provides clues for consideration. His great-great-grandfather served as a skilled smith since Yokannis IV’s period. He fought bravely in the first Italo-Ethiopian war of 1895/96 with Siyyum, and later acquired a title bezir (Table 1: C). This story leads to the deduction that close ties between Siyyum and this settlement had already started since at least in his earlier period, prior to Gugsa’s appointment. On the other hand, the other three hereditary lines related to Siyyum were of second Siyyum period. They were given the land as a reward for their services in some battle, perhaps in the second Italo-Ethiopian war, and moved to the targeted settlement (Table 1: F, G, H).

Though the ancestors of Inda Mesqel were closely related with successive governors of Tigray in such a way, the physical condition of Inda Mesqel rather resembles that of other local villages. This is confirmed by the key informant’s statement (family-C, F, H) that farming activity could be seen normally in their childhood. As a result, when urban land was expropriated by Derg regime in 1975, the settlement was designated as rural, which means it was exempted from the expropriation. While the urban lands of historical families were requisitioned and segmentalized into pieces in the process of nationalization, the targeted settlement kept its original condition, which allows the authors to apply the reconstructive analysis (Fig.3, 4).

3. Hillside Settlement Techniques
3-1. Techniques on Site Selection

From the sketches and texts of European visitors, several techniques on settlement tradition can be extracted. First of all, it has been often situated in the hillside, and surrounded by contoured land. This is confirmed by Henry Salt’s sketches, drawn in 1805 (Fig. 5, 6). This can be also interpreted by the description of Nathaniel Pearce. When he visited plane “town” in 1811, he mentioned as follows: “Like most of the towns in Abyssinia, it has no walls, but stands in the plane, whereas the Abyssinians in general build upon heights (Pearce 1831)”. The topographic condition was important to secure a settlement from the outsiders. Especially for each provincial ruler, it was a serious issue. For example, Ras Welde Sillasé, the warlord of Tigray, selected Anfa’alo as his commercial and administrative center in the 18th century. This place had been recorded as “fortified town” of a natural fortress by Al-Haymi, visitor of 17th century.
(Al-Haymi 1986). According to Salt, Ras might have selected this place in spite of its water shortage: water could be obtained only from “a considerable distance from the dwelling houses (Annesley 1809)”. In that era of frequent battles, the topographic condition might have been more important than water conditions.

However, especially for farmers, existence of water was an essential factor for the site selection. In the targeted region with its semi-arid climate, water was undoubtedly essential to survive. This is implied in each sketch by the existence of green (Fig.5) and farmland (Fig.6).

Lastly, a church is likely to be situated on the hilltop, as shown in Fig.6. In Fig.5, this is not readily confirmed at first glance, but detailed observation enables us to detect a church-like building at the upper left. In fact, this is a traditional way of Ethiopian Orthodox church, as symbolized by Debre Damo, the oldest monastery founded in the 8th century. Here is situated on the flat-topped mountain and accessible only by roping up a cliff 15m-high.

These techniques on site selection are also mirrored by the bigger “city-like” places. To examine this, the sketch of Adwa drawn by Bianchi in the late 19th century is meaningful, because it was the biggest market place in Tigray at that time (Fig.7). From this sketch, above-mentioned techniques such as hillside habitats, contoured surrounds and hilltop church are confirmable. Furthermore, a river flow has also existed in here, albeit it is not seen in the sketch.

### 3-2. Local Agricultural Knowledge and Land Use

The hillside settlement techniques can be explained from the aspect of local agricultural knowledge as well. According to Corbeels et al. (2000), the classification of soil potential is closely related with topography, with taking soil depth and water holding capacity into account. Local farmers found that the most fertile soil with high water-holding capacity appears in valley bottom or natural terraces. Therefore, people settled on upper hillside, to reserve the bottom of slope for the agricultural fields. Hillside settlement tradition can be recognized as the outcome of the empirical knowledge on local agriculture.

Furthermore, local farmers developed the technique of terraced agriculture to improve soil fertility and productivity. They occupied uncultivated lands from the bottom of hill little by little, by piling stones up, or putting other materials, such as weeds and bushes (Corbeels et al. 2000). This also effected the establishment of the land ownership.

