

## **INFORMATION TO USERS**

**This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.**

**The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.**

**In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.**

**Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.**

**Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.**

# **UMI**

**A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA  
313/761-4700 800/521-0600**



**VISION AND REALITY  
BUDDHIST COSMOGRAPHIC DISCOURSE IN NINETEENTH-CENTURY JAPAN**

**A DISSERTATION  
SUBMITTED TO THE DEPARTMENT OF RELIGIOUS STUDIES  
AND THE COMMITTEE ON GRADUATE STUDIES  
OF STANFORD UNIVERSITY  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY**

**Masahiko Okada**

**August 1997**

**UMI Number: 9810182**

---

**UMI Microform 9810182**  
**Copyright 1997, by UMI Company. All rights reserved.**

**This microform edition is protected against unauthorized  
copying under Title 17, United States Code.**

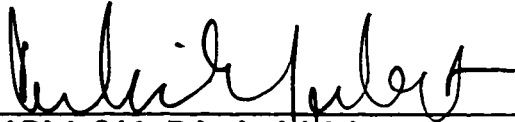
---

**UMI**  
**300 North Zeeb Road**  
**Ann Arbor, MI 48103**

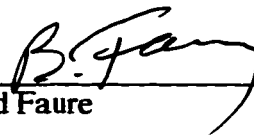
**© Copyright by Masahiko Okada 1997**

**All Rights Reserved**

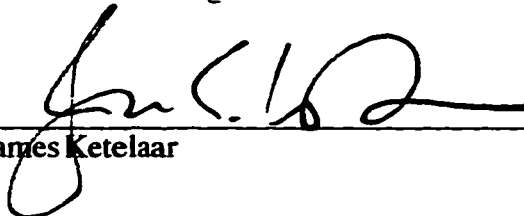
I certify that I have read this dissertation and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
\_\_\_\_\_  
Carl Bielefeldt, Principal Adviser

I certify that I have read this dissertation and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
\_\_\_\_\_  
Bernard Faure

I certify that I have read this dissertation and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
\_\_\_\_\_  
James Ketelaar

Approved for the University Committee on Graduate Studies:

  
\_\_\_\_\_

## **ABSTRACT**

In 1810, a Japanese Buddhist monk, Fumon Entsū wrote his main work, *Bukkoku rekishōhen*, and established a system of Buddhist astronomy and Buddhist geography based on the idea of a flat and motionless earth. In opposition to the modern scientific worldview, especially the idea of a spherical earth and the heliocentrism, that was getting popular in his period, he tried to prove the existence of the flat world system of Buddhism. In order to verify this theory, Entsū calculated the movement of the heavenly bodies and predicted astronomical phenomena. He also visually demonstrated the plausibility of his Buddhist astronomy by making an annual calendar and the miniature mechanical model of the Buddhist worldview. Moreover, Entsū propagated his theory by conducting a public observation of astronomical phenomena, lecture tours, and publication of his works.

The people influenced by Entsū's theory through these activities constituted a school and developed a unique thought movement in the early modern and modern Japanese intellectual history. One of the main purposes of this dissertation is to fully examine this thought movement which has been neglected by intellectual historians and to provide the study of early modern and modern Japanese intellectual history with a new material.

Entsū and his follower's thought movement has simply been interpreted as a reaction of the traditional religious worldview against the modern scientific worldview. In this dissertation, however, I would like to reexamine this thought movement in its discursive relation with the contemporaneous intellectual activities and rethink the meaning of this unique thought movement. Reconsidering the stereotyped image of Entsū's works, which includes significant topics of modern intellectual history, such as the relations between tradition and modernity, science and religion, and idea and reality, is to reevaluate the basic perspective of conventional Japanese intellectual history.

**Moreover, Entsū's theory was the first Japanese Buddhist thought that dealt with the relation between modern science and religion. Examining Entsū works as "the first modern Buddhism," I would also like to reveal a discursive foundation of modern Japanese Buddhist thought in its early form.**



## **ACKNOWLEDGMENTS**

I would like to thank the Tenrikyo Ichiretsukai Foundation for scholarship in support of my entire degree program at Stanford University; the member of my dissertation committee and dissertation defense for their guidance and support throughout the process of researching and writing the dissertation, in particular Professors Carl Bielefeldt, Bernard Faure, and James Ketelaar; faculty, colleague, and staff in the Department of Religious Studies, Stanford University, who have provided encouragement and assistance in various ways, in particular Irene Lin and Wilburn Hanson; the professors of the institutions where I used to study for their continual guidance and support, in particular Professors Yoshitsugu Sawai and James Foard; my parents and my wife's parents, without whose support this venture would have been impossible, my wife Mami and my son Hikari who have continually nurtured the development of my work and made the task of enduring difficulties seem effortless, and my daughter Satsuki for the great memory which she left and eventually made everything possible.

## CONTENTS

ACKNOWLEDGMENT	vi
Chapter	
1. INTRODUCTION	1
Fumon Entsū and <i>Bonreki</i>	1
Bonreki and History of Japanese Religious Thought	4
Structure of Text	13
2. SHAKING THE WORLD: EMERGENCE OF NEW COSMOGRAPHIC DISCOURSE IN JAPAN AROUND THE YEAR 1800	16
Introduction	16
The Introduction of the Heliocentric Theory: Shiba Kōkan's <i>Oranda Tensetsu</i>	20
World without Mystery: Yamagata Bantō's <i>Yume no shiro</i>	26
Japan as the Center of the World: Satō Nobuhiro's <i>Tenchūki</i>	34
Substantiation of Illusion: Fumon Entsū's <i>Bukkoku rekishōhen</i>	41
Conclusion	48
3. FUMON ENTSŪ AND <i>BONREKI</i> : DISCOVERY OF BUDDHIST ASTRONOMY	51
Life of Fumon Entsū & Bonreki	51
Works of Entsū	54
Discovery of <i>Bonreki</i> as an Original Astronomy	58
Buddhist System of the Universe	61
Criticism of the Spherical Earth	67
Landscape of the Enbudai Island and the World Map	71
Buddhist Calendar System	79
Movements of Heavenly Bodies	86
Bonreki and Modern Buddhism: <i>Tengen, Nikugan</i> , and Realism	92

Chapter	Page
4. SHUMISEN AS EXTENDED SUBSTANCE: ESTABLISHMENT OF MODERN BUDDHIST COSMOGRAPHY	98
Cosmographic Discourse and Conceptualization of the World as Reality	98
Image of the Shumisen World in Traditional Buddhist Cosmography	104
Fumon Entsū's Buddhist Cosmography	116
The Shumisen World as Extended Substance: Meaning of Entsū's Invention	130
5. MOVEMENT: DEVELOPMENT OF <i>BONREKI UNDŌ</i> IN NINETEENTH CENTURY JAPAN	136
Meaning of Silence	136
Spread of Bonreki and Formation of School	139
Development & Separation: <i>Dōshiji</i> and <i>Ishiji</i>	152
Dissolution of the Bonreki Movement	166
6. WHEREABOUTS OF SHUMIEN: COSMOGRAPHIC DISCOURSE OF THE MODERN JAPANESE BUDDHISM	172
Bonreki Movement and Modern Buddhism	172
Buddhist Worldview of Modern Buddhology: Inoue Enryō's <i>Yōkaigaku</i>	176
The World within Text: Kimura Taiken's Buddhist Cosmography	192
The World within Mind: Modern Landscape and Subjective Faith	203
Modern Buddhism and <i>Bonreki</i> : The First Modern Buddhism	213
7. CONCLUSION	218
Modern Japanese Intellectual History and Buddhism	218
Semiological Approach to Intellectual History and Modern Japanese Intellectual History	223
Telling Another Allegory	228
ILLUSTRATIONS	232
GLOSSARY	282
Names	282

	Page
Terms (on Bonreki Theory)	287
Terms (others)	296
Titles	303
APPENDIX	308
1. Lineage of the Bonreki School	308
2. General Outline of <i>Bukkoku rekishōhen</i>	309
3. Classified List of <i>Yōkai</i> in Inoue Enryō's <i>Yōkaigaku kōgi</i>	317
BIBLIOGRAPHY	321

## CHAPTER 1

### INTRODUCTION

#### **Fumon Entsū and Bonreki**

An old man visited the Japanese Imperial Academy one day in the 1930's and requested a debate on the principles of astronomy insisting that the shape of the earth was not spherical, but flat. Officers of the Academy took him for a mad man and paid no attention to him. However, he refused to leave and continued to insist upon a debate. When one officer accepted his offer, he opened a paper and eagerly explained his theory of the flat worldview. While the officer considered the idea of the flat world ridiculous, he was amazed by the fact that the old man's theory was logical enough to be explained as an astronomical theory. The theory of this old man had its roots in a forgotten Buddhist thought movement of the early nineteenth century.<sup>1</sup> The main topic of this dissertation is to consider the meaning of this unique movement in Japanese intellectual history and its astronomical theory named *Bonreki* (Indian astronomy) by focusing on the works of its founder, a Buddhist monk, Fumon Entsū (1755-1834).

After studying various types of Buddhist teachings, Chinese thought, and modern Western astronomy, Entsū published his main work, *Bukkoku rekishōhen* (Astronomy of the Buddhist Country) in 1810, and started to preach the Bonreki. As evidenced by the fact that Entsū sometimes calls it *Butsureki* (Buddhist astronomy), the Bonreki was an astronomical theory based on the cosmological teachings in the Buddhist scriptures. There are various such teachings in the Buddhist scriptures, including the astrological teachings

---

<sup>1</sup> Satake Junnyo, ed., *Kinnō gohō Shingyō gakutō* (Kyoto: Daigyōjishi kankōinkai, 1936), 119-120.

of esoteric Buddhism. Entsū abstracted the essential factors from these teachings, which are mainly based on the ancient Indian worldview, and created a Buddhist astronomy.

Entsū made a comparative study of astronomical theories in Japan, China, Uighur (Islam), and the West (both the geocentric and heliocentric theories) and insisted that Indian (or Buddhist) astronomy was the origin of all these theories and, therefore, the most accurate. Moreover, he created a calendar system by calculating the revolution of the sun and the moon and following the astronomical teachings in the Buddhist scriptures. While he sometimes used arguments that strike us as contradictory or sophistic, Entsū basically tried to demonstrate the mechanism of astronomical phenomena, such as lunar and solar eclipses, in the context of the Buddhist worldview.

The world envisioned in the Buddhist scriptures is a flat world. At the center of this world, there is an enormous mountain, *Shumisen* (Mt. Sumeru), surrounded by nine mountain ranges and eight seas. Human beings inhabit one of the four islands, or continents, in the outermost sea and the sun and moon are orbiting around the Shumisen. The flat world is located on three discs or rings made of metal, water, and wind. This system represents one world unit. According to Buddhist cosmology, there are countless such units in the universe, and each unit emerges and collapses in each cosmic aeon. Entsū tried positively to demonstrate the existence of the one unit in which we live. In order to make his theory more plausible in his contemporary situation, he established a calendar system by calculating the movements of heavenly bodies. He even created a miniature mechanical model of the flat Shumisen world which could demonstrate the movements of the sun and the moon corresponding to his calendar system.

Since the *Bonreki* includes some interesting astronomical topics, such as the flat worldview and the horizontal orbits of the sun and the moon, some historians have examined the *Bonreki* as a curious topic in Japanese intellectual history. However, the purposes of the few studies made of the *Bonreki* were to introduce a strange reaction of traditional Buddhist cosmology against modern astronomy, and there is no full-scale study

and interpretation of Entsū's thought. The following articles are major works dealing with the Bonreki from this point of view:

Ito Tasaburo, "*Kinsei niokeru kagakuteki uchūkan no hattatsu nitaisuru handō nitsuite* [On the reaction to the development of the scientific worldview in the early modern period]" (1934)

Itazawa Takeo, "*Kinsei niokeru Chidōsetsu no tenkai to sono handō* [Development of the heliocentric theory and reaction to it in the early modern period]" (1941)

Yoshida Tadashi, "*Kinsei niokeru Bukkyō to seiyōteki shizenkan no deai* [Encounter of Buddhism and the Western view of nature in the early modern period]" (1986)

As reflected in the similarity of these titles, their contents and conclusions are almost identical. Their common perspective is to define the Bonreki as an allergic and curious reaction against heliocentric theory by people who believed in traditional Buddhist cosmology. They also consider the Bonreki in the context of a dispute between a Western spherical worldview and a Buddhist flat worldview called *Shumisensetsu ronsō* (the dispute on the Shumisen worldview), which started with the contradiction between the Buddhist worldview and the geocentric theory brought by Christian missionaries in the sixteenth century. Some general texts of Japanese history, such as Watanabe Toshio, *Nihon Tenmongakushi* (History of Japanese Astronomy, 1986), and many encyclopedias of Japanese history also deal with the Bonreki in a similar context.

Moreover, there are no profound interpretations of the Bonreki from perspectives of Religious studies and Buddhist studies. Hitherto, Entsū's Bonreki has been considered only in the context of the struggle between the persecution of Buddhism (*haibutsu*) and its defense (*gohō*). Even though Entsū and his followers established what was probably one of the most wide-spread Buddhist intellectual movements in the late Tokugawa period, there is no full-scale research focusing on Entsū's Bonreki.<sup>2</sup> Furthermore, in the general

---

<sup>2</sup> Kashiwara Yūsen, "*Kindai niokeru jōdōkan no sui*," in vol. 8 of *Ronshū Nihon Bukkyō shi* (Tokyo: Yūzankaku, 1987) deals with Bonreki as a struggle between the traditional worldview and the modern scientific worldview, which preceded the transformation of the idea of Pure Land in the modern period. However, this is a brief historical review of the transformation of Pure Land Buddhist teaching in the

texts of the history of early modern and modern Japanese Buddhism as well, the Bonreki is simply regarded as a fundamentalist reaction by people who believed in the traditional Buddhist worldview. The Bonreki's meaning within the construction of modern Buddhist discourse is hardly mentioned.

### **Bonreki and History of Japanese Religious Thought**

An accidental discovery of the publications of Entsu's works in the library of Taisho University was the beginning of my study of Fumon Entsu and Bonreki. Most of them were piled up at a corner of the library stuck covered with dust. Some of them were not even in the library catalogue.<sup>3</sup> The condition of these texts seems to represent the fact that almost nobody pays attention to Entsu's original thought itself, while many general textbooks of Japanese intellectual history and the history of Japanese Buddhism take up *Bonreki* as a curious topic of early modern Japanese intellectual history. By looking at Entsu's works more precisely and studying his theory more carefully, I found some inconsistencies in the stereotyped understanding of the Bonreki.

First of all, I was interested in the contradiction between Entsu's Bonreki and other fundamentalistic Buddhist reactions to Western astronomy. Following the full-scale introduction of the Western astronomical theory in the eighteenth century, there emerged various types of Buddhist reactions featuring the flat worldview of Buddhism against the Western (or Christian) worldview (especially against the idea of a spherical earth). Even though the stereotyped understanding normally identifies Bonreki with these fundamentalistic reactions of conservative Buddhists, there are significant differences between them.

---

modern period, and it hardly mentions Entsu's thought. Kudō Kōkai, "*Fumon risshi no Bonreki undō to shino ryakuden*," *Meiji shōtoku kinen gakkaihō* 56 (1941) is the only work interpreting Entsu's thought in the context of Japanese intellectual and social history. Kudō's work which is based on detailed investigation is a great historical source for Entsu's life. In this article, Kudō insists that the main purpose of Entsu's Bonreki was to promote *sonnō jōi* (reverence of emperor and expulsion of foreigner). But his nationalistic understanding of Entsu's thought includes some inconsistencies with the actual shape of Bonreki.

<sup>3</sup> Entsu's works have never been published in the modern period and the only way to access his thought in the original texts is to find publications from the Edo period held by some libraries in Japan.



In the preface of his main work, *Bukkoku rekishōhen*, Entsū indicates the three major purposes of the book:

- 1) To refute evil theories and to protect Buddhism by showing the Buddhist worldview in the holy teaching (Buddhism).
- 2) To prove that all astronomical theories in various countries are originally based on *Bonreki*.
- 3) To complement the missing teaching of Buddhism, by introducing *Bonreki*, which has never been introduced into Japan <sup>4</sup>

The first two might correspond to the stereotyped understanding, but according to the third one, *Bonreki* is a new theory which was never introduced into Japan. Thus, what Entsū attempted was not to defend the traditional Buddhist worldview in a traditional sense, but to create or introduce a new theory. Entsū was also critical of the previous fundamentalist reactions against Western astronomy, because of their lack of astronomical knowledge. Moreover, Entsū's *Bonreki* was criticized by his Buddhist fundamentalist contemporaries, because his theory relied too much on scientific theory. People who study *Bonreki* have neglected this contradiction between the *Bonreki* and other Buddhist fundamentalist theories, because all of them deal with the same subject: the flat worldview of Buddhism. However, Entsū's technical terms, concept, and the structure of argument are actually more similar to those of the radical intellectuals in Entsū's period.

Secondly, I found some articles by modern Buddhists that expressed sympathy toward *Bonreki* and considered the work of Entsū's followers to be a reconsideration of the meaning of the Buddhist worldview from a modern perspective.<sup>5</sup> Many works that studied the astronomical theory and the Buddhist worldview in the Buddhist scriptures in the modern period used the works of Entsū and his followers as a model for these studies, and in fact, their works are considerably similar to Entsū's *Bonreki* theory. Indeed, Entsū's model of the Shumisen world became a basic model of the pictorial explanation of the Buddhist worldview seen in modern Buddhist works and Buddhist encyclopedias. As an

---

<sup>4</sup> Entsū, *Bukkoku rekishōhen*, vol. 1 (1810), 1.

<sup>5</sup> For example, Kimura Taiken, "Sada Kaiseki shi no Shijitsu tōshōron," *Shukyō kenkyū* 1.

explanation of astronomical theory and Buddhist worldview as revealed by the Buddhist scriptures, the results of Entsū's Bonreki theory were as good as those of modern Buddhology. Entsū claimed both the absolute value and the scientific validity of the Buddhist worldview in the Buddhist scriptures, on the point, it is different from the explanation of the Buddhist worldview in the contemporary works of Buddhism. However, Entsū's Bonreki theory preceded the modern Buddhist explanation of the Buddhist worldview in many aspects.<sup>6</sup>

Hitherto, the Bonreki has been studied by focusing on its contradiction to the modern scientific worldview and to the later development of modern Buddhism. However, studying Entsū's original text and its surrounding discourse in detail, we can easily realize that regarding Entsū's Bonreki as simple traditionalism that opposed modern Buddhist and scientific discourse is inappropriate for a proper understanding of the Bonreki. In order to reconsider an inconsistency in the stereotyped image of the Bonreki, we need to change our basic perspective for studying the Bonreki in terms of intellectual history.

In an article titled "*Content in the Text: Method and Ideology in Intellectual History*," Hayden White proposes that it requires a "translation" to convert historical documents to meaningful historical documents, and classifies four types of intellectual history by focusing on the linguistic model adopted by the historian in order to make the above mentioned translation possible. White explains these four types as follows:

There are at least four ways to construe the relation between language and the world of things. Language can be taken to be (1) a *manifestation* of causal relationships governing the world of things in which it arises, in the mode of an index; (2) a *representation* of that world, in the mode of icon (or mimesis); (3) a *symbol* of the world, in the mode of an analogue, natural or cultural-specific, as the case might be; (4) simply another among those things that populate the human world, but more

---

<sup>6</sup> Entsū's Bonreki theory has never been studied in the context of the development of modern Buddhist or religious discourse in Japan. Okada Masahiko, "*Kindaika to dentōteki sekaikan: Entsū no shumisensetsu yōgoron wo megutte*," *Shūkyō kenkyū* 291 (1992) is almost the only work which indicates the significance of the Bonreki theory for considering the later development of modern Buddhism focusing on the three points of arguments. The basic project of this dissertation also started with this article.

specifically a *sign system*, that is, a code bearing no necessary, or "motivated," relation to that which it signifies.<sup>7</sup>

Type (1) is a typical discourse of Marxists and social determinists in general, and Type (2) is the discourse adopted by the philological method of the older generation of intellectual historians, such as Spitzer and Auerbach. Type (3) is the basic discourse of the whole enterprise of *Geistesgeschichte* (history of ideas). All of them presuppose a "natural" relation between language and the world of things, though they respectively take a different form of relation, such as causal, mimetic, and analogical. Besides these types of intellectual history, White introduces the fourth type, "a semiological approach to the intellectual history" that is based on the Saussurian theory of language as a sign system. According to White, this approach is not a content-oriented intellectual history that presupposes a substantial meaning of text, but an intellectual history as an analysis of "discourse" within a particular social and historical condition or an analysis of "ideology of form."<sup>8</sup>

This semiological approach to intellectual history also provides us with a significant insight into studying the Bonreki in terms of the modern Japanese intellectual history. For example, this perspective is useful for considering the intrinsic relation between the

---

<sup>7</sup> Hayden White, *The Content of the Form: Narrative Discourse and Historical Representation* (Baltimore: Johns Hopkins University press, 1987), 189.