### 4. In Case of Mekelle

#### 4-1. Natural Setting of Mekelle

Salt also drew a sketch of the site of present Mekelle, and described as follows: “the view of the village Muccullah from the bottom of the hill is extremely picturesque (Annesley 1809)” (Fig.8). Another description by Salt clearly explains that natural setting of Mekelle coincided with traditional settlement techniques of the targeted region: “After passing several more hills we came in sight of Muccullah, in the vicinity of which, on the top of a hill, is a large church, that forms a very conspicuous object across the plain. The land about the town is in a high state of cultivation: the soil consists of a rich black loam (ibid.)”. The mentioned hilltop church, named Ina Iyesus, is drawn in his sketch (Fig.8). At the time when Salt drew this sketch, here had already become one of the favorite places of Ras Welde Sillasé, and Ras preferred visiting this church (Salt 1814).

Furthermore, the site was rich in water stream though many are almost exhausted presently (Fig.2). People had settled in such a preferable environment and both hillside and flatland settlements were formed, albeit whether settlement-like habitats in Fig.8 are hillside settlement or church school dormitory is not clear. From the comparison between the location of original settlement and water stream, strong physical relationship is shown (Fig.2). That is, original settlements are likely to be situated along water streams.

In this way, Mekelle was situated in the typically preferable site in the local context, and church was erected in accordance with the traditionally preferable location. However, the physical condition of Ina Mesqel cannot be understood from the sketch because the site is hidden between two high hills (Fig.8).
4-2. How did Mekelle Become a “City”?

After 76 years of the Salt’s sketch, another French visitor, Gabriel Simon, drew a sketch of Mekelle in 1881 (Fig. 9). In spite of limited number of trees and water streams drawn in his sketch, he described its fertile and well-watered situation in text. By this time, both Yohannis IV and his son Ar’aya Sillasé had residences in Mekelle (Pankhurst 1985, Simon 1885). A large circular structure at the center of Fig. 9 corresponds to this residence. From this sketch, it is clear that the royal compound was situated on the small hilltop at the bottom of higher hills. In addition, the strategic importance was enhanced by the fact that there was “a very good unfailing spring of water in the garden” while “a small

4-3. Network of Settlements

The site of present Mekelle used to have nine small settlements before the development initiated by Yohannis IV. People found the value of natural setting in accordance with their local settlement techniques, and settled here as incorporated in network of existing water streams. Though to what extent these settlements had a social relationship each other is not clear, a land belonging to the relative of “family-A’s” ancestor has existed since the 19th century in the neighboring settlement of Índa Mesqel17. Nevertheless, the site was no more than a minor place without any remarkable settlement. Though the site became a preferred seat of provincial ruler by the early 19th century, considerable development had to wait until when Yohannis IV decided the site as his political center.
Since then, a new thought on the relationship between hillside and flatland settlements was added. That is, how to physically secure the site became an important issue. He sited his palace on the small hilltop of the flatland. The palace was "surrounded by a high wall (Wylde 1901)", and he settled his retainers around the palace compound. However, these were not enough because here was surrounded by higher hills on the east side. Controlling the site should be considered from a broader perspective. In short, strategic network between hillside and flatland settlements was essential to secure Mekelle.

Índa Mesqel was located in the strategically important place. From this hillside settlement, a broad view westward has been available and water stream has poured into the front of palace compound (Fig.2, 11). The existence of a kind family is suggestive to understand his multi-tiered defense strategy. That is, while flatland settlements physically guarded the palace compound, hillside settlements kept an eye on the broader horizon.

The significance of settlement network has been already indicated by Shitara (2008), from the case of Gonder. According to him, visual and acoustic relation is the most important, of all others. This visual and acoustic connection among the scattered settlements would contribute to strengthening security and even communal life although the reality of such community pattern has not yet been precisely studied.

5. Analysis in the Parcel Scale
5-1. "Terraced-enclosure"

The traditional parcel pattern around Mekelle is characterized by a certain size of courtyard, which is enclosed by curvilinear wall of piled stones or sometimes wattles (Fig.12). This tendency is common in both hillside and flatland settlements. In the enclosure of the parcel, several buildings, such as residence(s), separate kitchen(s) and semi-outdoor house(s) for cattle and other livestock are placed.