<sup>8</sup> However, the concentration on "form" here should not be identified with the structuralistic investigation of the deep structure of the discourse. Although he features "Saussurian theory of language," what White discusses here is the theory of sign system that "stands at the basis of both Structuralism and post-Structuralism" (White, *Content of Form*, 189). Needless to say, an epistemological shift from "substantial" meaning to "relational" meaning brought by Structuralism is held in White's theory also as an analysis of the form of discourse that does not presuppose a "natural" relationship between language and the world of things. However, unlike a simple form of Structuralism, White's semiological approach to intellectual history is not to analyze the variation of discourse as a variable of the universal geometrical formula. For him, the discourse is not a discourse as a narrative structure (*fabula*) that is completed within the text and opposes story (*sujet*), but a discourse as speech in a particular historical and social condition. The object of discursive analysis in this context is, therefore, a rhetoric of discourse and a medium of expression or a conventionally acquired way of expression. This conventionally acquired way of expression also restricts the form of discourse at the unconscious level, just because it is conventionally acquired. However, this is not to reveal an unconscious deep structure of discourse that is represented by an abstract formula that is an object of a structuralist analysis. This is an attempt to reveal a historically and socially conditioned framework of expression that could be located at the middle point of an unconsciously formulized deep structure and a consciously explained substantial meaning. Unlike the Structuralist analysis of text that explains everything within the text, therefore, the historicity of text, that is, the relation between the text and the outside of the text becomes a significant issue for White's discursive analysis. In this context, the intellectual history is reconstructed not as a history of the produced meaning, but as a history of the process of the meaning production.

**Bonreki and the other astronomical theories that adopted the modern scientific worldview in the same period. The intellectual condition of the late Edo and the early Meiji periods has normally been approached by focusing on the contradiction between the thought movements within different intellectual traditions. Especially in the case of Buddhist thought, there is a firm scheme that features the traditionalist reaction to the persecution of Buddhism by the scholars of other intellectual traditions who had accepted modernity.**

**In the studies of the Bonreki movement too, therefore, the fact that the Bonreki movement tried to preserve the flat Buddhist worldview against the idea of the spherical earth of the modern scientific worldview has been a focus of argument. But according to the perspective which focuses on the form of discourse, the difference of the subject, such as the difference between the flat Shumisen world and the spherical earth, no longer stands as a principal basis of classification. In this context, the difference and similarity not at the level of the subject, but at the level of discourse becomes the main concern for considering the relation between the Bonreki theory and its contemporaneous cosmographies. We can now consider the relation between the Bonreki theory and modern scientific theory from a perspective different than that which just focuses on the opposition between them.**

**In his analysis of the historical development of the discourse on the idea of wildness in the European history, for example, Hayden White says as follows:**

**What I shall finally offer, therefore, will look more like an archeologist's cabinet of artifacts than the flowing narrative of the historian; and we shall probably come to rest with a sense of structural stasis rather than with a sense of the developmental process by which various ideas came together and coalesced to produce the Noble Savage of the eighteenth century. What I provide here is little more than the historian's equivalent of a field archaeologist's notes, reflections on a search for archetypal forms rather than an account of their variations, combinations, and permutations during the late medieval and early modern age.<sup>9</sup>**

---

<sup>9</sup> Hayden White, *Topics of Discourse: Essays in Cultural Criticism* (Baltimore: Johns Hopkins University Press, 1978), 150-151.

The object of intellectual history as a history of discourse is to reconstruct a genealogy of the specific form of discourse and to analyze its structural stasis.<sup>10</sup> Following this perspective, the classification focusing on the differences in the intellectual traditions, such as the history of Buddhism, Shintō, or Confucianism, too, is no longer a solid basis of categorization. Because the focus of analysis in this context will be not on the development of a certain type of doctrine, but on the common discursive mode shared by the works of various doctrines in a particular historical and cultural condition. From a perspective seeking a common code, rule, or convention that restricts the form of narrative discourse, we can consider another dimension of intellectual history focusing not on the contradiction between intellectual traditions, but on a common discursive ground shared by works in various intellectual traditions.<sup>11</sup> It also becomes possible to consider the differences between the Bonreki and other Buddhist fundamentalist reactions to the modern scientific worldview from this perspective, because the cosmographies sharing the same subject, such as the flat worldview of Buddhism, can be classified as different cosmographies that have different narrative structures. By shifting the focus of analysis from content-oriented intellectual history to the semiological approach to intellectual history, therefore, we could

---

<sup>10</sup> In this work, for example, he traces the historical process in which two types of discourse on wildness and civilization (divine/natural antithesis and natural/artificial antithesis), which had been within the European intellectual tradition, were turned into a contradiction between socialized consciousness and internalized wildness in the modern period. The basic strategy covering the entire argument here is to focus on the discursive form, and in the analysis of the process of the modern internalization of wildness, the works of Marx, Nietzsche, and Freud are discussed not featuring in the difference of their subjects, but focusing on their discursive similarity. As the structural analysis of the folk tale frequently do, the structuralist development of the discursive analysis normally ends up with the discovery of the simplest universal structure. In this context, any cultural and historical variation cannot but be considered as a variable of the basic structure. On the point that White analyses the historical variations of discursive form by presupposing an archetypal form, his analysis in this article is similar to ordinary structuralist analysis. As long as we work on an analysis of "discourse" (as opposed to "story" or "subject"), we cannot escape this kind of abstraction in some degree. However, the significant issue of our discursive analysis in this dissertation is the process of meaning production in a particular social, cultural, and historical condition. The relation between the patterned narrative structure and the historical and cultural context that produced a certain narrative structure becomes an object of analysis in this context.

<sup>11</sup> However, this is not an attempt to clarify a spirit (or commonsense) of the period (*Zeitgeist*). Students of Japanese intellectual history have sometimes confused the commonsense of the period with the common discursive ground of the period. William LaFleur's *The Karma of Words* (1983) is an eminent example confusing the study of the spirit of the period, such as the works of Watsuji Tetsurō (Watsuji 1992), with the study of the deep discursive structure of the period represented by the conventional code and basic tropes of discourse, such as the works of Michel Foucault (Foucault 1970).

find a way to solve the inconsistencies of the stereotyped understanding of the Bonreki movement, such as the curious commonness between the Bonreki theory and its contemporaneous astronomical theories, and the strange opposition between the Bonreki theory and the other fundamentalist preservation theories of the Buddhist worldview.

Moreover, the semiological approach to intellectual history focusing on the form of discourse is highly effective for determining whether the Bonreki movement was a modern or traditional Buddhist intellectual movement. The fact that all Buddhist cosmographies deal with the flat worldview of Buddhism called *shumikai* (the Shumisen world) means that they are identical at the level of their subject. In this context, Entsu's cosmography must be a successor to the traditional Buddhist cosmography and the meaning of the Bonreki movement must be considered a fundamentalist reaction of traditionalism against modernity. As a typical example of this perspective, Itō Tasaburō explains the historical meaning of the Bonreki movement as follows:

Looking back on the process of the study of the Bonreki movement, we can find the following fact. That is, the starting point of Eastern philosophy has been the idea of the respect of heavenly will (*keiten*) since ancient times. All religious thoughts that became popular in Japan, such as Confucianism, Buddhism, and Shintō, held this idea. Especially the early modern Japanese thoughts had a clear teleological cosmology following the development of Confucianism. However, since the importation of Western natural science fundamentally disturbed this conventional thought, here "the reaction of the old thought" was brought out. Aggressive activity was continued in order to preserve the holy heaven, the principle of yin and yang and the five natural elements, the ruling power of the sun, the moon, and the stars over human fate, and the highly systematic order of the heavenly bodies having the same structure as that of the social structure, from a surgical knife of science.<sup>12</sup>

However, the Shumisen worldview was not depicted as a "teleological cosmology" in Entsu's Buddhist cosmography, although it described the flat Shumisen worldview. Entsu's Bonreki theory, which was constructed as an oppositional theory to modern Western astronomy and geography, used the explanatory method of these modern sciences,

---

<sup>12</sup> Itō Tasaburō, "Kinsei niokeru kagakuteki sekaikan no hattatsu ni aisuru handō nitsuitei," *Shūkyō kenkyū* 11 (1934), 88.

and the Shumisen world system was explained in the same way as those of modern science. Entsū's cosmography of the flat Shumisen world was described as a scientifically explainable flat world system, and this flat world system was explained not as a "teleological" system of the world, but as a scientifically explainable system of the world.

For example, Figure 1 is the image of the Shumisen world from Entsū's *Bukkoku rekishōhen*. In this picture, the Shumisen and other mountain ranges are depicted as corresponding to the numerical measures from Buddhist scriptures and the world is depicted as a replica of reality in the sense of modern realism. Figure 2 is a blueprint of a miniature model of the Shumisen world (*shumisengi*) created by Entsū. Entsū created this model to demonstrate that the flat Buddhist worldview better fit the scientific explanation of natural phenomena and the models of the sun and the moon moved corresponding to Entsū's calendar system. These images are a kind of scientific representation using numerical measures and the calendar system found in the Buddhist scripture as a data base. As Entsū himself declares in the introduction to his *Bukkoku rekishōhen*, this conceptualization of the Shumisen world as a scientific replication of reality was an invention of Entsū that had never existed before.

The traditional Buddhist cosmographies before Entsū's Bonreki theory also depicted the image of the Shumisen world as a representation of the real world, but they did not adopt the modern scientific characterization of the world that required objective explanatory methods. However, Entsū created a geographical worldview using the methods (not concepts) of modern astronomy and geography. The world conceptualized by this technique is no longer the same as the previous one. In the case of Entsū's work, the image of the Shumisen world is regulated by its numerical data base and there is no room for the "unreal (or imaginary)" in this geographical picture. There is no hell and heaven as a realm beyond scientific reality. While Entsū's image deals with the flat worldview of Buddhism, the characteristics of the world (not the shape of the world) represented by this image are closer to that of the modern scientific worldview than that of the traditional Buddhist

worldview. In his model, we can see the Shumisen world originally observed by Buddha's spiritual eye with the naked eye. As long as we focus on the discourse of Entsū's model of the Shumisen world, therefore, the teleological cosmology was already lost in Entsū's cosmography. If the traditional religious worldview were always a teleological cosmology as Itō mentioned, it should be said that Entsū's model was not a traditional worldview, but rather a modern worldview when seen at the level of their rhetorical devices. The problem of the simple determination of Entsū's Bonreki as a traditionalist reaction to modernity is revealed on this point.

Entsū's Bonreki theory was a theory constructed for the verification of the substantial existence of the Buddhist worldview, just as the modern scientific theory supported the substantial existence of the modern scientific worldview. The fundamental project of the Bonreki theory was to produce a general theory of Buddhist astronomy by using the geographical and astronomical statements in the Buddhist scriptures as a data base and applying the modern scientific explanatory method to this data. It is actually a discursive characteristic of modern Buddhism to reconstruct Buddhist thought in terms of modern scientific and philosophical discourse. By the fact that it shared a similar discursive mode with the modern Buddhism that developed later, Entsū's Bonreki theory was a very early attempt of the modern Buddhism.

Focusing on the discursive relation between the Bonreki movement and modern Buddhism, in this dissertation, I would like to refigure the meaning of this unique intellectual movement in the history of modern Japanese religious thought. Moreover, analyzing in detail the discourse of the Bonreki as the first instance of the modern Buddhism could lead to reconsidering the meaning of modern Buddhist or religious discourse in its early form. On this point, Entsū's Bonreki theory has more significant meaning for the study of the history of Japanese religious thought than used to be thought. By seeking a perspective for overcoming an inconsistency in the stereotyped understanding of the Bonreki that was created in the conventional style of intellectual history, I would like



to find a new perspective for studying the early modern and modern Japanese intellectual history.

### **Structure of the Text**

This dissertation consists of five chapters, but it may also be divided into three parts. The first part corresponds to Chapter 2. This will be a reconsideration of the relation between Entsū's cosmography and other cosmographies in the same period based on a rhetorical analysis of each cosmography. Contrary to general Japanese intellectual history, I will focus not on respective intellectual traditions, but on a common discursive mode synchronously shared by various cosmographies. Following the introduction of heliocentrism, there emerged various cosmographies in Japan around the year 1800. While they developed their theories in terms of their intellectual traditions and they conceptualized shapes of the world which are sometimes contradictory, they shared a method for explaining their worldview. All of them explained the world as an objective system ruled by universal laws, and all of them regarded the correspondence to numerical measures and a calendar system as of supreme importance for depicting the image of the world, whether its shape was flat or spherical. This shift in explanatory method also represents a shift in the characterization of the world, because the world represented by this method could not rhetorically include the unreal or imaginary realm of the world that had been highly significant in the previous cosmographic discourse. By focusing on the rhetorical mode of these cosmographies that emerged in various intellectual traditions at the same time, I will try to find a shift in the common ground of thought that emerged in the late Tokugawa period.

In the second part that consists of Chapters 3, 4, and 5, I will introduce Entsū and his follower's basic theory and activities and reconsider the historical meaning of the Bonreki. In Chapter 3, I will describe Entsū's astronomical theory based on his main works. In order to avoid a stereotyped image of Entsū and his Bonreki theory, I would like to clarify

his basic thought from his texts themselves. Since there is no detailed and systematic analysis of Entsū's Bonreki theory in both Japanese and English, this will be an introduction of new material for the study of the history of early modern Japanese thought.

In Chapter 4, I will try a rhetorical analysis of Entsū's writing of the Shumisen world and consider the historical meaning of this unique cosmography in comparison with the other Buddhist cosmographies. Focusing on the shift in the rhetoric for writing the Shumisen world that started with the dispute with Jesuit missionaries in the sixteenth century and that was drastically changed by Entsū, I would like to examine a historical shift in the conceptualized characteristics of the Buddhist worldview.

In Chapter 5, I will consider the historical meaning of Entsū and his followers' intellectual movement called *Bonreki undō* (the Bonreki movement). Entsū's *Bonreki* was accepted by many people in his period, especially Buddhist monks, and his followers established a school called *Bonreki kessha* (the Bonreki school). Studying the emergence, development, and sudden disappearance of the Bonreki school, and considering the historical meaning of the silences before and after the Bonreki, I will try to clarify the characteristic of the Bonreki as a transitional discourse that clearly indicates the epistemological rupture between the periods before and after the Bonreki. The sudden emergence of the Bonreki indicates its newness and the sudden disappearance of the Bonreki shows us its similarity to the modern Buddhist discourse as well as its difference from traditional Buddhist discourse. Paying attention to how it happened as well as what happened, I would like to consider the historical meaning of this unique intellectual movement.

Moreover, partial translations of Entsū's works will be frequently introduced in the main text and attached at the end of dissertation as an appendix. There is no modern publication of Entsū's works in contemporary Japanese, and only a few libraries in Japan have the wood-block printing of Entsū's works. These original texts are almost

inaccessible for the general reader. It is therefore necessary to translate and introduce some of his works in order to show the credibility of my statements on Entsū's Bonreki.

The third part corresponds to Chapter 6. It will be a critical review of modern Buddhology and its definition of Buddhism. Closely examining the Buddhist cosmographies after the Meiji restoration (or after the Bonreki), I would like to find a common discursive mode shared by the various modern Buddhist theories. Starting with the examination of Inoue Enryō's *Yōkaigaku* (study of mystery) that eliminated the unreal or imaginary factors from Buddhist discourse in a similar way to Entsū's Bonreki, I will examine the cosmography of the students of the original Buddhism (*genshi Bukkyō*) and Kiyozawa Manshi's *Seishinshugi* (spiritualism) that is normally considered the establishment of so-called modern Buddhism. Focusing on the relation between the rhetoric that was used for writing the Buddhist worldview and the formation of modern Buddhist discourse, I will try to reveal a basic code that conditions modern Buddhist discourse and relativize its basic thesis, such as the separation between scientific knowledge and religious faith.

**CHAPTER 2**  
**SHAKING THE WORLD: EMERGENCE OF NEW COSMOGRAPHY**  
**IN JAPAN AROUND THE YEAR 1800**

After death there is neither hell nor heaven nor self; There is only humankind and things. In a world without gods, buddhas and demons, there are surely no mysterious and miraculous happenings.

—Yamagata Bantō, *Yume no shiro*.

**Introduction**

The emergence of heliocentric theory in the field of astronomy was one of the most serious challenge of modernity to traditional religious values. The conflict between heliocentrism and traditional cosmology may be seen to represent the struggle between modernity and tradition implicit in the notion of "Copernican revolution." In Japan, where the cosmology of both Confucian and Buddhist tradition viewed the world as flat, the encounter with the Western idea of a spherical earth and penetration of this spherical worldview into Japanese society was one of the most profound changes undergone in the process of modernization.

The responses to this spherical worldview, both negative and positive, and its eventual adoption have been central issues in modern Japanese intellectual history. The introduction of Western astronomy in the early modern period has been considered the beginning of a modernization of the traditional worldview and the adoption of the solar calendar system and its popularization in the Meiji period is regarded as a completion of this process. However, modernization of traditional worldview entailed not only a change in the

conceptualization of the world (from a flat to a spherical earth), but also a shift in the method of cosmographic discourse.<sup>1</sup>

David Harvey indicates a similar transformation in European consciousness in his analysis of the shift in geographic method: the shift from chorography to geography in the Renaissance period.<sup>2</sup> While both methods use visual representation to explicate their conceptualization of space, geography "actually represents the whole known world and its parts according to astronomical observations and fixed geometrical principles," while chorography "gives a pictorial 'impression' of a local area without regard to quantitative accuracy."<sup>3</sup> Along with this methodological change, the world of the everyday experience was also transformed. For example, a "place," which could be a total microcosm in itself, was replaced by a "space" which is only explicable in reference to a whole world system (such as a world map). Harvey says "Maps, stripped of all elements of fantasy and religious belief, as well as of any sign of the experiences involved in their production, had become abstract and strictly functional systems for the factual ordering of phenomena in space."<sup>4</sup> There is no fantasy in the modern characterization of space. This transformation of the characterization of space entailed in the methodological shift from chorography to geography represents a significant shift in the modern consciousness.

In a similar way, I would like to examine a transformation of the characterization of the world<sup>5</sup> in the modern consciousness in this chapter, by focusing on a methodological

---

<sup>1</sup> Cosmography or cosmographic discourse here means a counter concept to cosmology. This distinction is corresponding to German historicist's distinction between *Weltanschauung* and *Weltbild*, and therefore, the focus of our attention here would be not on what kind of worldview gave a meaning of life to people, but on how the cosmic system was described in a particular epistemological condition.

<sup>2</sup> David Harvey, *The Condition of Postmodernity* (London: Blackwell, 1990). Harvey's work is too much concerned with the economical factors in this transformation. However, the cause of the methodological shift is not my concern here. As an explanation of a change brought by modernization, his remark on the methodological shift in the field of geography still presents a useful perspective.

<sup>3</sup> Denis Cosgrove, "Mapping New Worlds: Culture and Cartography in Sixteenth-Century Venice." *Imago Mundi* 44 (1992): 66.

<sup>4</sup> Harvey, *The Condition of Postmodernity*, 249.

<sup>5</sup> In this case, I would rather use the term, "characterization of the world" than "signification of the world." Because, my object of study here is not an inner meaning of worldview and its function in a motivation of people's action (like Max Weber's *ethos*), but how the world appears in people's consciousness as an existential condition.

change in the cosmographic discourse of early modern Japan.<sup>6</sup> With the introduction of heliocentric theory, at the end of the eighteenth century and the beginning of the nineteenth century, there emerged various new cosmographic theories in Japan. Within "Dutch learning" (*rangaku*) movement, Shiba Kōkan published *Oranda tensetsu* (Dutch Astronomical Theory) in 1796 and introduced heliocentric theory to a mass audience. From 1802 to 1820, the Confucian thinker Yamagata Bantō wrote *Yume no shiro* (Place of Dream), in which he expressed a rationalistic and heliocentric worldview. Within the Nativist discourse (*kokugaku*), Satō Nobuhiro expressed a worldview that was both heliocentric and Japan-centered in his *Tenchūki* (Description of Heavenly Pillar) written in 1820's. And a Buddhist monk, Fumon Entsū, published *Bukkoku rekishōhen* (Astronomy of a Buddhist Country) in 1807 and created a Buddhist astronomical theory to prove that the Buddhist worldview is more plausible than the modern Western worldview as an explanation of astronomical phenomena.

Most treatments of early modern Japanese thought have focused on the opposition between the Buddhist and other intellectual movements, such as Confucian rationalism, Nativism, and Dutch learning, and emphasized the differences among these cosmographic theories and their positions in each intellectual tradition. In other words, the shape of the world treated in each theory and their differences have been a focus of argument. However, these studies have overlooked what these different cosmographic theories share at the level of methodological discourse: commonalities that reveal much about the characterization of the world in the consciousness of people at the time.

While each of these theories seeks to justify a particular traditional worldview (for example, the flat worldview of Buddhism and Japan-centered world structure of Nativism), they share a form of explanation that represents a significant departure from earlier

---

<sup>6</sup> In this case, "cosmographic theory" means broader field of study including various scientific fields like astronomy, geography, and physics. And by "cosmographic discourse," I mean a discursive field created by various contemporary cosmographic theories. In other words, "cosmographic theory" means a theory created by each individual and "cosmographic discourse" means a mode of thought shared by various theories.

cosmographic discourse. Formal theory sustained by calculation was now regarded as more plausible than intuitive understanding, and the old worlds, once filled with spiritual entities, were replaced by mechanistic systems. These new cosmographic theories, which emerged almost at the same time, represent a significant shift in the Japanese sense of what is real and how the real is to be determined. The transformation of people's consciousness as represented by this shift of explanatory method is a subject of this chapter.

By "consciousness" I mean the common ground of thought which conditions a mode of discourse in a certain historical and cultural climate.<sup>7</sup> However, with a strategy featuring a genealogical continuity of intellectual traditions and difference between them, it is hard to examine this shift in consciousness. In a project seeking the shift of common ground of thought in European history, Michel Foucault indicates that the attempt to clarify the common ground of thought is "not so much a history, in the traditional meaning of that word, as an archeology."<sup>8</sup> In this paper, therefore, I will examine the shift in modern consciousness "archeologically" by focusing synchronously on the common discursive mode shared by otherwise divergent cosmographic theories of the late eighteenth and early nineteenth century Japan. And in this study I will be more concerned with the methodological similarities between texts than with the biography of their authors or the genealogy of their respective intellectual traditions.

Moreover, even though the end of eighteenth century was the period in which Western scientific theory was introduced into Japan through the direct translation of its primary texts, I will rather focus on the reactionary cosmographic theories of Japanese intellectual traditions at the time. These reactionary theories, each of which drawn from their own

---

<sup>7</sup> In this sense, "common ground of thought" is a common discursive mode represented by a form of discourse and not identical with "commonsense," as an intellectual hegemony of the period (*Zeitgeist*). In order to clarify a shift in this common ground of thought, we should consider a historical "document" as a "monument," and archeologically or vertically (not historically or horizontally) gather up the traces representing a discontinuity between the preceding common ground of thought and that in the later period. Because the traces representing the common ground of thought often appears not in the content of historical document, but on the style or form of document (including non literal source), and it is frequently concealed in the tension and mutual effect between the contents of document.

<sup>8</sup> Michel Foucault, *The Order of Things: An Archeology of the Human Sciences*. (New York: Vintage Books, 1994), xxii.

cosmological traditions, represents a shift in the consciousness of the Japanese people more profoundly than the simple translation and introduction of Western scientific theory.<sup>9</sup> By focusing on the methodological mode of discourse, we can more clearly indicate a rupture and shift in modern consciousness than the genealogical approach of conventional Japanese intellectual history. Because a shift of the method for depicting the world is not a matter of what kind of intellectual hegemony determined reality, but an issue of what kind of framework determined the way to characterize the world.

### **The Introduction of the Heliocentric Theory: Shiba Kōkan's *Oranda tensetsu***

Although the Tokugawa government maintained a closed-door policy to foreign countries, Western scientific texts (almost exclusively Dutch texts) were translated into Japanese in the late eighteenth century and some of these scientific theories, representing a new type of knowledge, were openly circulated among the public. After the publication of the Dutch anatomy text, *Tafel Anatomia (Kaitai shinsho)* in 1774, public interest in Dutch learning drastically increased in various fields of study.<sup>10</sup> In the field of astronomy, geocentric theory, including the idea of a spherical earth, had been already introduced by Jesuit priests in the sixteenth century. However, due to the Tokugawa government's closed door policy and prohibition of Christianity, the direct introduction of Western theory was restricted and the available source for Western astronomy was limited to translations from Chinese texts. Yet a growing interest in Dutch learning produced direct translations of modern European astronomical texts. The translation of the Dutch astronomy text, *Tenchi nikyū yōhō* (A manual of the celestial and earth globes), by a translation officer of Nagasaki, Motoki Ryōei, in 1774 was the very first introduction of heliocentrism into

---

<sup>9</sup> There were, of course, many introductory works of Dutch learning which represented a shift of the sense of reality at the time. In this paper, I will deal with a work of Shiba Kōkan as a representative case.

<sup>10</sup> As an English introductory source of the development of Dutch learning in this period, see Donald Keen, *The Japanese Discovery of Europe, 1720-1830* (California: Stanford University Press, 1969).



Japan and had a great influence on the later development of Japanese astronomical theory.<sup>11</sup>

Shiba Kōkan, known as both a pioneer of Western style painting and an propagator of the heliocentric theory in Japan, published an astronomy text, *Orandatensetsu* (Dutch Astronomical Theory), in 1796 under the great influence of Motoki's translations from Dutch texts.<sup>12</sup> Kōkan, whose Dutch learning began with the study of Western painting, was interested in pictorial explication of the world in modern Western geography. He was especially attracted by the precision of Western painting's replication of natural phenomena and sought to put its methods to more practical use. In 1792, he wrote *Yochi zenzu* (Picture of the Earth) and published various world maps and geographical commentaries. Kōkan's interest in Western astronomy was inspired by a picture of a celestial globe brought by a Dutch trade ship. He drew a picture of this celestial globe (*tenkyū zu*), and published *Orandatensetsu* as a theoretical commentary to this picture.

This text introduced heliocentric theory to the Japanese public at large. As most translations of Dutch astronomical texts were restricted to the astronomy department of the Tokugawa government (*tenmon gata*) and not popularly circulated, Kōkan's *Orandatensetsu* is often considered the first work to introduce heliocentric theory to the Japanese people. However, Kōkan himself was not an astronomer nor even a translator of Dutch texts. He reconstructed and interpreted Western astronomical theory through translated texts and promoted it as a new paradigm. In this sense, Kōkan's *Orandatensetsu* was a reaction to the new scientific theory and intellectual condition in the Japan of his time and, therefore, his work is more suitable for the purpose of this paper than the works of other translators of Dutch texts of the same period.

---

<sup>11</sup> For the development of Japanese astronomy in the early modern period, see Watanabe Toshio, *Kinsei nihon tenmongakushi* (Tokyo: Kōseisha Kōseikaku, 1986).

<sup>12</sup> As a representative biographical study of Shiba Kōkan, Kuroda Genji, *Shiba Kōkan* (Tokyo: Tokyo Bijutsu, 1972) is an eminent work. For the study of Kōkan's life and works, Nakai Sōtarō, *Shiba Kōkan* (Tokyo: Atorie sha, 1942) introduces Kōkan's original works with a biographical explanation of these works.

In the introductory note to his text, Kōkan contrasts Western learning and traditional Japanese learning, and emphasizes the precision of Western astronomy. On the difference between the Western picture of celestial globe and that of Japanese astronomers, he says:

Countries in Europe (*oranda*) study natural science (*kakubutsu kyūri*) and do not produce idle talk, lies, and meaningless theory. They do not deal with immediate phenomenon, but consider the remote area and do not seek an immediate profit. (Their theories) are skillful and precise beyond those of other countries. Therefore, (Kōkan's) picture of the universe is based on this (Western natural science).<sup>13</sup>

He goes on to mention the characteristics of Western learning that distinguish it from traditional Japanese and Chinese learning. Kōkan first discusses the differences between Chinese characters and the Roman alphabet. For Kōkan, the Chinese character is an ideograph that itself conveys meaning that must be understood before a text can be studied. The Western letter in contrast is simply a phonetic sign that can allow any class of people access to the essence of a scholarly text. Kōkan also notes the difference in the direction of the writing systems of China and the West. Secondly, he criticizes the tradition in Japanese and Chinese thought regarding their own countries as the center of the world, writing that "Settling the center (of the world) from the sky, the countries under the equator line are the center. . . But people are fool and there is no winter season (there). . . Even though the place which is 30 to 40° away from the equator has the four seasons according to the change of temperature (and people are wise there), it is not located on the center of the earth."<sup>14</sup> Thirdly, he notes the differences between Western and Japanese or Chinese texts. According to Kōkan, in Western texts, what cannot be explained by letters is explicated by pictures. Therefore, letters and pictures have equal value. He contrasts Western picture with Japanese or Chinese and characterizes it as *shashinhō* (mimetic

---

<sup>13</sup> Matsumura Akira and others, eds., *Yōgaku jō*, vol. 64, *Nihon shisō taikēi* (Tokyo: Iwanami, 1976), 447.

<sup>14</sup> Matsumura, *Yōgaku*, 449.

writing) and emphasizes its practical significance with pictorial explications representing the movement of the sun in Western astronomy (Figure 3 and 4).

Kōkan, in his introductory methodological remarks, contrasts Western and traditional Japanese learning and advocates the superiority of the new paradigm to the old. It is interesting that while promoting the newness and distinctiveness of Western theory, many of his arguments in the main text were already well known in Japan.<sup>15</sup> Kōkan's exaggeration of the newness of his theory suggests the ideological characteristic of his text, which emphasizes the rupture between the preceding paradigm and the new system of thought.

In his introductory note, Kōkan divides astronomy (*tenmongaku*) into three branches: *seigaku* (study of stars), *rekisangaku* (study of calendar system), and *kyūri gaku* (physics). The contents of the main text also follows the order of this categorization. In the first part of the text, he discusses the shape of the earth and the law of gravity (Figure 5). He then shows the relation between the movement of the sun, the moon, and the earth and explains the mechanism of solar and lunar eclipses (Figures 6 and 7). As we can see in Figures 6 and 7, the basic theory that Kōkan uses here is geocentrism. Through illustrations of a geocentric universe (Figure 8) and Western style precision gauges (Figure 9), Kōkan explains the movement of the heavenly bodies. However, he also introduces the theory of Tycho Brahe and the heliocentric theory of Nicholas Copernicus (Figure 10 and 11). This leads to some theoretical confusion. While his main arguments are based on geocentric theory, Kōkan also tries to verify heliocentric theory. Therefore, he sometimes cannot solve inconsistencies in his theory by calculation and relies on pictorial explication. Moreover, his understanding of Western astronomical instruments was limited. Even though he depicts a precision gauge (Figure 9), there are some obvious mistakes in his

---

<sup>15</sup> The geocentric theory and the idea of spherical earth had already been introduced by Jesuit priest and Chinese astronomy text. Especially after the moderation of banned books in 1720, astronomy texts were more freely introduced into Japan and the revisions of official calendar system were made by mainly using Western astronomical theories.

commentary.<sup>16</sup> Such theoretical confusion and mistakes are the result of his blind trust in the pictorial image of Western theory.

This prioritizing of the visual image is characteristic of Kōkan's astronomical theory. As he suggests that the image in Western astronomy text and its logical theory have equal explanation value, Western style pictorial explication is not a representation of a certain worldview, but a scientific and mimetic replica of reality for him.<sup>17</sup> The pictures in Western astronomical texts represent the real figure of the universe based on a scientific observation. The universe is depicted as a mechanical system and there is no special and spiritual realm in these pictures. Kōkan also published the picture of the earth using the same method (Figure 12). This estimation of the pictorial image as a precise replica of reality and the representative materialization of worldview brought by this method represent a crucial shift of the common ground of thought in this period. Kōkan's belief that the modern map and picture of the universe are a scientific replica of reality was a basic presupposition shared by the other thinkers in this period.

A significant tool that made an image of the universe or earth a scientific replica of reality was calculation of numerical measures and calendar. Being supported by those calculations, the modern worldview could insist on its objectivity. Kōkan himself features the calendar system (*rekisan*) as one of the three branches of astronomy. Even though there are only a few comments on the calendar system in his text, the calculation of numerical values and the calendar system was significant for Kōkan, too. As represented by his theoretical confusion, he did not completely accept the heliocentric theory in *Oranda tensetsu*, but in his later work, *Kopperu tenmon zukai* (Pictorial Explanation of Copernican

---

<sup>16</sup> For example, Kōkan says that the range of the gauge is 90°. However, this is a gauge used to measure one sixth of a circle and therefore it should be 60°.

<sup>17</sup> However, as his theoretical confusion and mistakes suggest, Kōkan's picture of the world was based on a subjective motivation and in this sense, his Western theory was also an ideological production and a representation of a certain worldview. Even in the case of contemporary world maps, there is no completely precise replica of the world and every map cannot but be a symbolic image to some degree. On the narrative factors of the modern geography, see Trevor Barnes and James Duncan, eds., *Writing Worlds: Discourse, Text and Metaphor in the Representation of Landscape* (New York: Free Press, 1992).

Astronomy), published in 1808, Kōkan completely adopted the heliocentric theory. In *Kopperu tenmon zuaki*, he explains this process as follows:

All theories in this book comes from the western text translated by Mr. Motoki (Motoki Ryōei). When I read this text, it was really hard for me to understand *Kopperu's* (Copernicus) physics and heliocentric theory, though it was completely explained with images. Then I spent meaningless years. And I recently found its original text and finally began to understand it. However, without producing a celestial globe and measuring the numerical measures in the sky, I cannot say that I understand it. Therefore, in order to convince people who are skeptical to this theory, I write a pictorial interpretation of heliocentric theory and its model of universe, and draw the images of heavenly bodies in the solar system.<sup>18</sup>

Behind Kōkan's conversion from geocentric theory to heliocentric theory, there was a deeper understanding of theory and calculation in Western astronomy. Consistent calculation was a supreme value even for Kōkan.

The last half of the text is devoted to the introduction of Western physics. Kōkan presents physical explanations of natural phenomena such as the mechanism of rain and snow fall. Focusing on the circulation of air and water, he explains various natural phenomena as an objectively explainable system. Kōkan then uses modern physics to demystify traditionally mysterious phenomena. For example, he argues that will-o'-the-wisp is a psychological creation rather than a spirit of the dead. He also explains various cases of mysterious fire as natural phenomena and insists that there are no such things as ghosts and spirits. Kōkan also criticizes the Buddhist idea of rebirth (*rinne*) and concludes that every act of creation and destruction in the world (including human life and death) conforms to natural laws. Moreover, he denies the subjective cause of natural phenomenon and says that "physical body possesses the essence and law (of natural phenomena)."<sup>19</sup> This idea of the world as an objective system is also a prominent characteristic of the cosmographic theories of this period.

---

<sup>18</sup> Nakai, *Shiba Kōkan*, 167.

<sup>19</sup> Matsumura, *Yōgaku*, 485.

In this section I have focused on Kōkan's method of argument rather than on his introduction of heliocentric theory. The structure of Kōkan's text suggests his three basic methods for explicating the world: the visualization of the world as a scientific replica of reality, the estimation of calculation, and the explication of the world as an objective system. Kōkan tried to introduce these methods as a new paradigm. He closed the text as follows.

What people like and enjoy in their childhood completely changes in their adulthood. A child, who was raised in a city area, someday went to the suburbs with his parents and saw flying grasshoppers. He found them so pleasing that he gathered them. Even after he went home, the scene of hopping grasshoppers was still so real that he could not sleep all night. Thinking of this now, it is not so exiting. Looking at young people, they study what they should not study and learn what they should not learn. They never stop doing it and keep running very fast. This is like taking grasshoppers. Therefore, I write this book for that child. Why do I have to show it to sages. <sup>20</sup>

For Kōkan, people who study traditional learning are just like a child chasing grasshoppers. For a matured perspective of the new paradigm, traditional learning was meaningless just like children's play.

### **World without Mystery: Yamagata Bantō's *Yume no shiro***

Various new cosmographic theories emerged at the beginning of the nineteenth century in response to modern Western astronomy. One such theory was that of Yamagata Bantō, the Confucian thinker and author of *Yume no shiro* (Place of Dream). In this text often seen to represent the birth of the modern rationalism in Japanese intellectual history, Yamagata dealt with astronomical theory and advocated a modern scientific and heliocentric worldview. Yamagata was not only a famous Confucian thinker and member of a private Confucian academy, *Kaitokudō*, but also an Osaka merchant and the utilitarianism of the merchant is reflected in his rationalism.

---

<sup>20</sup> Ibid., 487.

Unlike Shiba Kōkan's *Oranda tensetsu*, *Yume no shiro* was a more personal and private text. Although written between 1802 to 1820, it was never published in his lifetime.<sup>21</sup> In this book, Yamagata introduced revolutionary perspectives in various fields of study including astronomy, geography, history, economy, politics, physics, and medical science, from a radically rationalistic point of view. The text consists of twelve volumes and cites hundreds of sources. I will here only analyze his basic perspective by focusing on his astronomical theory and its method of explanation. Yamagata is often considered a pioneer rationalist of early modern Japan, and, therefore, studies of his thought focus on its uniqueness.<sup>22</sup> However, when we focus on the method of explanation in his text, we can find many common perspectives that were shared by the other cosmographic theories in the same period.

In the introductory note of *Yume no shiro*, Yamagata clarifies his basic perspective as follows:

This text does not introduce the traditional arguments which have existed since ancient times, because I would like to let others work on them. Since this text introduces only newly invented theories and tries to correct errors of traditional common sense, I did not use the old theories. It is not because I like a curious thing.<sup>23</sup>

Of astronomical theory, he says that "in the sections of astronomy and geography, I first mentioned traditional theories with respect, but finally advocated heliocentric theory which is prohibited."<sup>24</sup> Yamagata adopted heliocentrism, which he learned from translated Dutch texts, as a new and better theory. In the other fields of study, such as history, politics, economy, and physics, he advocated new ideas which were completely different than

---

<sup>21</sup> However, many handwriting copies were made even in his period and affected on some revolutionary thinkers at the end of the Tokugawa period. Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō*, vol. 43, *Nihon shisō taikai* (Tokyo: Iwanami, 1973), 725-6.

<sup>22</sup> For example, Tetsuo Najita, *Visions of Virtue in Tokugawa Japan: Kaitokudō, Merchant Academy of Osaka* (Chicago: University of Chicago Press, 1987) deals with Kaitokudō and Yamagata Bantō as distinctive intellectual academy and thinker in early modern Japanese society.

<sup>23</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 147.

<sup>24</sup> *Ibid.*, 146.

traditional ones. Yamagata begins with statement that "this text should not be shown to outsiders"<sup>25</sup> and repeatedly mentions that these are personal musings. The theories that he advanced in this text so challenged the traditional theories and common sense of the period that he had to be sensitive to possible conflicts with the official opinions of the government. Buddhism in particular is severely attacked as representative of the old paradigm.

In the first volume of *Yume no shiro* titled *Tenmon* (astronomy), Yamagata introduces an astronomy influenced by modern Western theories. The first part is devoted to the introduction of his own calendar system. This calendar, titled *Kyōwa ninen reki* (the calendar of 1802), was a solar calendar based on the calendar of his master Nakai Riken (*Kashoreki*).<sup>26</sup> The calendars of both Yamagata and Nakai were based on the solar calendar (*tenreki*) introduced in the highly influential Chinese astronomy text of the period, *Tenkei wakumon*. The official calendar (*kanreki*) in this period was a lunar calendar and Yamagata explains the reason why he introduced a solar calendar as follows:

This calendar is the solar calendar system of *Tenkei wakumon*. It is different than the official calendar. However, there are many people who depend solely on the date and month on the lunar calendar, never consider the seasons, and miss the agricultural season. Therefore, I created this calendar to use in parallel with the official calendar, in order not to miscalculate the agricultural season.<sup>27</sup>

As we can see in Figure 13, the distribution of the dates in this calendar is similar to the contemporary calendar system. Yamagata put the date of the official calendar on the lower part in order to improve his calendar's utility. This concern with practical utility is a basic perspective of this text. The meaning of traditional Confucian thought and its astronomical theory are also evaluated in terms of its utility. Yamagata indicates the unreliability of the classical Chinese calendar and says:

---

<sup>25</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 146.

<sup>26</sup> On Riken's *Kashoreki* and its significance for studying Yamagata's epistemology and worldview, see Koyasu Nobukuni, "Nakai Riken aruiwa kinsei jusha chishikijin no sonzai to chi no isō," *Shisō* 848 (1995).

<sup>27</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 154.



It is a natural law of the heaven and the earth that things are gradually explicated day by day. Fukki did not know medicine and agriculture. Shinnō did not know character. Kōtei did not know the calendar. Why need there be shame in this. "We should say that we know what we know and we do not know what we do not know." This is a phrase from Confucius. Most of the things that people do nowadays are the things that people never did in the period of Confucius. Therefore, if we pick up each case, all of them are better than what Confucius did. Why need we avoid them. . . Western calendar eliminates the name of an era and the leap month and calculates the number of the dates in a month. It eliminates what should be eliminated and clarifies what should be clarified. There is nothing subjective in their method.<sup>28</sup>

Yamagata's basic goal was to avoid subjective explanation of natural phenomenon and to seek an objective and practical theory. Yamagata attaches importance to the precision of calculation as a basis of the objective and practical utility of the calendar and therefore adopts the solar calendar system based on Western theory.

In his introductory note to the calendar, he also criticizes the use of calendars for fortune telling:

Casual astronomers use the idea of the lucky and unlucky days to select the date of moving and marriage. Their harmful effects are excessive. Therefore, I do not mention the lucky and unlucky days.<sup>29</sup>

For Yamagata, the calendar is only a method for calculating the change of seasons and has exclusively practical meaning. Moreover, he criticizes the superstitious determination of the inauspicious days and says that "the sky is just simply moving."<sup>30</sup> For him, every day of the year is qualitatively equivalent as a part of the whole calendar system and the date itself has no specific meaning.

Later in the text, he more clearly explains the objective system of the world and rejects the subjective interpretation of natural phenomena. Yamagata first criticizes the prediction of rain in superstitions and traditional prayers for rain as meaningless. He then criticizes other traditional superstitions about astronomical issues one after the other. According to

---

<sup>28</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 157.

<sup>29</sup> *Ibid.*, 154.

<sup>30</sup> *Ibid.*

Yamagata, a shooting star is not a star, but a stone and it has nothing to do with one's destiny. Yamagata also discounts the significance ascribed to the directions by the Chinese geomantic tradition. He sees the sun, the moon, and the planets including the earth as "clearly just stars"<sup>31</sup> and their movements are dictated by systematic astronomy.

Yamagata explains the movement of the sun as a part of this system and gives a logical explanation for the natural phenomena relating to the movement of the sun. Moreover, he shows how to predict the solar eclipse by calculating the movement of the sun and criticizes the traditional understanding of the eclipse as superstitious. For him, every natural phenomena is a part of the objective system of the world and therefore, without mystery. Lightning strikes people not because of their personal deeds or sin, and everybody (whether virtuous sage or peasant) has an equal possibility to be struck by lightning.

Yamagata's science can at times seem radically blamed by today's standards. His understanding of the movements of the ocean tides, for example, runs completely counter to that of modern science (Figure 14). While the scientific theories of this period may be no more accurate than the traditional theory that they deny, our concern is less with their accuracy than with their mode of explanation. It is the methodology rather than the substance of Yamagata's science that departs so radically from previous theory.