A simple question, why the enclosure-type parcel that defines the family compound is usually curvilinear, is suggestive to understand the traditional settlement technique. Taking into consideration the topographic conditions of the site, the shape of terrain is always curvilinear in nature, therefore, the shape of parcel is also likely to follow this. This is clearly shown in the sketch drawn by Salt (Fig.5). People tended to find level land-pockets in the slope, and settled down. Sometimes, or even frequently, they might level the land to make a suitable living environment. This process reminds of above-mentioned traditional terraced agriculture.

Índa Mesqel was not an exception to this at the point of 1960s. When the land of each hereditary line is observed, it is clear that house buildings tend to be located at the upper side (Fig.3, 4). Vacant land of the lower side, shown in Fig.4, should be farmland following the key informants’ statement that farming activity used to be still there. Thus the formation of “terraced-enclosure” as residential compound on the higher side of the hillside becomes the most characteristic land use pattern while on the lower side land is tended to be used for agriculture.

Among the lands of each hereditary line, steeply sloped lands such as <family-A, C and H> consisted of aggregation of several terraces (Fig.4, 13). The gap of different levels is treated by stone piles for making vertical walls, like as terraced agricultural field (Fig.14). This suggests that people technically formed “terraced-enclosure”, in such a way as to form a terraced agricultural field, too.

The recent urbanization occurring in Índa Mesqel obscures these relationships between topography and land use. Though detailed discussion is set aside for another study, the urbanization process is basically caused by shift of land use from the agricultural to the residential, and land segmentation. From the aerial photo during the 1960s, it is clear that these shifts already started partially at that time (Fig.4).

5-2. Topographic Hierarchy

The reconstructive analysis on Índa Mesqel clarifies how and when each land was gradually occupied by the ancestors of key informants (Fig.15).

Accordingly, the land started to be occupied from the upper hillside by <family-A>, in the 19th century. By the reign of Yohannís IV, this family had become powerful, and taken broad land around the hilltop (Fig.4). In Yohannís IV’s period, <family-B> started to settle down in the lower part of the settlement. The allocation of lower land should be due to his title balgeda, as this title was
not related to aristocrat or warrior. Next, <family-C> immigrated below the land of <family-A>, around the beginning of the 20th century. He was closely related with Siyyum as mentioned earlier. At almost the same time, taking into account the key informant’s generation and age, <family-D> was likely to have come into existence in the lower land, albeit the detail is not clear. Subsequent settler was <family-E>, in Gugsa’s period. The land between higher and lower parcels at that time was allocated to him. The land occupation of Ïnda Mesqel was completed with the immigration of the remaining three families in the second Siyyum’s period. On the one hand, the remaining lower lands were allocated for <family-F> and <family-G>, whereas another surface of the hillside was for <family-H>.

In parallel with this process, probably before Gugsa’s period, a parcel for Siyyum was formed below the land of <family-A>. Though he was a member of the royal family, preceding land occupation must have been acknowledged as a fait accompli.

From this settlement formation process of Ïnda Mesqel, two tendencies can be extracted. First, the land occupation progressed from the upper to the lower, and, secondly, the upper land tended to be occupied by aristocrats or warriors. The text of Salt at the beginning of the 19th century supported these hypotheses. Accordingly, when he dropped into Digsya for the second time, five years since the first visit, he mentioned: “no great changes appeared to have taken place ... except that a few additional huts or caves had been constructed in the lower town ... I observed some labourers busily engaged in excavating and forming one of these singular habitations (Salt 1814)”. This description implies that settlement development was from upper hillside. Furthermore, in another place, when he visited “the lady in command of the district”, he “had to traverse a steep pass which led us into a fertile valley, and soon afterwards to a lofty hill on which stood the mansion” of her (ibid.). Here, it is implied that the prestigious family of the local community was likely to live on the upper hillside.

5-3. Case of Flatland Down-town

Interestingly enough, “terraced-enclosure” of the hillside settlement should be applied even in the down-town of Mekelle, situated in the flatland.

According to the analysis by Okazaki (2014), in the “down-town” of Mekelle, which was formed at opposite side of the palace, traditional houses were dispersed loosely at the end of 19th century (Fig.2, 16). Moreover, as shown in the aerial photo of 1960s, the existing street is likely to be curvilinear (Fig.17). These characteristics such as location along water streams, dispersed arrangement, and curvilinear parcel are in common with traditional settlement techniques.