Furthermore, Yamagata asserts that every meteorological phenomena is caused by geographical conditions and the systematic relation between the sun, the moon, the earth, and the other planets and explains this with illustrations (Figure 15 and 16). Change in the temperature, rain fall, season, and so on are shown to be nothing more than the result of the systematic movement of the heavenly bodies. For Yamagata, the world is an objective system and the role of the calendar is to precisely calculate the movements in this system for practical purposes. He reproduces a traditional local calendar and denies its conventional signification of the day and the season (Figure 17). For him, the change of the date and season is just the result of the systematic movement of the world. So in his

---

<sup>31</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 172.

discussion of being struck by lightning, Yamagata emphasizes that every natural phenomenon happens only accidentally (*gūzen*). This view of the world as an objective system is argued in more detail in the most famous volumes of this text titled *Muki* (no mystery, vols. 10 and 11): volumes that are often taken as representing the birth of modern rationalism in Japan.

Yamagata also explains the system of the universe with many pictorial explications. Here, he introduces the cosmographic theory of the Nativist thinker, Hattori Nakatsune (Figure 18). The ten pictures he reproduces are from Hattori's, *Sandaikō* (Examination of Three Major Heavenly Bodies), and they represent the shape of the world and the process of its creation according to Nativist scriptures, such as *Kojiki*. This worldview that regards the sun as the realm of heaven, the earth as the human world, and the moon as the world of the dead was further developed by Hirata Atsutane into a Nativist cosmology. While noting Motoori Norinaga's admiration of this worldview, Yamagata completely denies its validity and says that "there has never been a more ridiculous theory. Its knowledge is limited, but its foolishness is unlimited."<sup>32</sup> He next introduces the Buddhist cosmographic theory of the monk, Monnō, only to criticize it (Figure 19). The picture that he reproduces is from Monnō's, *Kusen hakkai kaichōron* (Apologetics of the existence of the nine mountains and eight seas) and it represents the basic worldview found in Buddhist scriptures. Yamagata again ridicules this theory and says that it "is not worth examining seriously. However, criticizing it can help to convert people who believe in Buddhism. Therefore, I show this picture to reveal their reckless teaching."<sup>33</sup>

According to Yamagata, the recklessness of Nativist and Buddhist cosmologies comes from the immaturity of ancient astronomical theory, and he criticizes the traditional Chinese texts for the same reason. He rejects the dome theory of the *Shūhisankei*, which represents

---

<sup>32</sup> Arisaka, *Tominaga Nakamoto Yamagata Bantō*, 196.

<sup>33</sup> *Ibid.*, 197.

the traditional Chinese worldview, and criticizes irrational statements found in classical texts (especially *Sangaikyō*). His basic perspective was that:

Everything relating to astronomy and geography has been revealed over time and today's discoveries reveal facts unknown to the ancients. The Shumisen theory in India, the theory of Japanese divine history, and ancient Chinese theories were all created before the development of astronomy and their theory dealt only with the place where they lived.<sup>34</sup>

In contrast to these false and ancient cosmologies, Western astronomy "never make any statement or draw a picture without actual examination."<sup>35</sup> Yamagata praises the accuracy of the Western astronomy as follows:

Western astronomers announce their theory only after measuring and examining its accuracy by visiting other countries. They build great ships, go to all countries, and correct their astronomical and geographical theories. Therefore, there are no false teaching like those of India, China, and Japan in modern Western theory. That is why we should trust it.<sup>36</sup>

With this trust in the accuracy of modern Western astronomy, he introduces his cosmographic theory based on that of the modern West.

As we can see in Figure 20, Yamagata adopts heliocentrism. He was one of the first people to do so in Japan and this fact has been emphasized by Japanese intellectual historians. However, in the early draft of *Yume no shiro* written in the first decade of 1800s, he still had reservations about heliocentric theory. According to Arisaka Takamichi, Yamagata's understanding of heliocentric theory deepened around 1810 and he came to accept the theory.<sup>37</sup> Yamagata's acceptance of heliocentrism corresponds to Shiba's conversion from a geocentric theory to a heliocentric worldview.

Yamagata presents the universe as an objective system, using pictorial explication and introducing the theories of translated Dutch texts (Figure 21). Although most of

---

<sup>34</sup> Arisaka, *Tominaga Nakamot Yamagata Bantō*, 198.

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> Arisaka Takamichi, "Yamagata Bantō no daiuchūron nitsuite," In *Nihon yōgakushi no kenkyū*, vol. 4 (Osaka: Sōgensha, 1982).

Yamagata's astronomical theories were drawn from Dutch texts, he also developed his own unique theory known as *Taiyō meikai no setsu* (Theory of the bright space of the sun), which divides the universe into the dark space (*ankai*) and the bright space (*meikai*). According to this theory, the solar system is just one of the numerous systems of the universe and the universe is considered an infinite space containing innumerable systems. Yamagata's pictures of *meikai* (Figures 22 and 23) represents this infinite universe. Using visual images as representing a reality was a primary characteristic of the cosmographic discourse in this period and it was shared by Yamagata, as well. Moreover, in these pictures of the universe, the earth is considered merely a part of a vast system with no center. Figures 24 to 27 represent the movement of the heavenly bodies seen from the surfaces of the moon, the earth, Saturn, and Jupiter. These figures illustrate how the visual image of the universe varies in form when viewed from the surface of different planets. This style of pictorial explication is also shared by his geographic theory, and in his second volume Yamagata presents the picture of the earth (Figure 28). He closes the first volume by predicting the existence of systems and planets similar to our solar system and earth elsewhere in the universe and by suggesting a possibility of the existence of the other forms of human life.

Yamagata's rationalistic theories have been considered distinct in the thought of the early modern Japan and it is true that he had very unique ideas. However, his basic methods of explanation, such as the visualization of the world system, the estimation of calculation, and the idea of the world as an objective system, are shared by the other cosmographic theories in this period and are not exclusive to Yamagata. In the following sections, I would like to examine the cosmographic theories of Yamagata's contemporaries within the two intellectual traditions (Nativism and Buddhism) that were criticized by Yamagata and consider the common mode of explanatory method that prevailed in this period.

### **Japan as the Center of the World: Satō Nobuhiro's *Tenchūki***

Satō Nobuhiro (1769-1850) was a Nativist thinker of the late Tokugawa period. Focusing on such practical issues as economics, agriculture, engineering, mining, and fisheries, he developed unique theories in various fields of study. His theories of agricultural politics and economics in particular were widely accepted after the Meiji restoration. Satō studied the practical and technological subjects of Dutch studies as well as Nativist cosmology with a founding figure of that tradition, Hirata Atsutane, and developed his own worldview that encompassed both of these traditions. This worldview was a reconstruction of European science in terms of the Nativist religious tradition of Hirata Atsutane.

*Tenchūki* (Description of Heavenly Pillar) is Satō's major text written between 1822 and 1825. In this text, Satō established a unique cosmographic theory incorporating modern Western astronomy. While he adopted modern astronomical theory including heliocentrism, he ascribed a religious meaning to these theories and reconstructed Nativist cosmology in terms of Western science. Satō became a student of Hirata Atsutane before writing this text and was strongly influenced by Hirata's Nativist theory. *Tenchūki*, which describes the creation of the world in its first volume and explains the system of the universe in the second volume, follows the form of Hirata's cosmographic text, *Tama no mihashira* (True Pillar of Spirit), and shares much of its basic perspectives. However, Satō's method of explanation was different than that of Hirata to a significant degree. There is a clear rupture between Hirata and Satō's methodology. This discontinuity in the explanatory method seems corresponding to a shift in discourse of plausibility of this period.

In the introduction to the *Tenchūki*, Satō presents the world as a system dominated by universal laws. According to the introduction, he studied various scientific theories in his life and found that the world was a moving system. However, while scientific theories can clarify the system of the world, they can for Satō never reveal the origin of that system and

its movement. He therefore studied various cosmogonic myths including those of Nativism and concluded that only Nativist cosmogonic myth completely corresponded to the scientific fact. He explains this process of discovery as follows:

By reading the divine history of Japan recently, I noticed that the origin of the revolution of the universe and the creation of all things was the divine work of our ancestor god, *Ubusuna no kami*, who stirred (the original matter of the universe). . After that, I read Motoori Norinaga's *Kojiki den*, Hattori Nakatsune's *Sandaikō*, and Hirata Atsutane's *Tama no mihashira*, and more precisely studied ancient theory. I then realized with a great pleasure that the law of the universe and its creation are solely based on *ubusuna no gen'un* (the principal movement created by *Ubusuna no kami*).<sup>38</sup>

According to Satō, *Ubusuna no Genun* is the origin of the world system and its universal law. He applied this basic perspective to all natural phenomena and insisted that there are the one great law (*ichidaikō*) and the four standard laws (*shiteirei*) that govern the system and movement of the universe. In the main body of the text, he explains these universal laws in greater detail.

He discusses his basic method of study as follows:

These one great law and four standard laws are the law of *Ubusuna no ōkami*'s creation of the universe and are the principles of astronomy and the calendar system. Having already discovered the creation of the world, I have revealed the true sentence and eliminated the annoying false statements of the pure classics. I then supplemented the factual lack (in the classic texts) with the idea of universal laws and created a great theory that has never been discovered before. I now entitle it *Tenchūki* and show it to my comrades.<sup>39</sup>

By combining his knowledge of modern Western astronomy with Nativist divine history, Satō develops his unique cosmographic theory in the main text.

*Tenchūki* is divided into two volumes. The first volume titled *Kaibyaku hen* (on creation) is devoted to the explanation of the creation of the world. He first refers to the various creation myth of China, India, Persia, Greece, Rome, the Bible, Egypt and Japan.

---

<sup>38</sup> Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro*, vol. 45, *Nihon shisō taikai* (Tokyo: Iwanami, 1977), 362-3.

<sup>39</sup> Shimazaki, *Andō Shōeki Satō Nobuhiro*, 363.

He concludes that there is no more plausible creation myth than that of Japanese classics (especially that of *Kojiki*) which corresponds to the real system of the universe and its creation. Satō grants that the Egyptian creation myth is somewhat more plausible than others, because its idea of the oval shape of the world corresponds to the oval shape of the earth and revolution of planets in modern astronomy. For Satō, correspondence with the modern astronomical theory is a primary criterion for adjudicating between creation myths. He adopted the perspective of modern Western astronomy and its heliocentric theory, but found no creation myth completely corresponding to the modern astronomical theory except Japanese creation myth (the oval shape of the world in Egyptian myth being the only exception).

By linking the creation myth of the Japanese classics with modern Western astronomy, Satō insists that the creation myth of the Japanese classics is the only one that corresponds to the scientific fact of the creation of universe. Therefore, while he unquestioningly accepts statements in the Japanese classics, his explanation of the world system is much like an introduction to modern astronomical theory and his method of explanation is close to those of Shiba and Yamagata.

Figure 29 represents a chaotic state before the divine force created the universe. At first, there was a mass of undifferentiated matter including what was to become the sun, the earth, the moon, the planets, and the stars. One day, the creation god, Ubusuna no ōkami, stirred this matter with the divine halberd (*ame no nuboko*) and the universe began to revolve. According to Satō, this is the creation of the universe. Matter remained at the center of rotation became the sun. Heavy matter were blown up and revolved at the edge of the universe, and light matter revolved along the inner circles. Satō calls this first movement created by Ubusuna no ōkami *gen'un* (principle movement) and considers it to be the universal law which dominates all movement in the world system. Following this principle movement, the world system was created and maintained as represented in Figure 30. Satō calls the law governing this process of creation the one big law (*ichidaikō*)



He further divides the one big law into the four standard laws (*shūteirei*). The first law known as *senkai* (rotation) states that all matter separated from the original matter must rotate around the original matter. The second law, known as *undō* (movement), states that everything separated from the original matter must make the original matter the center and turn around this center from west to east. The third law known as *chisoku* (speed) states that matter furthest from the original matter moves slowly and that matter closest to the original matter moves fast. The last standard law known as *keitai* (form) states that the matter separated from the original matter takes the form of the original matter. Satō claims that "these four laws are the precise system of the creation of the world and, therefore, they are the origin of astronomy and the calendar system and the foundation for the development of all things."<sup>40</sup>

Satō's theory places the sun at the center of the universe, from which the other entities are separated. Therefore, all planets and stars, which have the same shape and the same movement as the sun, revolve around the sun according to the original movement created by Ubusuna no ōkami. As we can see in Figure 30, the modern astronomy was the primary basis of his theory. Satō created this unique worldview by linking elements from ancient Japanese texts with modern astronomical theory. He claims that "The one great law of the creation of the universe and the four standard laws are my recent discovery and are completely new theory which has never been discovered before."<sup>41</sup> We should note that while his subject remained the traditional Japanese worldview, they were explained in terms of the new astronomical theory also adopted by Satō's contemporaries like Shiba and Yamagata. Therefore, while the content of his argument remained strongly fundamentalist, his methodology had much common with the perspective of other thinkers of the period. Satō's methodological shift away from other Nativist cosmographic theories (for example, Hattori and Hirata's) becomes more obvious in the text's second volume.

---

<sup>40</sup> Shimazaki, *Andō Shōeki Satō Nobuhiro*, 377.

<sup>41</sup> *Ibid.*, 379.

In the second volume titled *Gen'un hen* (on principle movement), Satō explains the world system in greater detail through the use of pictorial explication. He first explains the form and movement of the sun, Mercury, and Venus. Figure 31 represents the sun as seen with a telescope and sun glasses (*zongalas*). As we can see in this picture, his explanation of the shape and movement of the sun follows that of modern Western astronomy. Mercury and Venus are also explained in the same way. However, in his discussion of Venus, he mentions the unusual movement of Venus when it is seen from the earth and explains the origin of this by reference to the ancient Japanese myth. As we can see from this case, the theory and observations of modern astronomy are of primary value for Satō, but they are nevertheless discussed within the discourse of Nativism.

Figure 32 and 33 represent the revolution of Mercury and Venus which revolve inside of the orbit of the earth. Figure 33 is a pictorial explication of the unusual movement of Mercury and Venus in the sky. Satō explains this picture by saying that "When we see them (Mercury and Venus) from the earth, they sometimes retrograde from east to west. However, this does not contradict to the *Genun* (principle movement). They only appears to back and forth when they move against and following the revolution of the earth."<sup>42</sup> Here Satō's cosmographic theory is much like a simple introduction of modern astronomy. He esteems the observation and calculation of modern Western astronomy and cites them with conviction.

Figures 34 and 35 represent the relation between the sun and the earth. In Figure 34, Satō draws a picture of the orbit of the earth with numerical measures. The earth is shown to have an oval orbit that creates the change of the seasons. As mentioned above, Satō calls the rotation of the sun that governs the revolution of surrounding planets and stars *gen'un* (principle movement). As a distinct concept from *gen'un*, he calls the rotation of each planet *shiun* (autonomous movement). Figure 36 shows how fast the earth rotates. For Satō, every astronomical phenomena can be explained by the combination of *gen'un* and

---

<sup>42</sup> Shimazaki, *Andō Shōeki Satō Nobuhiro*, 390.

*shiun*. According to Satō, the only ancient teaching that mentions both *gen'un* and *shiun* and thus contains a true cosmogony is Japanese classics. As we can see from these pictures, Satō unquestioningly adopts heliocentric theory. Although Yamagata and Shiba had struggled over the adoption of heliocentrism twenty years ago, it had become the accepted view by the 1820s when Satō composed the *Tenchūki*.

Figures 37 to 42 explain eclipses in terms of the relation between the sun, the moon, and the earth. According to Satō's theory, the moon was separated from the earth in the same way that the earth was separated from the sun and the relation between the moon and the earth is the same as that between the earth and the sun. Moreover, he explains the system of the lunar and solar eclipses by entirely adopting modern astronomical theory. As we can see in these pictures, Satō's theories here is much like a simple introduction to modern Western astronomy. Indeed, there is little difference between Satō's explanation and modern Western astronomy in his time. Natural phenomena such as an eclipse is explained in terms of the systematic movement of heavenly bodies, just as in Yamagata and Shiba's theories.

Figure 43 represents the tidal system. The cause of the high tide and the low tide is explained by the movement of the sun and especially the moon. Compared with Yamagata's explanation of tidal ebb and flow, Satō's explanation is close to that of contemporary science. It is interesting that a cosmology of Nativist fundamentalist provides a more developed scientific theory than that of a renowned rationalist, Yamagata Bantō. In Satō's theory, too, natural phenomena are explained as a part of a world system created and governed by universal laws. In this sense, his perspective is close to that of early Western scientists who tried to identify universal laws of a world dominated by God.

Figures 44 and 45 explain the form and systematic movement of Jupiter and its four satellites and Figures 46 and 47 explain the form and movement of Saturn and its satellites. Even though he offers some mythical comments, his explanation of these pictures is a simple introduction to the astronomical theory in his period. Satō mentions Uranus, too.

Since the outer most planet mentioned in Shiba and Yamagata's astronomy was Saturn, Satō's mention of Uranus also represents the advantage of his astronomical knowledge over that of Shiba and Yamagata. In Figure 48, he explains the movement of comets and depicts the realm of the stars. As we can see in this picture and Figure 30, Satō's astronomical knowledge is not so different than that of Yamagata and Shiba. The pictorial explication of the world system shared by all three people are largely the same. Moreover, Satō also considers the world as an objective system dominated by universal laws. Satō's theory differs from the others only in that he reduces universal law to the work of the Nativist god, Ubusuna no ōkami. While exhibiting significant differences in content, their methods of explication have much in common, such as the use of pictorial explication as a scientific replica of reality, their high estimation of scientific observation, and their shared view of the world as an objective system.

This basic methodological mode differs from that of Satō's master, Hirata Atsutane, in some significant ways. The ten pictures cited as Figure 49 are from Hirata's *Tama no mihashira*. In these pictures, Hirata explained the creation of the world in terms of ancient Japanese texts, and Satō got many significant ideas from Hirata's text. However, while Hirata created his theory based solely on ancient texts and used the knowledge of Western astronomy to prove only supplemental explanations, in Satō's theory, the knowledge of modern astronomy takes precedence over the content of ancient texts. It is also significant that while Hirata's worldview attaches great significance to the world after death (*kakuriyo*), Satō's picture of the world shows no concern with the spiritual realm.<sup>43</sup>

Hirata Atsutane published *Tama no mihashira* in 1813 and Hirata's text reflects a far higher estimation of the Western scientific worldview than that found in Hattori Nakatsune's *Sandaikō* published in 1791 (Figure 18). Satō went far beyond Hirata's work

---

<sup>43</sup> For the role of the idea of the world after death in Hirata's cosmological theory, see Endō Tōru, "Hirata Atsutane no takairon saikō," *Shūkyō kenkyū* 305 (1995): 93-117. On the relation between Hirata's worldview and Satō's thought, Katsurajima Nobuhiro, "Bakumatsu kokugaku no tenkai to Satō Nobuhiro no shisō," in *Kinsei shisōshi kenkyū no genzai*, ed., Kinugasa Yasuyoshi (Kyoto: Shibunkaku, 1995) also indicates a discursive difference between Hirata's *Tama no mihashira* and Satō's *Tenchūki*.

and reversed the relation of priority between ancient Japanese teachings and modern scientific theory, representing a change in the consciousness of the age.

### **Substantiation of Illusion: Fumon Entsū's *Bukkoku rekishōhen***

Fumon Entsū (1754–1834) was a Buddhist monk of the late Tokugawa period. In the new intellectual climate he tried to create a Buddhist astronomy in response to that of modern science. After studying various Buddhist teachings, Chinese thought, and modern Western astronomy, he published *Bukkoku rekishōhen* (Astronomical Theory in a Buddhist Country) in 1810 and promulgated his unique astronomical theory, *Bonreki* (Indian astronomy). As indicated by the fact that Entsū sometimes calls it *Butsureki* (Buddhist astronomy), *Bonreki* was an astronomical theory based on the cosmographic teachings in the Buddhist scriptures. There are various such teachings in the Buddhist scriptures, including the astrological teaching of esoteric Buddhism. Entsū abstracted the essential factors from these teachings, which is largely based on the ancient Indian worldview, and created a Buddhist astronomy by combining these teachings with his knowledge of modern astronomical theory.

Hitherto, *Bonreki* has been viewed as traditionalist and reactionary religious response to the new scientific worldview of the age and the differences between *Bonreki* and the other astronomical theories of the period such as those of Shiba, Yamagata and Satō (or Hirata) have been emphasized. And indeed, while the other astronomical theories adopt heliocentrism, Entsū completely rejected heliocentrism as unreliable and insisted on the accuracy of the Buddhist worldview including the idea of the flat earth. Nevertheless, we can find many commonalities between *Bonreki* and the other astronomical theories in terms of their explanatory method. While Entsū rejects heliocentric theory, he rejects it by using the same discursive methods as his contemporaries. In this section, I will examine the commonalities between *Bonreki* and other cosmographic theories by focusing on their

explanatory method and consider a shift in consciousness of the age reflected on this change of discursive mode on methodology.

*Bukkoku rekishōhen*, consists of five volumes. In this substantial text, he tries to convince his reader that the flat worldview of Buddhism is a scientifically reliable explanation of astronomical events, such as eclipses and seasonal change. In his introduction, Entsū discusses his basic motivations as follows:

- 1) To refute evil theories and to protect Buddhism by showing the Buddhist worldview in the holy teaching (Buddhism).
- 2) To prove that all the astronomical theories in various countries are originally based on Bonreki.
- 3) To complement the missing teaching of Buddhism by introducing Bonreki, which has never been introduced into Japan.<sup>44</sup>

As we can see from the third item, Entsū claimed that his astronomical theory was completely new, though Buddhism had been a part of Japanese culture and society for over a thousand years. He tried to prove an accuracy of the Buddhist worldview within the current intellectual climate, "by introducing Bonreki, which has never been introduced into Japan." In other words, Entsū's basic project was to produce a new explanation of a traditional teaching in accordance with a contemporary intellectual context. He therefore uses methods of explanation common to contemporary discourse. In this sense, Entsū's perspective was close to that of Satō, who argued for the superiority of ancient Japanese texts by using modern astronomical theory. In this chapter, I will discuss Entsū's explanatory methods focusing on his use of pictorial explications.

Entsū divides the five volumes of his text into five chapters. In the first chapter, titled *Rekigen* (the origin of astronomy), he makes a comparative study of the history of astronomical theories in Japan, China, Uighur (Islam), and the West and insists that Indian (or Buddhist) astronomy was the original source for all these theories. In Chapter 2, titled *Tentai* (heavenly bodies), he introduces Chinese and Western astronomy (both the

---

<sup>44</sup> Entsū, *Bukkoku rekishōhen*, vol. 1., (1810), jo-1.

geocentric and the heliocentric theories) and compares them with Indian astronomy. Figures 50 and 51 represent his understanding of Chinese astronomy and Figures 52 and 53 are his introduction to modern Western astronomy. According to Entsū, Figure 52 represents the theory of Copernicus and Figure 53 represents that of Tycho Brahe. At the end of this chapter, he concludes that Chinese and Western theories are an empty theory, based on hypothesis, while Indian astronomy discovered through the spiritual sight of the saints is far superior. For Entsū, the scientific observations from the earth are of limited value and theories based on hypothesis and human knowledge are no match for the spiritual knowledge contained in the Buddhist scriptures.<sup>45</sup> The conclusions of the first two chapters are fundamentalistic statements. However, by featuring the astronomical theories introduced in his first two chapters, Entsū also develops his own abstract astronomical theory featuring pictorial explication.

The third chapter is titled *Chikei* (shape of the earth). Entsū first discusses the dome theory of the traditional Chinese astronomy and argues for the flat worldview of Buddhism by pointing out the similarity between these two theories. He then introduces and criticizes the idea of a spherical earth and the Western astronomical theories that support it. The main point of his argument is that abstract Western theory does not accord to the earth's actual mass (*genryō*). While there are some curious attacks from today's point of view, most of Entsū's arguments are logical criticisms based on numerical calculation. Entsū, for example, criticizes the numerical accuracy of Western astronomy and attacks its measurement of the perimeter of the earth. According to Entsū, the perimeter of the earth according to Western astronomical theory is 90,000 ri (1 ri is approximately 4 km). He says that if this is so, "the spherical earth theory is completely inconsistent with the earth's actual mass,"<sup>46</sup> and defends this claim through pictorial explication and calculation (Figure 54). If the perimeter of the earth is 90,000 ri, the diameter would be 28,647 ri and the

---

<sup>45</sup> Entsū, *Rekishōhen*, vol. 1., 29-31.

<sup>46</sup> *Ibid.*, vol. 2, 36.

radius is almost 14,324 ri. According to Entsū, this radius is the height from horizontal center line to the highest point of the vertical line in Figure 54 and the distance between an end of the horizontal line and an end of the vertical line is almost 22,500 ri (1/4 of the perimeter). If we divide both numerical values by 100, the height from center line to the top is 1.15 ri and the distance from one end of the line to the other end of line is 2.9 ri. Entsū insists that the slope created by this height and distance would be too steep for people to stay on the surface and says that "the water of the sea will cascade like a great water fall."<sup>47</sup>

Entsū also refuses the vertical orbit of the sun and the moon of Western theory and argues for the horizontal orbit of the sun and the moon in the Buddhist astronomy. According to Entsū, if the sun and the moon move vertically, the surface of the earth against the sun cannot be bright until the sun move toward the upper half of the orbit. It is particularly obvious at the top of a high mountain on the other side of the earth. (Figure 55). However, the morning sun light is normally seen faster at the top of high mountain than on the ground. By citing many examples supporting this fact, Entsū tries to verify a superiority of the flat Buddhist worldview over the idea of the spherical earth. In Figure 56, Entsū insists that the idea of a flat world and the horizontal orbit of the sun and the moon can explain real phenomenon better than the idea of a spherical earth, explaining the reason why the morning sun light can be seen earlier at the top of high mountain.

In both examples, Entsū ignores the existence of gravity and presupposes the top and bottom of the earth. Although this argument may appear sophisticated by today's standards, his explanatory method was in accord with the scientific discourse of his age. Entsū used methods common to contemporary cosmographic discourse to develop a picture of the earth that argued for the plausibility of a Buddhist worldview over that of Western astronomy. Even if Entsū's apologetics of a flat worldview may appear curious from today's point of view, they were convincing enough for Entsū and his contemporaries. Entsū's

---

<sup>47</sup> Entsū, *Rekishōhen*, vol. 2, 38.



astronomical theory was widely accepted by various people, and his followers set a unique Buddhist intellectual movement (*Bonreki undō*) in early modern Japan.<sup>48</sup>

After criticizing the idea of a spherical earth, Entō constructs a model of the world based on astronomical calculations that he found in the Buddhist scriptures. Figures 57 to 60 are the pictorial explication of this model of the world. The world envisioned in the Buddhist scriptures is flat. At the center of this world, there is an enormous mountain, *Shumisen* (s: Sumeru), surrounded by nine radiating mountain ranges and eight seas. We are living on one of the four islands, or continents, in the outermost sea and the sun and moon are in horizontal orbit around Shumisen. The flat world is located on three discs or rings, made of metal, water, and wind. This system represents a single world unit called the Shumisen world (*shumikai*). According to Buddhist cosmology, there are countless such units in the universe, and each unit emerges and collapses in each cosmic aeon. Figures 57 and 58 represent a single unit of the Shumisen world. In these pictures, Entō illustrates this world unit, which is an illusion according to Buddhist teaching, just as reality with numerical measurements that he finds in the Buddhist scriptures. Compared with Monno's picture of the Shumisen world drawn in 1754 (Figure, 19), Entō's methods for illustrating the Shumisen world is conceptually closer to that of other astronomical theories of his age. The realm over the center mountain (*Shumisen*) in Monno's picture is the realm of the spiritual entities and gods. Yamagata strongly rejected Monno's picture as a ridiculous superstition in his *Yume no shiro*. Entō however depicts this realm like a mountain in modern geography. The height and shape of the mountains in his picture are determined in accord with numerical measurements and calculation of them. Entō draw the

---

<sup>48</sup> For Entō and his follower's movement, see Itō Tasaburō, "*Kinsei ni okeru kagakuteki sekaikan no hattatsu nitaisuru handō nitsuite*," *Shūkyō kenkyū* 11, no. 2 (1934), Itazawa Takeo, "*Kinsei niokeru chidōsetsu no tenkai to sono handō*," *Shigaku zasshi* 52 (1941), Kashiwara Yūsen, "*Kindai niokeru jōdōkan no sui*," in *Ronshū Nihon Bukkyō shi*, vol. 8 (Tokyo: Yūzankaku, 1987), Kudō Kōkai, "*Fumon risshi no Bonreki undō to shino ryakuden*," *Meiji shōtoku kinen gakkaihō* 56 (1941), Okada Masahiko, "*Kindaika to dentōteki sekaikan: Entō no Shumisensetsu yōgoron wo megutte*," *Shūkyō kenkyū* 291, Yoshida Tadashi, "*Kinseini okeru Bukkyō yo seiyōteki shizenkan no deai*," in *Bukkyō to Nihonjin*, vol. 11 (Tokyo: Yoshikawa kōbunkan, 1986), and Watanabe Toshio, *Kinsei Nihon tenmongakushi* (Tokyo: Kōseisha kōseikaku, 1986).

picture of the Shumisen world as a representation of reality and there is no heaven and hell in his picture.

Figure 59 and 60 represent a geographical view of the Enbudai island (*Enbudaishū*, s: Jambu-dvīpa) on which we live. This island or continent is also depicted as really existing. The mountains (even mythical mountains) are located in the picture in accordance with the content of Buddhist scriptures, just as in modern geography. The pictures of both the Shumisen world and the Enbudai island are with pictorial explication of the movement of the sun and moon.

Entsū developed this model of the Shumisen world in more detail in his another work, *Shumisengi mei narabini jo wakai* (Japanese commentary on the model of the Shumisen world and its introduction). Entsū created a miniature mechanical model of the flat Buddhist worldview, which he used to demonstrate the movements of the sun and the moon corresponding to his calendar system, and tried to convince his contemporaries of the plausibility of his worldview as an objectively calculable system. Figure 61 is a photograph of Entsū's miniature mechanical model of the Shumisen world. The parts representing the sun and the moon in this model could be moved in accordance with Entsū's calendar system. Figure 62 is a blueprint of this miniature model and *Shumisengi mei narabini jo wakai* was published as a commentary on it. Entsū clearly visualized the system of the Shumisen world by creating this miniature model, and the objectivity of this model was sustained by his calendar system.

In Chapter 4, which is the main part of the text and fills volumes 3 to 5, Entsū introduces his unique calendar system that he calls *Bonreki* (Indian astronomy).<sup>49</sup> *Bonreki* was a calendar system created for verifying the reality of the Buddhist worldview that Entsū depicted in the previous chapter. By calculating in detail the movements of the heavenly bodies, based on the numerical values in Buddhist scripture, he describes the

---

<sup>49</sup> In a narrower sense, *Bonreki* means the calendar system that Entsū created based on the content of the Buddhist scriptures. But, when we mention the whole system of his worldview including his model of the world and astronomical theories, it also connotes astronomy in a broader sense. Therefore, I translate the term as Indian astronomy in both cases.

movement of the Shumisen world system. According to Entsū, the calculation of astronomical phenomena based on the numerical values in Buddhist scripture is more accurate than the calculations of modern Western astronomy. In volume 4, Entsū actually creates a calendar and precisely predicts various astronomical phenomena, such as seasonal change, eclipses, the length of day light time, the movement of the sun and its change of angle in accordance with seasonal change, and so on. Entsū calculates all of them using numerical values from the Buddhist scriptures. Therefore, the Shumisen world is also explained as a world system governed by an objectively calculable universal laws in Entsū's astronomical theory.

Figures 63 to 65 represent the movement of the sun and the change of the seasons. Comparing these pictures with those representing the movement of the sun in astronomical theories of his contemporaries, we see that Entsū's method for the explanation of astronomical phenomena is close to those of other astronomical theorists of his day. Even though his cosmographic model was radically at odds with those of Shiba Kōkan, Yamagata Bantō, and Satō Nobuhiro, he tried to verify his theory in much the same way.

In Chapter 5, Entsū asserts that the knowledge contained in Buddhist scripture is that seen by Buddha's spiritual eye (*tengen*) and, therefore, a knowledge beyond that of modern science. However, his method for verifying this Buddhist worldview corresponds in large part to those of his contemporary cosmographic theorists. The prevalent mode of explanation, such as the high estimation of calculation, the pictorial explication of the world as a replica of reality, and the idea of the world as an objective system that follows calculable laws, was adopted by Entsū as well. In this sense, Entsū's astronomical theory was not simply an attack of the modern scientific worldview based on traditional religious cosmology, but a complex construction of a new cosmographic theory that incorporated a contemporary scientific perspective. In fact, the Buddhist worldview that Entsū visualized was not a traditional and popular religious worldview and Entsū himself acknowledges the newness of his theory in his introduction to the text. While Entsū's theory dealt with a

different subject (the flat world system) from that of the other theorists (heliocentrism), the new discursive mode that emerged in the late eighteenth century was shared by Entsū as well.

## **Conclusion**

In this brief survey of the cosmographic theories advanced in Japan around the year 1800, I have been concerned primarily with methodology. I have considered their mode of discourse, method of argument, and means of representation rather than evaluate the correctness of their theories, the profoundness of their understanding of modern astronomy, or their positions within their respective intellectual traditions. Despite their differences in intellectual background and subject of study, there are common methods shared by all of them. The major methods commonly shared by these all theories are 1) the explanation of the world as an objective system, 2) the visualization of the world as a scientific replica of reality, and 3) the high value placed on calculation in the logical explanation of the movement of the world system.

As all of these contemporary cosmographic theories claimed the newness of their perspective, their common discursive mode of explanation was different than those of previous cosmographic discourse. The methods of explanation and the representation of the world in the works of Entsū and Satō were qualitatively different from previous cosmographic discourse in their traditions, while they succeeded its basic worldview as a subject of study. Shiba and Yamagata sought to criticize the inconsistency of the traditional worldview and introduce a completely new system. In the introduction to this paper I remarked that methodological shift in the pictorial explication of space in modern geography (the move from chorography to geography) was closely related to a shift in the characterization of local space (from the self-existent "place" as a microcosm to "space" as a part of a larger system). In a similar way, the emergence of new methods in the

cosmographic discourse also represented a shift in the characterization of the world in people's consciousness.

First of all, explaining the world as an objective system represents a rejection of the role of personal subjectivity and even spirituality in cosmographic theory. The only cause of natural phenomena in this world system is objectively calculable universal laws and there is no exception in the mechanism of this system. Yamagata Bantō's basic motivation for offering new cosmographic theory was to reject superstitions in traditional cosmology and Shiba Kōkan rationally explained natural phenomena that had been explained mythically. While Satō Nobuhiro and Fumon Entsū retained the worldview in their traditions, all astronomical phenomena were explained as a result of universal laws governing the world system in their cosmographic theories. Personal action, emotion, and spirituality are granted no place in this demystified world system.

Secondly, visualizing the world as a scientific replica of reality entails a representational materialization of the world. What in the previous discursive mode metaphorically represented a largely religious worldview was changed to a scientific replica of the actually existing world. The pictorial representation of the world, which used to metaphorically represent an unseen world as well, now came to replicate only the material and visible world. The rhetoric of representation shifted (in the terms of Lévi-Straus) from the metaphoric to the metonymic. The realm of spiritual entity no longer exists in this pictorial representation. Even in the representations of Satō and Entsū that retained the worldview of their traditions, there is no realm for the spiritual entities such as heaven, hell, and the world after death.

Lastly, valuing calculation as a logical explanation of the movement of the world system represents a characterization of the world as an objective and quantifiable system. The high value of calculation to each cosmographic theorist suggests that rational and quantitative evaluation had come to dominate the discourse of plausibility by this period in Japan. In this view, the world is considered a system ruled by objectively calculable

universal laws. Each day of the year is regarded as no more auspicious nor inauspicious than another. There is no room for mystery in this world in which every natural phenomena is regarded as a result of the movement of a world system governed by an objectively calculable laws.

This new characterization of the world was shared by the various cosmographic theories that appeared in Japan around the year 1800. The fact that cosmographic theories so divergent in other ways shared this common ground of thought suggests that a new discourse of plausibility and new understanding of the world was emerging in this period. Nearly seventy years before the official adoption of the solar calendar system in 1872, the Japanese worldview and its means of evaluation had already undergone significant change. And the traditional cosmology had shifted to a new view of the material and visible world as an objective system governed by universal laws. Viewed only in terms of the content of their thought, works like those of Satō and Entō might be considered merely reactionary rejection of modern rationalism and thus the period around 1800 would still be regarded as a transitional stage in the process of modernization. However, the methodological shift in the cosmographic discourse that we examined in this paper clearly indicates that there was a significant rupture in the common ground of thought before the beginning of the nineteenth century and after that period.

This new common ground of thought or consciousness was a precondition of the modern discourse of which modern religious discourse is a part. In order to understand the basic characteristics of modern religious thought, we must therefore first understand this common ground of thought that served as its discursive foundation. Although here we focused on cosmographic discourse, other fundamental notion, such as time, should also be considered. By studying these basic conditions of discourse, we may be able to relativize and reconsider the presuppositions of modern discourse that appears so real and mandatory for us who live within it.

### CHAPTER 3

## FUMON ENTSŪ AND *BONREKI*: DISCOVERY OF BUDDHIST ASTRONOMY

### Life of Fumon Entsu and Bonreki

Fumon Entsu (1755-1834)<sup>1</sup> was a Buddhist monk who lived in the late Tokugawa Japan. Entsu's *azana* (common name) was Kagetsu. He also used various *gō* (pen name) such as Tōshin bosatsu, Tōshin inshi, Fumon, Mugaishi, Kenshōin, and so on. Entsu was also called Senjō, when he was a monk of the Nichiren sect. Despite the fact that the sectarian Buddhist organization system was firmly established in the late Tokugawa period, the Buddhist sect to which Entsu belonged is indeterminable.<sup>2</sup>

Entsu was born in 1755 in a small town named Tachikawa chō in Tottori prefecture. His father, Yamada Gentsū, was a medical officer (*ikan*) of the Tottori clan, which was located in the southwest part of Japan. Since Yamada Gentsū's annual salary was 300 *koku* (a unit of rice), Entsu's family was in the middle class of the Samurai society. Entsu's mother was a daughter of Yamada Gentsū's colleague. When he was seven years old, Entsu moved into the Myōyō temple (*Shōeizan Myōyōji*) that was his mother's family temple. In this temple, which was a branch temple of the Nichiren sect, Entsu became a Buddhist monk under the instruction of the Buddhist monk, Nichigi, and received a Buddhist name, Senjō. He started to study Buddhism in this temple.

---

<sup>1</sup> The statements on the life of Entsu in this chapter is mainly based on the bibliography of Entsu written by Kudō Kōkai in Chinese writing (Kudō 1941). I also referred to Washio (1903), Ouchi (1867), Satake (1936), Fukō (1883) Yoshida (1986), Itazawa (1941), Itō (1934) and some bibliographical statements found in Entsu's and his follower's works.

<sup>2</sup> Washio Junkei's *Nihon bukka jinmei jisho* (Biographical dictionary of Japanese Buddhists). 3d ed (Tokyo: Tokyo Bijutsu, 1903) says "Entsu used to live in the Zōjō temple of the Jōdo sect, but he was not converted from the Tendai sect" (p. 102). However, Ouchi Seiran's *Zoku nihon kōsōden* (1867), which was cited in Washio's *Bukka jinmei jisho*, classifies Entsu as a monk of the Jōdo sect.

When Entsū was fifteen years old, he read *Tenkei wakumon* (catechism on the heavenly way), a popular Chinese astronomy text in his period which included Western astronomical theories. Learning the modern scientific worldview from this text, Entsū had doubts about the flat Buddhist worldview.<sup>3</sup> However, the Buddhist worldview is a sacred teaching revealed by Buddha's divine vision and thus there should be no inconsistency in it. In order to solve this problem, Entsū studied various Buddhist teachings as well as various astronomical theories, while wandering throughout the country. He went to Mt. Hiei, the head quarter of the Tendai sect, and studied the basic Tendai teachings. Entsū also studied the Pure-Land Buddhist teachings, Shingon esoteric Buddhism and Zen teachings at other places. During this time, he became a disciple of a Tendai monk, Gōchō. According to Kudō Kōkai's biography of Entsū, Entsū also met a famous Shingon monk, Jiun, in this period.<sup>4</sup>

Entsū also learned general astronomy from an official astronomer of the Imperial court, Kawano Tsūrei. He studied all sorts of astronomical theories including Western astronomy under Kawano's instruction and also learned Dutch.<sup>5</sup> Then, when Entsū was twenty eight years old (1782), he finally acquired a religious conviction that he could find a true astronomical theory in Buddhist scriptures and started to systematically study *Bonreki* (Buddhist or Indian astronomy).

---

<sup>3</sup> According to Entsū's *Bonreki sakushin* (1816), Entsū was especially confused by the existence of the night country that has only night in one half year and only daytime in another half year. Because it is hard to explain the existence of this part of the world in terms of the flat Buddhist cosmography that insists that the sun and the moon horizontally turn round on the four continents on the flat sea. Entsū's doubt about the flat Buddhist worldview was originally based on a scientific motivation (p. 13).

<sup>4</sup> Since Jiun is famous as an expert of *bongo* (sanskrit) study and an organizer of the ordination revival movement (*kairitsu fukkō undō*) that aimed at returning to the original and pure life of a Buddhist monk, it might be possible that Entsū acquired the attitude of returning to the original, Indian Buddhist teaching from Jiun.

<sup>5</sup> Kawano Tsūrei's colleague, Kojima Kōken, published the criticism of Entsū's *Bukkoku rekishōhen* in the later period. Since Kojima says in his book that "Mr. Fumon learned the Western astronomy from my late friend, Kawano Mondonosuke (Tsūrei)," Entsū seems mainly to have learned the Western astronomy from Kawano Tsūrei (Watanabe Toshio, *Kinsei nihon tenmongakushi* (Tokyo: Kōseisha Kōseikaku, 1986, 116-119).



Afterwards, Entsū came back to the Myōyō temple and attempted an organizational reform of the Nichiren sect.<sup>6</sup> After failing in this reformation movement, he was excluded from the Nichiren sect and became a Tendai monk. Then, Entsū moved into the Sekizenin in Yamashiro, Kyoto in 1794 and began to lecture on his Bonreki theory. According to Kudō Kōkai's biography of Entsū, he got the status of *risshi* (a precept master) from the Imperial court by lecturing the Bonreki in this period.