Furthermore, according to Wylde, the majority of houses around the palace were “built on several minor hills”. Nearby the palace, a two-storied residence, which shows this characteristic, has still remained (Fig.18). This residence has been conspicuous because it stood on a heavy foundation in a topographically higher place than the surrounding. According to the house owner, her father serving under Gugsa as deggiyat built it before the Italian occupation period[21]. In this way, it is understood that people, more precisely aristocrats and warriors, found out the micro terrain, and settled down, at the initial phase of development.

In this kind of “urban” formation process, the emphasis is placed on how individuals occupy each territory, while the planning of street network is not so rigorously reflected. Hypothesis of Okazaki is helpful to understand subsequent urban transformation process (Fig.19). According to her, each old parcel came to be
6. Conclusion

There are several traditional techniques on settlement formation in Tigray and adjacent part of Eritrea. First of all, a settlement has been often situated on the hillside. Secondly, a certain place surrounded by contoured land, with existence of water and good soil, has been preferred. Good soil is often found in the bottom of the valley, and as such, the topography is an essential factor for the site selection of a settlement. A hillside settlement has often consisted of a hilltop church, hillside habitats and agricultural fields in the bottom of the slope. People have formed their parcel following the “terraced-enclosure” concept. The development of settlement has progressed from the upper hillside, which is often settled down by prestigious family of the community.

These settlement techniques of the targeted region were basically applied in the case of Mekelle, which was developed as the “palace city” under Yohannis IV. Even in the down-town located in the flatland, a similar way of “terraced-enclosure” was adopted. This is the reason why the shape of each parcel is curvilinear in the initial phase of “land adjustment” process (Fig.19). This similarity between traditional settlements and “city” seems to make it difficult to understand what can be defined as a traditional Ethiopian “city”. Nevertheless, several distinctions can be also extracted from the case of Mekelle: 1) existence of the palace and subsequent population increase, 2) social hierarchy of settlers, 3) increase of trading activity, 4) emergence of a new occupation, 5) existence of a strategic network of hillside and flatland settlements, and 6) emergence of row house type and formation of street concept. These are recognized as part of the criteria to decide whether a certain place is possible to be called a “city” or not.

Nevertheless, the definition of traditional Ethiopian “city” has been remaining as an unsolved question. This should be examined more, with other cases of “city-like” places. However, unfortunately, historic “urban” environment is being lost day by day, before understanding the definitive explanation of traditional Ethiopian “city”. For example, in the old town of Mekelle, little consideration on the historic values has been taken in the new urban planning policy since 2009. The unique curvilinear and narrow streets have been widened in rectilinear manner and a number of historical row houses have been demolished. This point is more difficult and complicated than simply considering heritage protection issue, since the area had suffered urban poverty and other social related problems as well as low accessibility of vehicles (Okazaki 2011). What is needed is to rather find a solution of social problems, not just protecting historical environment. Hopefully, the potential of the heritage, or uniqueness of the “city”, should be applied more towards problem solving. Though the actuality is serious and complicated, it is not too late to change the fortune outcome.

Acknowledgement

The authors are grateful to the key informants who cooperated this study. The research was done with the native Tigrinya speaking assistants, Alexander Tetemke and Tewodros Nega. Throughout the whole fieldwork, Mekelle University Institute of Paleoenvironment and Heritage Conservation contributed to making a process go smoothly. A part of field work was funded by Grant-in-Aid for JSPS Research Fellows. In addition, thanks to Kaz Yoneda who corrected English expression.
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Notes

*1) In the usual context of Ethiopian history, Solomonic dynasty which started in the 13th century is separated with predate Aksumite and Zagwe dynasty. Therefore, Aksum, the ancient capital of Aksumite dynasty, is treated as out of focus in this paper.

*2) Though “Tigré” is better as pronunciations, “Tigray” is adopted in this paper, because it is more popular in written form.

*3) Tigray and adjacent part of Eritrea are generally recognized as the same cultural area, and the same language is spoken.

*4) Though “Megele” is better as pronunciation, “Mekelle” is adopted in this paper, because it is more popular in written form.

*5) The first modern urban planning for Mekelle was made by Italians in 1957, during the occupation period (Italy occupied Ethiopia from 1936 to 1941). Its basic idea was to add new town, adjacent to the old one. Though Italian occupation lasted only five years, modified plan was im- plemented after the occupation (Okazaki 2009, 2014).