Entsū officially advocated his Bonreki as an individual field of study in 1809 and actively began to preach the Bonreki theory. In 1810, he wrote his main work, *Bukkoku rekishōhen* (Book of Astronomy in a Buddhist Country), and published it later. After this period, Entsū eagerly propagated his theory by publishing many books on Bonreki. He also created *Shumisen gi* (a miniature model of the flat Buddhist worldview) and *Shukushō gi* (a celestial model of the Shumisen world) to convince people of the accuracy of his Bonreki theory. Entsū's unique theory caused both affirmative and negative sensations. While many students, including Buddhist monks and general astronomers, studied Entsū's Bonreki, the Bonreki was criticized by scholars of various intellectual traditions and many criticisms of Entsū's theory were published. The famous geographer in this period, Inō Tadataka, wrote *Bukkoku rekishōhen sekimō* (Rejection of *Bukkoku rekishōhen*) in 1816-7 and Kojima Kōken, who was a colleague of Entsū's astronomy teacher, Kawano Tsūrei, published *Bukkoku rekishōhen benmō* (Criticism of *Bukkoku rekishōhen*) in 1818. Along with the criticisms of the scientists, Entsū's Bonreki was also criticized by the Buddhist fundamentalists.<sup>7</sup>

In 1818, Entsū applied to the Tokugawa government for the official admission of Bonreki as an astronomical theory. Though it was first rejected by the astronomy office of

---

<sup>6</sup> This episode might reflect Entsū's relation to Jiun or Buddhist reformers in this period. This is also interesting for considering the relation between Entsū's Bonreki and modern Buddhist discourse.

<sup>7</sup> According to Entsū's letter sent to one of his followers, Shingyō, in 1822, Entsū suffered severe public criticism including a criticism from the monks in the Tendai sect (Satake Junnyo, ed., *Kinnō gohō Shingyō gakutō* (Kyoto: Daigyōjishi kankō kōenkai, 1936), 58-62). Watanabe Toshio, *Nihon tenmongakushi* (History of Japanese astronomy), vol. 1 (Tokyo: Kōseisha kōseikaku, 1986) mention the dispute on the Bonreki in this period in detail (pp. 305-330).

the Tokugawa government as well as that of the Imperial court, the Bonreki was officially admitted by the Tokugawa government in 1821, getting support from the Imperial household.<sup>8</sup> In 1823, Entsū moved into the Zōjō temple of the Jōdo sect in Edo and stayed there for the rest of his life. Many works of Entsū were published from the Zōjō temple in a wood-block printing.<sup>9</sup> Entsū went around many places to propagate his Bonreki theory. He lectured on Bonreki in many Buddhist sanctuaries and at many famous temples regardless of their sectarian background. It is said that he had over one thousand students when he passed away in 1834. At that time, he was eighty one years old. In his posthumous title, he was called Fumon Entsū *dairisshi* (great vinaya master).<sup>10</sup> After Entsū's death, his followers built memorials praising Entsū's works and titled Entsū *Bonreki kaiso* (the founder of the Bonreki).

### Works of Entsū

In Kudō Kōkai's bibliography of Entsū, he counts over forty of Entsū's works. According to *Kokusho sōmokuroku*, which is a general catalogue of the traditional Japanese texts, over twenty of Entsū's works are still accessible today. Of these texts, the works that should be referred in order to study Entsū's Bonreki are *Bukkoku rekishōhen*, 5 vols. (1810), *Shumisengi mei narabini jo wakai* (Japanese commentary on the inscription and introduction to the miniature model of the Shumisen world, 1813), 2 vols., *Jikken shumikaisetsu* (Experimental explanation of the Shumisen worldview, 1821), 3 vols., and *Bonreki sakushin* (Recommendation of Buddhist astronomy, 1816). These texts were

<sup>8</sup> However, Entsū and his Bonreki still suffered severe public criticism. Satake Junnyo, ed., *Kinnō gohō Shingyō gakuō* (Kyoto: Daigyōjishi kankō kōenkai, 1936) introduces a rumor that Entsū was poisoned by the Tokugawa government (p. 55). Entsū's works were also banned from public circulation in 1821 (Shingyō, *Daikanki yujun binran*, 1846).

<sup>9</sup> According to the advertisement at the end of Entsū's *Uyoku genninron ryakukai*, published in 1824, Entsū's *Bukkoku rekishōhen*, 5 vols, *Shumisengi mei narabini jo wakai*, 2 vols., *Shumisengi zu* (the picture of the Shumisen world: 1 paper), *Shuku shukugi zu* (the celestial map: 1 paper), *Bonreki sakushin*, and *Jikken shumikai setsu*, 3 vols., are published from the Zōjō temple. (Entsū, *Uyoku genninron ryakukai* (1824), end 3-4)

<sup>10</sup> His full posthumous title was *Daijōbosatsukaibiku daisōzu Nyūrensha Seiyoshōnin Fumon Entsū dairisshi*. (Kudō Kōkai, "Fumon risshi no Bonreki undō to shi no ryakuden," *Meiji shōtoku kinen gakkaihō* 56 (1941): 40).

published by the Zōjō temple in the late Edo period. Most of the other works of Entsu are the commentaries on or the research notes for these main works. Furthermore, Entsu's unpublished notes, *Risseabidon rekisho* (Astronomical theory in *Risseabidonron*, 1819), 2 vols., are also helpful to know the basic formation of Entsu's astronomical theory. In this chapter, I will explain Entsu's Bonreki theory in detail by introducing his masterpiece, *Bukkoku rekishōhen*, chapter by chapter.

As Entsu began to study astronomical teachings of Buddhism by reading an astronomy text that introduced the modern Western astronomy, Entsu's basic motivation in creating Bonreki was to solve the inconsistency of Buddhist teachings which were raised by the modern scientific worldview.<sup>11</sup> In fact, Entsu's period was the time when the modern scientific worldview including the heliocentric theory started to become popular in Japan through the translation of Dutch texts. Motoki Ryōei translated the Dutch astronomy text, *Tenchi nikyū yōhō* (Manual of the celestial and earth globes), in 1774 and first introduced heliocentrism through a direct translation of the Dutch text. Shiba Kōkan introduced heliocentrism to the general public by publishing *Oranda tensetsu* (Dutch astronomical theory) in 1796 and *Kopperu tenmon zukai* (Pictorial explanation of Copernican astronomy) in 1808. Criticizing the tendency of heliocentrism becoming popular in Japan, Entsu explains his basic motivation for studying Bonreki as follows:

The reason why people believe in the idea of a spherical earth is that they (modern astronomical theories) scientifically demonstrate it by using astronomical calculation. In order to dispel the doubts about the Shumisen world, we have to make people believe it by setting the astronomical calculation of the Shumisen world. Without doing it, how can we make people listen to us.<sup>12</sup>

Showing the correspondence between the astronomical theory (Bonreki) and the cosmography as a representation of the real world (the Shumisen worldview) was one of the most significant factors of Entsu's Bonreki theory. He even created a miniature model

---

<sup>11</sup> Entsu explains this process in detail in his *Bonreki sakushin* (Entsu, *Bonreki sakushin* (1816), 14-16).

<sup>12</sup> Entsu, *Jikken Shumikai setsu*, vol. 1 (1821), jo-3.

---

of the Shumisen world to more visibly demonstrate it. In this sense, Entsū tried to demonstrate the plausibility of the Buddhist worldview as a representation of reality in a similar way to the modern scientific discourse of his contemporaries.

On this point, Entsū's *Bonreki* is different from other Buddhist fundamentalist reactions to the Western astronomy (especially to the idea of a spherical earth) that appeared before *Bonreki*. Entsū criticizes them as follows:

Even though there were the books (criticizing the Western astronomy), such as *Fukyō shinmon*, *Tenmon benwaku*, and *Kaichōron*, in recent years, they did not know the astronomical theories outside Buddhist tradition, nor even examined astronomical theories in the Buddhist scriptures. How can they protect Buddhism from the criticism of others.<sup>13</sup>

Following this critical concern, Entsū studied various Buddhist scriptures to abstract an essential Buddhist astronomical theory. According to *Bonreki sakushin*, Entsū takes up over fifteen esoteric Buddhist sutras dealing with Buddhist astrology, and Theravāda and Abhidharma texts including detailed statements on the Shumisen world, as Buddhist scriptures that are essentially significant for studying Buddhist astronomical theory.<sup>14</sup> Of these scriptures, Entsū regards *Nichigwatsugyōhon* of *Risseabidonron* and *Seishukuhon* of *Nichizōkyō* as the most essential texts of Buddhist astronomy. Entsū's basic perspective was to clarify an essential astronomical theory of Buddhism that is common to the entire Buddhist scriptures. As Entsū's sectarian background is indeterminable, his project that tried to find an essential teaching of Buddhism focusing on a particular subject basically had a trans-sectarian characteristic.

Entsū also studied various astronomical teachings outside Buddhist tradition. As Entsū himself says "I studied all Western astronomical theories that have been introduced into China since the late Ming dynasty,"<sup>15</sup> he studied the modern Western astronomy as

---

<sup>13</sup> Entsū, *Bonreki sakushin*, 14.

<sup>14</sup> In Entsū's *Bonreki sakushin*, *Nichizōkyō*, *Gatsuzōkyō*, *Monjugiki*, *Matōgakyō*, *Shazukangyō*, *Risseabidonron*, *Shukuyōgyō*, *Shōbōnenkyō*, *Kisekyō*, *Rutangyō*, *Kiseimpongyō*, *Jōagonkyō*, and *Abhidharma kusharon* are taken up as basic texts of the Buddhist astronomy. (Entsū, *Bonreki sakushin*, 15).

<sup>15</sup> Entsū, *Jikken shumikai setsu*, vol. 2 (1821), 20.

well as the traditional astronomical theories. It is said that Entsū also studied Dutch, but it is not clear whether he directly studied Dutch texts or not. In *Bukkoku rekishōhen*, he cites an enormous number of astronomy texts including the texts that introduce heliocentric theory.

Because of its uniqueness of insisting on the scientific validity of the flat worldview, Entsū's Bonreki has been repeatedly introduced by Japanese historians as a curious topic in the history of modern Japanese science. However there is no systematic and total introduction or analysis of Entsū's Bonreki theory. All works dealing with Entsū's Bonreki just pick up some fundamentalist and sophistic remarks of Entsū and never attempted a systematic interpretation of Bonreki theory.<sup>16</sup> In this chapter, I would like to attempt a systematic analysis of Entsū's Bonreki focusing on his logical frameworks and methods of explanation rather than taking up the "curious" remarks of Entsū. Therefore, it is not my concern here to show how curious Entsū's theory is and to evaluate Entsū's theory from today's scientific standards. Judging a historical work from today's standard sometimes cause a misreading of the meaning of the text in its own historical context. Eliminating a judgment from today's point of view as much as possible, I will systematically explain Entsū's Bonreki as introduced in his texts.

Furthermore, while Entsū's Bonreki has been studied as a curious reaction of the traditional worldview against the modern scientific worldview, there is no study considering the meaning of Bonreki in the history of early modern and modern Japanese Buddhist thought. However, Entsū's Bonreki theory includes many interesting perspectives for considering the development of modern Buddhology. Featuring the fact that Entsū stuck to the flat worldview, Entsū's Bonreki seems to have nothing to do with the modern Buddhology that tried to reconstruct Buddhism in terms of modern philosophical and scientific theories. However, at the level of the discourse of Entsū's Buddhist astronomy, there are many perspectives that can be considered as a germination

---

<sup>16</sup> For example, Yoshida, *Bukkyō to seiyōteki shizenkan* (1986) introduces Entsū's *Bukkoku rekishōhen* without mentioning Entsū's calendar system that is the main part of the text. This is a representative case of the introduction of Entsū's Bonreki focusing only on the curious remarks of Entsū.

of the later development of modern Buddhology. By focusing more on Entsū's logical framework and method for explaining Buddhist astronomy, I would also like to reevaluate Entsū's *Bonreki* in terms of its rhetorical relation to the modern Buddhology.<sup>17</sup>

### **Discovery of *Bonreki* as an Original Astronomy**

Entsū used many strategies to convince people of the validity of a Buddhist worldview. One of these logical frameworks that Entsū used for legitimizing *Bonreki* was to show the Indian origin of all astronomical theories in the world. By indicating that Western astronomy was derived from the original Indian or Buddhist astronomy, Entsū tried to insist on a supremacy of *Bonreki* over the modern Western astronomy. In the first chapter of Entsū's *Bukkoku rekishōhen* titled *Rekigen* (origin of astronomy), he traces a historical genealogy of astronomical theories of the world citing from an enormous number of historical documents.

First of all, Entsū insists that Chinese astronomy could be established only after the introduction of Indian astronomy, tracing a history of the development of Chinese astronomy from the Han dynasty to the Ming dynasty. According to Entsū, there was no astronomical theory to explain the mechanism of the waxing and waning of moon and the solar eclipses in China before the Han dynasty. Citing many astronomy texts composed after the Han dynasty, he insists that the development of Chinese astronomy was brought by contacts with Indian astronomy through the works of Buddhist monks. According to Entsū, Indian astronomy gradually became popular in China, and Indian astronomers were officially invited to make a calendar in the period of the Tang dynasty. The Chinese astronomers adopted the idea of eclipses and leap time for the first time in the Tang dynasty, but this idea was frequently introduced by Indian astronomers before this period. Entsū insists that *Daienreki*, which was composed by a Buddhist monk, I-hsing, in the

---

<sup>17</sup> For methodological remarks on using a semiological approach to the intellectual history, see Introduction.

period of the Tang dynasty, clearly represents that Chinese astronomy in this period was an imitation of the Indian astronomy.<sup>18</sup>

According to Entsū, the influence of Indian astronomy became more obvious in the following periods of the Sung, Yüan and Ming dynasties. Chinese astronomers first invented a method of knowing the winter solstice by measuring the height of a shadow in the period of the Sung dynasty, but this method (*sokuei no hō*) had already been in the Buddhist scriptures. The history of the development of Chinese astronomy was the history of the gradual acceptance of the perfect Indian astronomy. Tracing a history of the translation of Indian astronomical texts into Chinese, Entsū concludes that "*Bonreki* (Indian or Buddhist astronomy) was introduced into China as follows: it has its origin in the late Han dynasty, it became a brook in the periods of Chin and Wêi, it became a river in the periods of Tang and Sung, and it finally became a large river in the periods of Yüan and Ming."<sup>19</sup>

Secondly, Entsū shows a relation between the Indian astronomy and Uighur astronomy (*Kaireki*). According to Entsū, the Uighur astronomy is a simple imitation of Bonreki. The signs of the zodiac (*jūnikyū*) in the Uighur astronomy are completely the same as those of Bonreki. Citing passages from *Shukuyōgyō* and *Nichizōkyō*, Entsū insists that the idea of Uighur astronomy that regards Vernal Equinox Day as the first day of the year came from Bonreki. Moreover, both Uighur and Chinese astronomy use the Indian names of stars, such as *Ragō* and *Keito*. Entsū insists that this is also a proof of their acceptance of Bonreki.

According to Entsū, Uighur was bordered by India and culturally and politically influenced by India. Buddhism and the Bonreki were therefore very popular there since ancient times. Citing a statement from *Tang shu* saying that six of the twelve Buddhist

---

<sup>18</sup> Entsū cites from many historical documents for legitimizing his opinion. For example, on I hsingng's *Daienreki*, he cites the following passage from *Tōsho rekishi*: "There are twenty three astronomical theories from the Han dynasty to *Rintokureki* in the Tang dynasty. They were close to the system of heaven but not precise. I hang presented precise theory. Though there emerged many revisions in the later period, all of them are its imitation (Entsū, *Bukkoku rekishōhen*, vol. 1 (1810), 5-6)."

<sup>19</sup> Entsū, *Bukkoku rekishōhen*, vol. 1, 10.

monks who translated Buddhist texts into Chinese in the period of the late Han dynasty were from the Uighur area (*kaikyō*) and the other six came to China through the Uighur area, Entsū concludes that "Over one hundred people came through the Uighur area to spread Buddhism since the period of the Three Kingdoms. Considering this fact, the countries in the Uighur area have accepted the Indian scriptures and astronomy for the longest time. Moreover, many countries in the Uighur area are descendants of Indian (*shakushi*). If so, how we could have doubt about that the Uighur astronomy (*Kaireiki*) is namely the Indian astronomy (*Bonreki*)."<sup>20</sup>

Furthermore, Entsū insists that *Seireki* (Western astronomy or European astronomy) is only a system that slightly improved *Kaireiki* (Uighur, Islam or Arabian) astronomy.<sup>21</sup> The Western astronomy also uses the same signs of the zodiac and the names of stars as those of Uighur astronomy that is originally from Indian astronomy. Entsū says that "*Mingshu* and *Rekisan zensho* also mention that the Western astronomy is originally from the Uighur astronomy, but they do not know that both of them are originally from India."<sup>22</sup>

The Western and Uighur astronomy that focus on the movements of the seven stars (*shichiyō*: the sun, the moon, Jupiter, Mars, Saturn, Venus, and Mercury) are simple imitations of the Indian astronomy that already studied the movements of the seven stars in the ancient time. According to Entsū, the Western astronomy sets the new year's day at the time when Scorpio is on the orbit of the sun. This is different from that of the Uighur astronomy. However, the same setting of the new year's day can be found in the Buddhist scriptures. Citing the calendar systems of *Shukuyōgyō* and *Nichizōkyō* that have the same setting of the new year's day as that of the Western astronomy, Entsū concludes that "the Western solar calendar (*Kōseireki*) is originally from *Bonreki*."<sup>23</sup> According to Entsū, the

---

<sup>20</sup> Entsū, *Bukkoku rekishōhen*, vol. 1, 21.

<sup>21</sup> *Kai* sometimes means Uighru but also means Islam or Arabic in Entsū's texts. As Entsū identifies Uighru (*Tenhō koku*) with Persia (*Pāshi koku*) as *Kaikoku*, there is a geographical confusion in Entsū's idea of *Kaikoku* (Entsū, *Bukkoku rekishōhen*, vol.1, 19-20).

<sup>22</sup> Entsū, *Bukkoku rekishōhen*, vol.1, 22.

<sup>23</sup> *Ibid.*, 25.



Western astronomy adopts not a flexible month system of the lunar calendar system (with leap month), but a fixed month system of the solar calendar system (without leap month) that is similar to that of the Uighur astronomy. Comparing their calendar systems, Entsū concludes that the Western astronomy is a derivative of the Uighur astronomy. Since the Uighur astronomy is, according to Entsū, originally from Indian astronomy, the Western astronomy is also regarded as a derivative of Bonreki.

Even though the study of *Rekigen* (the origin of astronomy) is almost exclusively discussed in *Bukkoku rekishōhen*, the importance of this idea is frequently mentioned in his other works too. Considering it from today's point of view, it is nonsense to insist that the ancient scientific theory is better than the later and more developed theory. The new theory will be considered not a derivative, but a development. However, we should notice that the study of *Rekigen* was a plausible authorization of Entsū's Bonreki in his period, in which the ancient leaning (*kogaku*) had a strong rhetorical influence on the works in various intellectual traditions. Entsū traced the historical development of astronomical theories by referring to the official historiography in China and the astronomical texts such as *Rekisan zensho*. He cites from an enormous number of texts and tries to historically demonstrate the Indian origin of astronomical theory.<sup>24</sup>

### **The Buddhist System of the Universe**

Even though the literal translation of *Bonreki* is the Indian or Buddhist calendar system, Entsū's Bonreki theory has wider contents including astronomy and geography. He organized a general theory that can be called the Buddhist astronomy, comparing the statements in the Buddhist scriptures with the latest scientific theories in his period. In the second chapter of his *Bukkoku rekishōhen*, titled *Tentai* (heavenly bodies), Entsū

---

<sup>24</sup> The Buddhist scriptures that Entsū cites to compose the Buddhist astronomy are mainly the astrology texts of esoteric Buddhism, such as *Nichizōkyō*, *Gatsuzōkyō*, and *Shukuyōgyō*. These texts were established in the later period and their astrological theories are normally considered a result of the influence from Arabic and Uighur culture. In this sense, what Entsū insists is opposed to what is believed to have actually happened by today's standards. However, our concern here is not to evaluate the correctness of Entsū's theory from today's perspective, but to clarify his rhetoric for fabricating the Buddhist astronomy.

compares the Buddhist system of the universe with the Chinese and Western celestial systems and insists on the supremacy of the Buddhist system.

First of all, Entsū critically introduces the Chinese celestial systems and compares them with the Buddhist system of the universe. According to Entsū, there were the three old families (*sanka*) and the four recent theories (*shisetsu*) in Chinese astronomical traditions that respectively have different celestial systems. Even though Entsū introduces all seven theories in his *Bukkoku rekishōhen*, he explains the basic outline of Chinese celestial systems focusing on the contradiction between the two major theories: *Gaitensetsu* (canopy sky theory) and *Kontensetsu* (spherical sky theory). *Gaitensetsu* is the system of universe adopted in the famous Chinese astronomy text, *Shūhi sankei*. Entsū explains *Gaitensetsu* of *Shūhi sankei* as follows:

According to the statements in it (*Shūhi sankei*), the sky is like a bamboo hat and the earth has a shape of an overturned washtub. The centers of the sky and earth is high and their peripheries are low. It regards the place under the polestar as the center of the universe. That place is the highest point of the earth.<sup>25</sup>

*Gaitensetsu* (canopy sky theory) explains the system of universe including the movement of the heavenly bodies based on the idea of the flat earth and the dome shaped sky. Its astronomical theories that ascribe the cause of the difference between day and night to the earth's shape (like an overturned washtub that is high at the center) and regards the orbits of the sun and the moon as horizontal are similar to those of the Buddhist system of the universe. Explaining *Shūhi*'s theory in detail (Figures 50, 51, and 66), Entsū concludes that "the sacred teachings in India and China are tacitly coincident and almost identical. Therefore, the methods to calculate the division of year and to consider the change of season are similar to each other."<sup>26</sup>

*Kontensetsu* (spherical sky theory) is the system of the universe based on the ideas of a spherical earth and sky. According to Entsū, in the system of *Kontensetsu*, "the shape of

---

<sup>25</sup> Entsū, *Bukkoku rekishōhen*, vol.2, 1.

<sup>26</sup> *Ibid.*, 3.

the sky is like an egg and the earth is like a yolk" and "one half of the sky covers the upper part of the earth and another half of the sky stretch around the lower part."<sup>27</sup> Unlike *Gaitensetsu* that has the idea of the flat earth covered by the dome shaped sky, the heavenly bodies including the sun and the moon do not orbit horizontally, but even move vertically in *Kontensetsu*. In China, the celestial models based on this system of universe (*Kontengi*) had been manufactured for the astronomical observation (Figure 67). This system of universe is basically similar to the Western spherical earth theory and *Kontensetsu* was also close to the Western astronomy in that it explained the movements of the heavenly bodies and the change of seasons by using a celestial model which was based on the observation of natural phenomena. While showing a sympathy to *Gaitensetsu* indicating its similarity to a Buddhist worldview, Entsū is critical of *Kontensetsu*. After tracing the historical development of *Kontensetsu* and *Kontengi* in detail, Entsū concludes that "*Kontengi* is most convenient for astronomical observation, but in the building of its celestial system, there is nothing like the theories proven in the sacred texts. Moreover, the theories that the sun and the moon orbit from underground and go in and out of water are especially ridiculous."<sup>28</sup>

Focusing on a polemical difference between *Kontensetsu* and *Gaitensetsu*, Entsū shows a variety of Chinese celestial systems in the second chapter of his *Bukkoku rekishōhen*. Entsū also indicates that the difference between *Kontensetsu* and *Gaitensetsu* is the difference between the man-made system and the system of the universe in the sacred text. Entsū says that therefore *Kontensetsu* had been frequently revised by the later astronomers, while *Gaitensetsu* in *Shūhisankei* had hardly ever been changed for a long time. We can illustrate Entsū's binary explanation here as follows:

***Kontensetsu* — Spherical earth & Spherical sky — Man-made — Changeable — Western system**

---

<sup>27</sup> Entsū, *Bukkokurekishōhen*, vol.2, 8.

<sup>28</sup> *Ibid.*, 19.

***Gaitensetsu* — Flat earth & Dome shaped sky— Sacred text— Unchangeable—  
Indian system**

Yoshida Tadashi indicates that Entsū emphasized the similarity between *Shūhi's Gaitensetsu* and Buddhist worldview in order to use the authority of *Shūhisankei*.<sup>29</sup> As Yoshida cites from Entsū's letter to his opponent, Senyō, that mentions this strategy, using the authority of *Shūhi sankei* might have been a part of Entsū's motivation. However, at least in the context of *Bukkoku rekishōhen*, emphasizing the similarity between *Shūhi's Gaitensetsu* and the Buddhist worldview seems to be a part of the above mentioned binary plot structure that covers Entsū's entire discourse.

In fact, Entsū never identified the Buddhist worldview (*Shumisensetsu*) with *Gaitensetsu*. He insists that while the sacred teaching of China (*Gaitensetsu*) is still based on observation and reasoning, the Buddhist worldview is solely captured by the Sage's divine vision (*tengen*). Since the Buddhist system of universe is a fundamental standard (*teijun*) that is observed not by human vision, but by divine vision, there is no variation in the Indian system, while there are many variations in Chinese theory as represented by the three families and four theories. According to Entsū, the Buddhist system of the universe is the only theory that is really comprehensive and unchangeable truth. In Entsū's binary plot structure that I mentioned before, *Gaitensetsu* is on the same pole as that of the Buddhist system of universe (*Shumisensetsu*) in the sense that it is a sacred teaching featuring a flat worldview. However, *Gaitensetsu* does not match the Buddhist theory on the point that it is not a fundamental standard captured by the divine vision.

Following this binary plot structure represented by the contrast between *Gaitensetsu* and *Kontensetsu*, Entsū also criticizes the Western system of the universe as an extreme case of *Kontensetsu* that is on the opposite pole than the Indian or Buddhist system of

---

<sup>29</sup> Yoshida, "*Bukkyō to seiyōteki shizenkan*," (1986), 127. But Yoshida Tadashi also admits that Entsū never identified *Shūhi's Gaitensetsu* and *Shumisensetsu*.

universe. First of all, Entsū introduces the old Western system (*seiyō no kyūsetsu*) that adopts geocentricism. Entsū explains the old Western system as follows:

**The heavenly bodies are spherical and their circular orbits cover the earth. The earth has a bullet shape. It is stable and immovable. It is located at the center of the celestial system and people live on the four sides of it. The celestial system is regarded as ten times layered or twelve times layered.<sup>30</sup>**

Entsū indicates the similarity between the old Western system and Chinese *Kontensetsu*. According to Entsū, the old Western system also shares a common characteristic with *Kontensetsu* in that both systems have no absolute standard. Even though the Western astronomy first adopted Indian astronomy, there emerged many talented scholars in the period of Yuan and Ming. They created each lineage and struggled with each other. Since the old Western astronomers that Entsū mentions are the Jesuit missionaries to China such as Matteo Ricci, Adam Shall von Bell, and Jacobus Rho, the history of the old Western system here means its development in China.

Entsū also introduces the new theories of the West. Citing from *Rekishōshinsho* (new book of astronomy), a Dutch astronomy text translated by Shizuki Tadao, Entsū explains the new Western celestial system that mainly features heliocentrism by introducing the two major theories of Koperu (Nicholas Copernicus) and Teiko (Tycho Brahe). According to Koperu's theory, "The sun is located at the center of celestial system and rotates. The moon revolves around the earth and both the earth and the moon revolve around the sun."<sup>31</sup> But according to Teiko's theory, "The moon revolves around the earth and the sun revolve around both the earth and the moon." The former is a basic heliocentric theory and the later is a more complicated form (Figure 52 and 53). As represented by the contrast between these two major theories, there are various celestial systems in the modern Western astronomy and these theories struggle with each other. Citing from many Chinese

---

<sup>30</sup> Entsū, *Bukkoku rekishōhen*, vol. 2, 22. The bullet shape in this context is a spherical shape.

<sup>31</sup> *Ibid.*, 23.

astronomy texts that explain the history of modern Western astronomy, Entsū emphasizes that there is also no absolute standard in the new Western theories.<sup>32</sup>

Even though the Western systems establish their theories based on the scientific observation of astronomical phenomena using advanced precision instruments, such as the telescope, the results of their observation and organized systems are enormously various. If it is really based on actual observation and survey, there should never be such variation. Introducing the variation of numerical measurements in the Western theories that indicates the difference between the sizes of the earth and the sun as an example, Entsū insists that we cannot set an absolute standard by observing and surveying astronomical phenomena with man-made precision instruments.<sup>33</sup> For Entsū, the Western theory is an extreme case of the man-made theory and surmise that is on the pole opposite to the sacred theory, such as the Indian system, revealed by divine observation.

According to Entsū, the Indian theory is the system of the universe seen by the Sage's divine vision (*tengen*) that is revealed at the stage of deep meditation (*shinzen*). Therefore, "the Indian celestial system is the result of spiritual causation and it never talks about the system like an eggshell or glass marble. It consists of what people call *rokuyokuten* (the six heavens of the realm of desire) and *shiki mushikiten* (the heavens of the realm of form and non-form)."<sup>34</sup> The knowledge of this system of universe comes not from scientific observation and calculation, but from a religious practice that make it possible to capture the ultimate truth. Therefore, it is the absolute and unchangeable standard that transcends any kind of celestial system. In this sense, Entsū situates the Indian system on the complete opposite pole to the Western system. For Entsū, while the Indian system has an absolute standard, unchangeable, sacred, and revealed by the divine vision, the Western system is various, changeable, man-made, and based on the human vision and a guess. This binary explanation is one of the main structural characteristics of Entsū's Bonreki theory.

---

<sup>32</sup> Entsū, *Bukkoku rekishōhen*, vol. 2, 25-26.

<sup>33</sup> *Ibid.*, 27.

<sup>34</sup> *Ibid.*, 29.

### **Criticism of the Spherical Earth**

In the third chapter of *Bukkoku rekishōhen*, titled *Chikei* (landscape), Entsū insists on a supremacy of the flat landscape of the Shumisen world (Buddhist world system surrounding Mt. Sumeru as a center of the world) in contrast to the idea of a spherical earth. Succeeding the binary plot structure presented in the previous chapters, Entsū explains the Chinese, Western, and Indian ideas of earth. First of all, Entsū introduces the Chinese idea of earth and reduces various ideas of earth in Chinese astronomical tradition into the contradiction between the idea of a spherical earth in *Kontensetsu* and the idea of a flat earth in *Gaitensetsu*. In the aspect that Entsū criticizes the idea of earth in *Kontensetsu* as a similar theory to the Western idea of the spherical earth and has sympathy for the flat idea of earth in *Gaitensetsu* as a similar theory to the flat landscape of the Shumisen world, he continues to follow his binary explanation. In this chapter, however, his point of argument shifts from the contradiction between the absolute sacred theory and the relative man-made theory to the issue of logical plausibility of each theory. Unlike the previous two chapters that focused on the historical development of astronomical theories, in this chapter, Entsū highlights the verisimilitude of the Buddhist worldview by using a similar rhetoric to that of modern geography. Therefore, instead of emphasizing the absolute/relative contradiction between the two astronomies derived from a historical analysis, Entsū criticizes a logical weakness of the Western idea of the spherical earth and indicates a logical supremacy of the flat landscape of the Shumisen world in this chapter.

Following the summary of the Chinese ideas of the earth, Entsū introduces the Western idea of the spherical earth. While explaining the basic astronomical theories that support the idea of the spherical earth in detail, he severely criticizes these theories one by one and tries to show a logical weakness of the Western idea of the spherical earth. First of all, Entsū introduces the idea of earth in the old Western astronomy (geocentrism) as follows:

(The earth is) a sphere uniting the sea and the land and located at the center of the celestial system. . . . (They) regard the hollows on the four (every) surfaces as rivers and seas, the protuberances as mountains, the plain as fields and plowed lands. The size of the earth is as follows: its circumference is 90,000 ri and its diameter is 28,647 ri 159 jō 7 shaku 1 sun.<sup>35</sup>

According to Entsū, the Western astronomy regards the fact that the outward height of the polestar differs on respective places on the earth as a proof of the earth's spherical shape (*chi no seien*). Since 1/360 of 90,000 ri is 250 ri, when we go 250 ri to the south, we will reach the place that is 1 degree south in latitude. When we go 250 ri to the north, we will be at 1 degree north. When we go 250 ri to the south, therefore, the outward height of the polestar becomes 1 degree lower and the south stars appear 1 degree more, and when we go 250 ri to the north, the outward height of the polestar becomes 1 degree higher and the south stars appear 1 degree less. This is an observable proof of the earth's spherical shape. First of all, Entsū criticizes this explanation of Western astronomy featuring an experiment. He proposes the situation that the two signposts are distributed to the north and south ends of 18 ri distance (18 ri represents 180°). Each signpost's height is 3 jō 6 shaku and a big torch light is on each signpost (the two signposts represent the north pole and the south pole). At the middle point of these two signposts, both signposts look the same (this position represents the equator between the two poles). If we go a little to the north, the torch on the north signpost will be a little higher and if we go to the south, it will be lower. The more we go to the south, the lower the north torch becomes and finally it will disappear. The same thing happens in the case of the southern signpost. According to Entsū, therefore, "the reason why the stars in two poles have the lower and higher outward positions is only their distance. The difference of their outward height is not caused by the fact that the earth is spherical."<sup>36</sup>

---

<sup>35</sup> Entsū, *Bukkoku rekishōhen*, vol.2, 32.

<sup>36</sup> *Ibid.*, 33.



Secondly, Entsū criticizes the calculation of the size of the earth in Western astronomy. In the Western earth theory, the distance of 250 ri is convertible to 1 degree of the 360° perimeter of the spherical earth. The perimeter of the earth, therefore, can be calculated by multiplying 250 ri by 360° (90,000 ri). This is a calculation based on an actual survey. According to Entsū, however, "this survey is still far from being considered a proof. Because calculating the latitude from the south to the north by observing the height of the stars at the north and south poles is only to know the distance between the two poles and it is impossible to know the perimeter by doing it. Besides, how could we know the perimeter through the east and the west (by calculating the perimeter from the north to the south)."<sup>37</sup> This calculation is based on the presupposition that regards the shape of the earth as spherical. Citing from many traditional texts that include geographic statements, Entsū criticizes the size and shape of the earth in Western astronomy.<sup>38</sup> Moreover, Entsū criticizes both Chinese and Western astronomy that locate the polestar at the center of the sky. Citing from the historical texts indicating that the outward angle of the polestar changes in different areas, he criticizes a logical weakness of this theory. According to Entsū, if the earth is spherical and the polestar is at the center of the sky, the outward angle of the polestar should never change. Entsū says that "for example, if we put a big torch on the top of a pole, then encircle it, and see the torch from respective positions, the outward height of the torch will be changed due to the distance from the torch. But there is no reason for the difference of the outward angle."<sup>39</sup> Entsū insists that only the Buddhist theory that locates the polestar on the top of *Enbūdai* (s: Jambu-dvīpa) island which is on the southern part of the flat Shumisen world can explain the change of the outward angle.

In the following three criticisms of the Western earth theory, Entsū criticizes the western theories by using his unique concept: *genryō* (actual mass). First of all, he criticizes the theory that regards the perimeter of the earth as 90,000 ri using a pictorial

---

<sup>37</sup> Entsū, *Bukkoku rekish ōhen*, vol. 2, 34.

<sup>38</sup> *Ibid.*, 34-35.

<sup>39</sup> *Ibid.*, 36.

explanation (Figure 68). He says that, if this is so, "the spherical earth theory is completely inconsistent with the earth's actual mass (*genryō*),"<sup>40</sup> because the slope between points A (the top of the earth) and B (an end of horizon) in Figure 68 (45° slope) is too steep for people to stay on the surface. If the Western earth theory is correct, "going up from the horizon to the top of the earth is like climbing a cliff and going down from the top to the horizon is like descending a steep mountain. If we are on the sea, the water of the sea will cascade like a great water fall."<sup>41</sup> In the case of the chord between points A and B, its steepness will be far more great. But the actual figure of the sea is never like this. For Entsū, therefore, the Western theory does not correspond to the earth's actual mass.

In this criticism of the Western earth theory, Entsū completely neglects the idea of gravity. But he also knew Newton's theory of universal gravitation. While introducing the theory of gravitation as an explanation of the reason why everything can stand upright on the surface of the spherical earth, he criticizes the point that the idea of gravity presupposes the rotation of the spherical earth. Entsū concludes that "It is said that the earth rotates once in one day and night. If so, the one rotation of 90,000 ri is faster than electric light (*denkō*). The power of its rotation will blow away giant stones, and the seas and rivers gush out."<sup>42</sup> But this is not the case of the earth's actual situation. Moreover, Entsū indicates that the idea of the vertical orbit of the sun and the moon does not correspond to the actual mass of natural phenomena. The Western astronomy insists that the sun and the moon revolve even under the ground (under the horizon). Entsū demonstrates a logical weakness of this idea by using a pictorial explanation (Figure 55). According to Entsū, the many historical documents say that the earliest morning sun light shines at the top of high mountains. However, if the sun moves vertically as in Figure 55, the horizon should be shined upon

---

<sup>40</sup> Entsū, *Bukkoku rekishōhen*, vol. 2, 36.

<sup>41</sup> Ibid., 37.

<sup>42</sup> Ibid., 40. At the beginning of his explanation of Buddhist geography, Entsū insists that if the 90,000ri earth rotates from west to east once in one day and night, an arrow shot from west to east never hits its target because the speed of the earth's rotation is far faster than that of the arrow (Entsū *Bukkoku rekishōhen*, vol.3, 3). This can be counted as the same type of criticism.

first before the sunlight reaches the top of a high mountain. Following this criticism of the vertical orbit of the sun and the moon, Entsū insists that the horizontal orbit of the sun and the moon is better fit to the earth's actual mass and more valid in explaining the phenomenon that the earliest morning sunlight shines upon the top of a high mountain (Figure 56).

In these criticisms of the idea of a spherical earth, there are many curious explanations from today's point of view. However, evaluating the content of Entsū's explanation from today's scientific standard is not the subject of this paper. It is more significant for our purpose here to know "how" he criticized the Western theory. On this point, it is clear that the correspondence between the theory and actual mass is an emphasis of his argument. Based on these criticisms focusing on the correspondence between the theory of a spherical earth and the earth's actual mass (*genryō*), Entsū developed a Buddhist geography as a theory more precisely corresponding to the actual mass and as a representation of reality.

### **Landscape of the Enbudai Island & the World Map**

As an introductory comment to his Buddhist geography, Entsū introduces the statements from Buddhist scriptures that predicted the emergence of the idea of a spherical earth long ago. According to Entsū, "Buddha's divine vision reaches to the three times (*sanzai* : past, present, and future). (He) quickly and already knew the happenings in the future and had mercy on us in advance, in order to prevent it (the idea of the spherical earth)."<sup>43</sup> Therefore, we can find more comprehensive and reliable geographical teaching in the Buddhist scriptures than that in the Western theory. Citing from the Buddhist scriptures, Entsū constructs the actual mass (*genryō*) of the earth as a generalized form of the Buddhist geography.

First of all, Entsū introduces the landscape of the heaven and the earth in the Shumisen world (*tenchi no taijō*) citing from the Buddhist scriptures (mainly, *Abhidharma*

---

<sup>43</sup>Entsū, *Bukkoku rekishōhen*, vol.3, 1.

*Kusharon*). However, he skips the explanation of the heaven (*ten*) that is the realm of spiritual or divine beings. Even in the previous chapter in which he compared the Indian celestial system with other systems, he only mentioned the comprehensiveness of the spiritual Buddhist system in contrast to the other relative systems. There is no concrete explanation of this realm of universe in *Bukkoku rekishōhen*, while he explains the geography and the movement of the heavenly bodies in detail. Moreover, he does not mention the realm of hell that is a significant part of Buddhist cosmology. In other words, Entsū's Buddhist cosmography dealt only with the realm of human beings or the actual world in the sense of modern realism. In order to think of Entsū's way of conceptualizing the Buddhist worldview, this is also a significant point.

According to the Buddhist scriptures, this world is located on the three discs or rings, made of wind (*fūrin*), water (*suirin*), and metal (*konrin*). The size of the lowest wind disk is unmeasurable and its thickness is 16 oku (s: lakṣa, means 100,000 in the context of the Buddhist scriptures) yujun (or *yuzenna*, s: yojana). The blown clouds accumulate the water above the wind disc and this water also becomes like a disc or ring. The depth of this water disc is 11 oku 2 man yujun. On this water disc, there emerges a mass of metal just like a fat membrane on boiled milk. This is the third metal disc or ring. Its thickness is 3 oku 2 man yujun. The size of water and metal discs are the same. Their perimeters are, according to Entsū, 36 oku 1 man 350 yujun. On the third metal disc, there are nine mountains (or mountain ranges) and eight seas (*kusen hakkai*). The eight circles of seas and the eight circles of mountain ranges surround the enormous mountain at the center called *Shumisen* (*Someiro*, *Myōkō*, s: *Sumeru*). The width and height of mountain ranges and the width and depth of the seas are reduced in half one by one from the center to the outside. Most mountain ranges and seas have a square shape and only the outer most mountain range (*tetsuisen*) has a circular shape. There are four major islands on the outer most sea surrounded by the outer most mountain range. These four islands are distributed in four directions. Each one of these four major islands (*daishū*) also has two middle islands

(*chūshū*) and each middle island is surrounded by the five hundred little islands (*shōshū*). Our world (the realm on the ordinary world map) is located on the south major island called *Enbudaishū* (*Senbushū*), the two middle islands accompany the Enbudai island, *Shamarashū* and *Harashamarashū*, and a number of little islands surround these middle islands.

Entsū explains the Landscape of Enbudai island in comparison with the Western world map (*chikyūzu*, *bankokuzu*, or *yochizu*)<sup>44</sup> and says that "Checking the world map (*chikyūzu*) brought by Westerner, its three continents (*sanshū*), Asia, Europe, and Africa, are what is called the Enbudai island (*Senbushū*) in India."<sup>45</sup> According to Entsū, the shape of the Enbudai island is a reversed trapezoid that is close to a triangle. The width of its north, east, and west sides is 2000 yujun, but its south side is only 3.5 yujun. Entsū says that "The three continents depicted on the world map, such as Asia, are originally one land. Its east, north, and west sides have almost the same width. Its south side is narrow and has a pointed shape."<sup>46</sup> Therefore, the Western world map corresponds to the landscape of the Enbudai island. America and Antarctica which were found in the sea by the Westerners in recent years are the two middle islands that accompany the Enbudai island. Even though the Westerners explored the new world and revised their world map based on the new knowledge, according to Entsū, it is only a part of the vast world and comprehensive knowledge captured by Buddha's divine vision.

This explanation of the landscape of Enbudai island is a geographical theory that Entsū generalized from Buddhist scriptures. In order to demonstrate the correspondence between this theory and the actual mass (*genryō*), Entsū points out an inconsistency between this theory and the actual mass just as he mentioned in the criticism of the idea of the spherical

---

<sup>44</sup> In *Bukkoku rekishō hen*, Entsū refers to Matteo Ricci's famous world map (*bankokuzu*). He also mentions *Chikyūzu* (literally, the picture of the earth) brought recently by a Westerner. Since Shiba Kōkan published his *Yochi zenzu* (the picture of the earth) in 1792 inspired by the world map brought by a Westerner, Entsū might have seen the same kind of map or Kōkan's world map.