*6) He was originally lived in Wello, south of Tigray. When he escaped due to his murder, he met Mirch’a by chance, and settled Ïnda Mesqel later. In the parcel, a traditional house built in c. 1870 has remained. The key informant unfortunately died in 2014.

*7) While one informant says that the land belonged to Mirch’a, another says Mangesha Yohannís, son of Yohannís IV.

*8) Second Italo-Ethiopian war. Italy defeated and Africa Orientale Italiana was created.

*9) This is extracted through the interview research. Today, this place has become vacant land.

*10) Derg was the regime that ruled Ethiopia from 1974 to 1991. It abolished the monarchy and embraced communism. By the act of land national- ization, all “extra” housing units in the urban area became government property by expropriation, and possession of land more than 500m² was prohibited. On the other hand, in the rural areas, the possession of land less than 10ha was permitted. After Derg regime was collapsed, all urban and rural lands and natural resources have belonged to the state and the public. Presently, urban lands can be held through a lease sys- tem. The lease period for residential purpose is 99 years.

*11) Henry Salt visited Ethiopia twice, in 1805 and 1810. Each travel record, accompanied by several illustrations, was published (Annesley 1809, Salt 1814). Furthermore, a large-sized book of his paintings drawn in his first trip, was published in 1809. In this, eight views of Ethiopia are included.

*12) Nathaniel Pearse is a British man who accompanied Salt’s 1805 mis- sion. Afterward, he married local girl and served Ras Welde Sellase until the death of Ras in 1816.

*13) “Abyssinia” is a synonym for “Ethiopia”, widely used till the middle of 20th century.

*14) Ras is a title of a ruler ranking directly below nïgus, hereditary title for the monarchy and embraced communism. By the act of land national- ization, all “extra” housing units in the urban area became government property by expropriation, and possession of land more than 500m² was prohibited. On the other hand, in the rural areas, the possession of land less than 10ha was permitted. After Derg regime was collapsed, all urban and rural lands and natural resources have belonged to the state and the public. Presently, urban lands can be held through a lease sys- tem. The lease period for residential purpose is 99 years.

*15) The viewpoint of Fig.8 is estimated from the physical relationship of two high hills (Fig.2). The hill with Ïnda Iyesus is located in the recess of foreside hill.

*16) Whether each line drawn in the sketch is water stream or street is dif- ficult to identify. The author identifies it by taking topography into ac- count, because water runs from the upper to the lower. The viewpoint is estimated from the position of two high hills, royal compound, and wa- ter stream (Fig.2). When reconstructing the position of street, not only existing street network, but also analysis of Okazaki (2009) is referred. Through the analysis, it becomes clear that the position of drawn water streams differs from the actual state by and large.

*17) This is extracted through a field survey.

*18) This mention is specifically true in the southeastern part of Tigray, including Mekelle. Typical parcel pattern varies depending on the area within the targeted region. For example, in the northeastern part of Tigray, rectilinear parcels can be often found.

*19) This tendency is especially extracted at the land of <family-B, C, E, F and H>. The land division of 1960s is estimated based on the interview research and physical situation at that time. However it is partly dif- ferent with present one due to removal of original settlers, newly land acquisition, and misalignment of aerial photo's angle.

*20) The authors are now preparing a paper entitled “Urbanization Process of Mekelle, Ethiopia, from the Spatial Aspect: Case of Ïnda Mesqel’s De- velopment from a Settlement to an Urban Area.”

*21) The informant is 79 years old at the year of 2018. She was born in Me- kelle and grew up in this house.
和文要約

エチオピア北部・現ティグライ州都のメケレは、19世紀後半に当時エチオピア皇帝・ヨネフス4世が宮殿を建設することをきっかけに発展した「都市」で、それ以前には5つの斜面集落と4つの平地集落が存在していた。宮殿は平地の小さな丘の上に建替えられ、その周りに後世の家屋が建つことによって初期の発展が進んだ。

本論文は、ローカルな集落形成作法を明らかにし、それと旧市街の形成との関連を考察したものである。

これまでエチオピアにおける都市史研究は、利用できる歴史的な都市図書や地図、文書などがほぼ存在しないという事情もあって、あまり論されてこなかった。ゆえに、エチオピアにおいて「都市」が何を意味し、またどういった空間的特質を持つのかという疑問については未だよく解明されていない。近代都市計画なしに初期の発展が進んだメケレの事例を著目し、その「都市」の伝統的な集落形成の間に存在する類似や差異を明らかにすることは、この疑問にアプローチしていくための第1歩となるのである。

本論ではまず、対象地域を訪れた歴代の外国人によるスケッチや記述、農業に関するローカルな知識に関する先行研究を用い、対象地域の集落立地や集落形成に関する特徴の抽出を行う。その上で、より詳細な集落形成プロセスを明らかにするため、メケレの発展以前から存在した1つの斜面集落インド・メスキルを対象にフィールド調査を行った。構成する家族間の緊密な関係、フィジー、1960年代に撮影された航空写真、現在の地図をもとに、どのようにそれに近い土地が徐々に占拠されていったのかについて、特に空間的側面から客観的に明らかにする。これらを通じて得られた知見、およびメケレ旧市街の発展過程に関する先行研究を踏まえ、平地に形成されたメケレ旧市街にそれらの特徴がどう反映されているのか、成いはいないのか、という問題にアプローチすることで、メケレの「都市形成に関する特質を明らかにしていく。

分析を通じて、対象地域の集落立地は地形と密接な関係を持つことが明らかになった。一般に、居住地は斜面中腹に形成されることが多い。農地は斜面の下の方に、教会は斜面の上の方に位置することが多い。これは、農業に適した肥沃な土が谷底の水場近くに一番多く存在するという伝統的な農業に関する知識とも呼応するものである。また、各集落は川に隣接して形成されることが多い。各居住圏の区画は地形に沿って形成されるため、その形状は基本的には曲線を成し、その区画には住宅やキッチン、家畜のための小屋といった構造物が散りばめられるように配置される。斜面と斜面の間に平坦な土地を見つけ出して居住用の区画を形成していくという作法は、地域伝統に存在した段階の形成を想起させることがある。本論文ではこれを「段々集落（terraced-enclosure）」と呼称することとした。対象のインダ・メスキルも基本的にはこの作法に則って形成されており、その有機的な集落形成プロセスからは、居住地が斜面の上の方から下の方に形成されていくという傾向と、コミュニティの有効な斜面の上の方に居を構えるという傾向の2つが確認された。

メケレの立地、および初期の旧市街の形成からは、こうした伝統的な集落形成作法との共通点をいくつか見だすことが可能である。例えば、メケレ発展以前の19世紀初頭に当地を訪れたSaltによるスケッチや記述からは、斜面頂上に位置する教会、農業に適した土、水場の存在に関する描写を読み取ることが可能である。また、メケレの発展段階である19世紀末に当地を訪れたWyldは、平地に位置するパレスの周りに「いくつかの小さな丘の上」に大半の家が建設されている様子を描写している。実際に当時の様子を推定できる史料を見てみると、水辺に沿った市街地の立地、分散的な市街地の形成、曲線的な区画といった特徴を提出することが可能である。すなわち「段々集落」の考え方と、平地に位置するメケレの旧市街においても、微地形を見つけ出すことによって応用されたと考えることが可能である。

こうした類似性は、メケレの初期の「都市」形成を伝統的な集落と区別することの難しさを端的に示している。それでも、メケレと伝統的な集落形成の間には、以下のような違いを認めることが可能である。①宮殿の存在とその後の人口増加、②居住者の社会的性質の変化、③商業活動の活発化、④それまでに存在しなかった職能の発生、⑤斜面集落と平地集落の間のより戦略的なネットワークの生成（宮殿を含む広範な眺望が得られる対象集落は、宮殿周辺を流れる川の上流に位置するという意味でも、戦略的に重要な場所であった。平地に位置する旧市街は物理的に宮殿を防御することに貢献したのに対し、斜面集落はより広い視野での「都市」の防衛に必要不可欠であった、⑥旧市街における長屋型の建築の出現とそれに伴う変化の有する意味合いの変化（出入口を前面にして建築を建てるという習慣は対象地域には存在せず、実際にインダ・メスキルにはこうした建築は今でも1つも存在しない）。これらの特徴は、ある場所が「都市」と言えば歴史の実をなすことができる。

(2017年11月10日原稿受理、2018年4月23日採用決定)