<sup>45</sup> Entsū, *Bukkoku rekishōhen*, vol.3, 6.

<sup>46</sup> *Ibid.*, 7.

earth and solves the problem by logically explaining the mechanism of natural phenomena. Entsū says that "some people have doubt and say that if there actually were Mt. Sumeru and the sun and the moon orbit around its mountain side, indeed, the length of day and night in every country should automatically be the same and there should never be the difference in their length."<sup>47</sup> However, the length of day and night is changed in different places and there are many documents that even mention the existence of the northern realm which has a half year of night and a half year of daytime. Entsū calls this realm of the world the night country (*yakoku*). These natural phenomena are inconsistent with the flat worldview and the horizontal orbits of the sun and the moon. By concentrating on the issue of the night country and showing the mechanism of this natural phenomenon in terms of Buddhist worldview, Entsū tries to demonstrate the correspondence between his theory and the actual mass.

Entsū insists that the existence of the night country can be explained by the change of the height of the sun's orbit and the landscape of the Shumisen world. First of all, Entsū explains the reason why the night country has a half year of daytime. According to Entsū, the perimeter of the sun's orbit is 14 oku 43,270 (1,443,270) yujun. If we divide this perimeter by 100 following the time system that divides 1 day into 100 koku (a unit of time), the distance of the sun's movement in 1 koku is 14,432.7 yujun. Since the width of Shumisen's mountainside is 20,000 yujun, the sun is covered by the mountainside of Shumisen only for 1.38574 koku in one day, because 20,000 yujun is almost 1.38574 times longer than the distance of the sun's movement in 1 koku. The early morning sunlight (*kyokki*) appears 2.5 koku before the actual sunrise and the late evening sunlight (*yoki*) remains until 2.5 koku after the actual sunset. From the same reasoning, we should be able to see previous and remaining sunlight for 2.5 koku before and after the sun is covered by the mountainside of Shumisen. Since the mountainside of Shumisen covers the

---

<sup>47</sup> Entsū, *Bukkoku rekishōhen*, vol.3, 9.

sun less than 2.5 koku (1.38574 koku) per day, we can see the sunlight 24 hours a day in the night country, as long as the sun moves around the mountain side of Shumisen.

However, the height and location of the sun's orbit are changed according to the seasons. The sun revolves around the Shumisen once a day and passes the four major islands on the outermost sea from east to west. When the sun is on the south Enbudai island, it is the sunset of the east island, the sunrise of the west island, and the night of the north island. In the winter of the Enbudai island (it is the summer of the north island), the sun passes the outermost or southern most point of the island (The directions of the four islands are determined by their directions toward the Shumisen. The direction facing the Shumisen on each island is considered the north of each island) and also goes through the lowest point. In the summer of the Enbudai island, the sun passes the innermost or northern most point and goes through the highest point. When the sun goes through the lower point of the Enbudai island (the winter season of the Enbudai island), the sun passes the higher point on the north island (the summer season of the north island). Therefore, the part of the Shumisen that covers the sunlight each day also becomes higher in the winter of the Enbudai island. Since the upper part of the Shumisen has a reversed triangle shape and the top of the mountain is the widest, the part of the Shumisen that covers the sunlight each day becomes wider in the winter of the Enbudai island, because the sun goes through the higher point and the wider part of the Shumisen in the north. The width of its peak is 84,400 yujun (over four times wider than the width of its mountainside). So the sunlight from the northern part of Shumisen (nighttime sunlight) cannot reach the Enbudai island in the winter of the Enbudai island.

Moreover, there is a high mountain called *Konron* between the southern and northern parts of the Enbudai island. Since the sun goes through the lower and southern point of the Enbudai island in the winter of the Enbudai island, the daytime sunlight also cannot reach the particular region of the northern Enbudai island, because it becomes shaded by the *Konron*. The *Konron* also prevents the night sunlight that reaches to the northern regions

of the Enbudai island in the summer from reaching the southern regions of the Enbudai island (the three continents, America, Antarctica, and so on). Therefore, in this northern region (the night country), in which the nighttime sunlight is covered by the peak of Shumisen and the daytime sunlight is covered by the Konron in the winter of the Enbudai island, people can barely see the sunshine in the winter season. Entsu explains this mechanism by using pictorial representations (Figures 57, 58, and 60). According to Figure 60, the region of the night country is also surrounded by other high mountains in the east and west. The low sunlight in the winter of the Enbudai island, therefore, cannot reach the night country neither from the east nor from the west.

By solving the same level question that he raised in the section of the criticism of the spherical earth theory and showing the correspondence between his theory and the actual mass in the sense of modern realism, Entsu tried to demonstrate the supremacy of Buddhist geographical theory as a scientific theory. This theory of night country might sound strange by today's scientific standards. However, it was taken seriously by scientists of Entsu's period and his theory inspired much support and reaction.

In the following section, Entsu explains the geography of Enbudai island more precisely. First of all, he establishes a numerical measure from Buddhist scriptures, *yujun* or *yuzenna*, as a realistic measure that represents an actual distance. The length of *yujun* or *yuzenna* (s: *yojana*) varies in each Buddhist scripture and the distance and the size of the region mentioned in the Buddhist scriptures means rather a symbolical mass than an actual mass in many cases. Some scriptures say that 1 *yujun* is 40 ri, but other scriptures regard 1 *yujun* as 30 ri or 16 ri. Entsu tries to establish a standard measure that comprises these variations by referring to the calculation of the general astronomy. According to Entsu, general astronomers calculate the latitudinal distance between the southern most and northern most paths of the sun as 47°. 1 degree difference corresponds to 250 ri on the surface of the earth. Multiplying 250 ri by 47°, it will be 11,750 ri. This is the distance between the southern and northern most passes of the sun on the surface of the earth



calculated by general astronomers. According to *Risseabidonron*, the distance between the southern most and northern most paths of the sun is 290 yujun. Dividing the distance between the southern most and northern most paths of the sun on the surface of the earth (11,750) by 290 yujun, it will be 40.186 ri. This is the actual distance of 1 yujun converted to Entsū's contemporary measuring system and it corresponds to the statements in some Buddhist scriptures that regard 1 yujun as 40 ri. Entsū concludes that the 0.186 difference between the calculated distance (40.186) and the distance from the Buddhist scriptures (40 ri) should be an error of measurement and determines this conversion table (1 yujun: 40 ri: almost 160 km) as the standard measure of the Buddhist geography.<sup>48</sup>

According to Buddhist scriptures, there are vast northern regions on the Enbudai island. In the north of the night country, there are seven forests and seven rivers. The width of each forest from south to north is 50 yujun (2000 ri, almost 8000 km) and some Buddhist scriptures say that its ends reach the eastern and western seashores. The width of each river from south to north is also 50 yujun. Some Buddhist scriptures say that its ends also reach the eastern and western seashores. The sum of the widths of these seven forests and seven rivers from south to north, therefore, is 700 yujun (28,000 ri, almost 112,000 km). These enormous regions are out of the human world. Though the Western ships reached the new world, their discovery is just a tiny part of the enormous world and the Western ships never reached these regions of spiritual beings. The ice sea (*hyōkai*, the Arctic Ocean) on the Western world map is the southern most river of the northern seven rivers. According to Entsū, the distance between the southern end and northern end of the Enbudai island is 2,000 yujun (80,000 ri, 320,000 km). The Enbudai island is far bigger than the world on the modern Western map.

Figure 69 is the map of the Enbudai island based on Entsū's geographical theory. Japan and southeast Asian islands are on the south east (lower right) sea of Enbudai island. The southeast region of Enbudai island facing Japan is Asia. The region from the

---

<sup>48</sup> Entsū, *Bukkoku rekishōhen*, vol.3, 25-26

southwest to the southern end of the island is Africa, and Europe is located on the upper part of Africa. Mt. Konron is located between Asia and Africa. Antarctica is on the southern end of the map just as on the modern Western map and it represents one of the two middle islands that accompany the Enbudai island. No name of America is on this map, but, according to the above mentioned geographical theory of Entō, either one of the islands that are on the eastern and western ends of the map should be a part of America because he sometimes mentions that America is one of the two middle islands accompanying the Enbudai island. It seems to me that the island at the western end is North and South America. If so, since Australia was already on the usual world map in Entō's period, the island on the east end may be a part of Australia. The three lines on the lower part of the map represent the orbits of the sun on the days of summer and winter solstices (upper and bottom lines) and on the days of spring and autumnal equinoxes (middle line).

Compared with Matteo Ricci's world map (Figure 70) and Shiba Kōkan's world map (Figure 12) that Entō mentions in his *Bukkoku rekishōhen*, it is obvious that Entō created this map of Enbudai island under the great influence of modern Western geography not only in terms of Entō's usage of western geographical words, but also in terms of his conceptualization of geographical images. Even though it is not completely accurate, Entō's visual image of the Enbudai island basically corresponds to the numerical values and calculation in Entō's geographical theory, and it is depicted as a representation of the world as it is. This conceptualization of the Buddhist worldview as a representation of the real world was Entō's significant invention that represented a shift of the style of cosmography in the modern period.<sup>49</sup>

---

<sup>49</sup> For example, Figure 71 is the map of the Enbudai island that was depicted in 1364 based on the statements in Genjō's *Daitōseiikiki*. Both this map and Entō's map are the picture of the Enbudai island as a world map. However, there are significant differences between the two maps. First of all, there is no concept of geography in the map of Figure 71. In this picture, there is no astronomical explanation (the orbits of the sun) and no explanatory theory of natural phenomena (for example, the high mountains surrounding the night country) for establishing the plausibility of this map as a geographical representation of the world that appears on Entō's map. Moreover, while the distance between the regions on the map and the location of each region corresponds to the geographical theory in Entō's map, the mountains and regions are more casually written in Figure 71. While Entō's world map was a conceptualization of the Buddhist worldview in terms of the modern geography, the map of Figure 71 was a visualization of the

## **Buddhist Calendar System**

In the fourth chapter called *Rekihō* (calendar system), Entsū explains the calendar system and the system of the movements of heavenly bodies that he generalized from the Buddhist scriptures. These systems are the essential parts of the Buddhist astronomy and this single chapter forms almost half of the entire *Bukkoku rekishōhen* (5 vols.). *Bonreki* (Buddhist or Indian astronomy) in a narrow sense means this part of the text.

First of all, Entsū introduces the Buddhist calendar system that he calls *Bonreki*. According to Entsū, *Bonreki* is not a name of a single calendar system, but a comprehensive category that includes varieties of astronomical theories. *Bonreki* is a category such as *Kanreki* (Chinese calendar system), *Seireki* (Western calendar system), *Kōkoku reki* (Japanese calendar system), and *Kaireki* (Uighur calendar system), and any kind of astronomical theories relating to Buddhism or having their roots in India are called *Bonreki* (Buddhist or Indian calendar system). Therefore, there are varieties of theories in *Bonreki*, though they are basically the same, and Entsū tries to reduce these various teachings into a univocal calendar system.

According to Entsū, there are twelve different calendar systems in the whole Buddhist scripture (*daizō*). First of all, Entsū shows their difference referring to the time systems in the twelve different Buddhist scriptures. According to *Risseabidonron*, 1 day consists of 30 *mukyūta*. 1 *mukyūta* is also divided into 30 *lāba*. The length of daytime increases or decreases by 1 *lāba* per day, according to the movement of the sun. The longest single daytime of a year is 18 *mukyūta* and the shortest is 12 *mukyūta*. The length of nighttime is

---

travel writing in Genjō's *Daitōseiikiki*. In this sense, Entsū's map of the Enbudai island was a reinterpretation of the Buddhist teaching in terms of modern realism and it is qualitatively different from the world map of Figure 71.

On the point that Entsū's geography attaches importance to the correspondence between its theory and the actual mass (*genryō*) and regards itself as an accurate representation of reality, Entsū's style for writing the world has a similar explanatory method to modern realism. By using this realistic rhetoric for writing the world, Entsū converted the symbolical Buddhist cosmology into a closed system of Buddhist geography. The obscure numerical measurements, such as *yujun*, were turned into a precise measure of actual distance and the symbolic numerical values, such as the 50 *yujun* width of all seven rivers and all seven forests, were regarded as an exact and actual measurement.

also changed due to the change of the length of daytime. At the time of equinox (spring or autumnal), each length of daytime and nighttime becomes 15 *mukyūta*.

In the popular theory in India, 1 day consists of 6 *ji*, and each daytime and nighttime is respectively divided into 3 *ji*. In another theory, 1 day consists of 30 *ji*. 24 *ji* of 30 *ji* are fixed and 6 *ji* are flexible. Therefore, the longest daytime is 18 *ji* and the shortest is 12 *ji*. 1 *ji* is also divided into 30 *koku* and, therefore, there are 180 *koku* in 6 *ji*. From the winter solstice to the summer solstice, the daytime increases by 1 *koku* per a day. Therefore, the daytime increases by 6 *ji* (180 *koku*) in 180 days. This is the day of the summer solstice and the length of daytime starts to decrease by 1 *koku* from this day.

According to *Nichizōkyō*, 1,600 *setsuna* form 1 *kāra* and 60 *kāra* form 1 *mokorita*. 1 day consists of 30 *mokorita*. This time system is almost the same as that of Indian popular theory. In *Matōgakyō*, 60 *setsuna* form 1 *lāba* and 30 *lāba* form 1 *ji*. 1 *ji* is one unit of time in the system that divides 1 day into 30 units. Each one of 30 units has an individual name.<sup>50</sup> Even though they use the same names as a unit of time, the system of calculation is different in *Nichizōkyō* and *Matōgakyō*. In *Daibibasharon*, 120 *setsuna* is 1 *tansetsuna* and 60 *tansetsuna* form 1 *lāba*. 30 *lāba* (7,200 *setsuna*) form 1 *mukorita*. (216,000 *setsuna*). 1 day consists of 30 *mukorita*. (6,480,000 *setsuna*). This is also different from the previous two time systems. In *Shazukangyō*, 15 *shun* is called 1 *sotsu*. 20 *sotsu* form 1 *ji*. 30 *ji* is called 1 *shuyu*. 1 day consists of 30 *shuyu*. This is the similar system to that of *Nichizōkyō*. Moreover, in *Daitōseiikiki*, 120 *setsuna* are regarded as 1 *sosetsuna*. 60 *sosetsuna* form 1 *lāba* and 30 *lāba* form 1 *mukorita*. 5 *mukorita* is 1 *ji* and 1 day consists of 6 *ji* (3 *ji* in the daytime and 3 *ji* in the night). This is also close to the system of *Nichizōkyō*. In *Shazukangyō*, there is another system that regards 60 *setsu* as 1 *gen*. and 20 *gen* as 1 *shuyu*. 1 day consists of 30 *shuyu* in this system. In *Makasōgiritsu*, 20 *nen* is called 1 *shun*. 20 *shun* form 1 *danshi*. 20 *danshi* is called 1 *razō*. 20 *razō* form 1 *shuyu*. The longest daytime of year is 18 *shuyu* and the shortest is 12 *shuyu*.

---

<sup>50</sup> Entsū, *Bukkoku rekishōhen*, vol.3, 37-38.

In Uighur calendar, 1 day is divided into 24 hours. 1 hour consists of 60 minutes. This system also has its origin in the Indian calendar system. In *Shucchōgyō*, 1 day is divided into 120 *jī*. In *Monjugiki*, 100 *danshi* is regarded as 1 *shobunji* and 4 *shobunji* form 1 *chūbunji*. 4 *chūbunji* form 1 *ibun* and 1 daytime consists of 4 *ibun* and 8 *ibun* form 1 day. Moreover, there is another system in this scripture that regards 10 *nyūsoku* as 1 *metsubun*. 10 *metsubun* form 1 *setsuna* and 10 *setsuna* form 1 *shuyu*. 1 day consists of 100 *shuyu*.

Entsū says that "The realm of India can be divided into over 7,000 countries and India has the longest history in the world. Therefore, how could there be a limit of tens or even hundreds of times to the number of times they changed their calendar system. It is completely no wonder that the calendar system is different in the five major divisions in India. That is why there are many different calendar systems in the Buddhist scriptures. This is because the location where the scripture was written and the person who wrote the scripture are not always the same."<sup>51</sup> Even though the basic astronomical principle is unchanged, the calendar systems are varied owing to the difference of the location where calendar was created. In order to show an example, Entsū takes up the difference between the Indian calendar system and the Chinese calendar system. Since China is 58,000 *ri* away from India, there are seven days difference between the Chinese calendar system and the Indian calendar system. This is because the sun and the moon horizontally orbit on the flat Shumisen world (for example, the winter on the southern island is the summer on the northern island) and in this sense, the difference of calendar systems in various locations is also a proof of the existence of the flat world system.

Moreover, Entsū insists that the divisions of year in Chinese and Japanese calendar systems, such as *keihei* (the first days of spring, summer, autumn, and winter), the twelve zodiacal signs, and *saitoku hasshōshin* (the Shinto deities relating to the stars), are originally from India. While showing that the principle theories always have their origin in

---

<sup>51</sup> Entsū, *Bukkoku rekishōhen*, vol.3, 36.

India, Entsū also introduces the three various Indian theories that make a seasonal division of the year (six times, four times, and three times). Even though the basic principles, such as the movement of heavenly bodies, are always the same, the calendar systems can be set up in various ways in different locations. Entsū and his disciples created the model of the Shumisen world that visualized these basic principles and the actual calendar corresponding to the Japanese situation. They also spread the Bonreki (Buddhist astronomy) movement in the later period.

Even though Entsū does not introduce the actual calendar of the particular year in *Bukkoku rekishōhen*, he sets up a basic calendar system generalized from the Buddhist scriptures. First of all, Entsū indicates a basic characteristic of the Buddhist calendar system in comparison to the three major calendar systems. According to Entsū, the Western calendar system is based on *Kōseinen* (the fixed-stars calendar year). In this calendar system, the length of a year is determined by the sun's cycle of passing the fixed-stars. 1 year consists of 365 days. Since each year produces over 5 hours of surplus time and it becomes over 23 hours in four years, 1 day is added in the second month of the leap year. The length of a year in Uighur's *Taiyōnen* (the solar calendar year) is decided by the sun's cycle of passing the zodiac. The year starts on the winter solstice and ends on the next winter solstice. 1 year consists of 365 days and each sign of the zodiac is distributed into the twelve months. In order to offset the surplus time produced in each year, 1 day is added on the last month of the leap year. The third calendar year is *Taiininen* (the lunar calendar year). In this system, the length of a year is determined by the cyclical waxing and waning of the moon. 1 year consists of 354 days and 1 extra day is added on the twelfth month of the leap year.

Following these categories, Entsū says that the Buddhist calendar system is a solar and lunar calendar system (*in'yō gōreki*). The seasonal divisions of the year (*sekkī*) is determined by the latitudinal change of the sun, but the length of the year and month (*kinen kigetsu*) is based on the cycle of the waxing and waning of the moon. An extra month is

added in the leap year. According to Entsū, this system is close to those of China and Japan. Figure 72 is the cycle in which the moon meets each one of the 28 stars on the orbit of the moon (*nijūhasshuku*). On each day in the two cycles from the next day of full moon to the one day before the new moon (*kokugatsu*) and from the new moon to the full moon (*hakugatsu*), the moon meets one of the 28 stars. Following the statement in *Daitōseiikiki* that regards January 16th in the Chinese calendar as the first day of the year in the Indian calendar, Entsū also thinks that the first day of year in the Indian calendar corresponds to January 16th of the regular lunar calendars in China and Japan. Moreover, Entsū summarizes the calendar system in *Seishukuhon* of *Nichizōkyō* as a basic Buddhist calendar.<sup>52</sup>

In the first month of the year, the full moon meets *kaku* (one of the 28 stars on the path of the moon). The daytime is 15 ji and the night time is also 15 ji. The sun passes Aries. This is the season of spring equinox. This month is called *Kakugetsu* in the Indian calendar. In the second month, the full moon meets *shi*. The daytime is 16 ji and the nighttime is 14 ji. The sun passes Taurus. This month is called *Shigetsu*. In the third month, the full moon meets *Shin*. The daytime is 17 ji and the nighttime is 13 ji. The sun passes Gemini. This month is called *Shingetsu*. The fourth month is called *Kigetsu*. The full moon meets *Ki* and the sun passes Cancer. The daytime is 18 ji and the nighttime is 12 ji. In the fifth month, the full moon meets *Jo*. The daytime is 17 ji and the nighttime is 13 ji. The sun passes Leo. This month is called *Jogetsu*. In the sixth month, the full moon meets *Shitsu*. The daytime is 16 ji and the nighttime is 14 ji. The sun passes Virgo. This month is called *Shitsugetsu*. The seventh month is called *Rōgetsu*. The full moon meets *Rō* and the sun passes Libra. The daytime is 15 ji and the nighttime is also 15 ji. This is the season of autumnal equinox. In the eighth month, the full moon meets *Kō*. The daytime is

---

<sup>52</sup> Even though Entsū refers to a number of Buddhist scriptures in his *Bukkoku rekishōhen*, *Nichizōkyō* and *Risseabidonron* are the most basic sources of his astronomical theory. Especially on the calendar system, he frequently refers to *Nichizōkyō*. The system of the movements of heavenly bodies that is the main subject of the later half of the fourth chapter of *Bukkoku rekishōhen* is mainly based on the statements in *Risseabidonron*.

14 ji and the nighttime is 16 ji. The sun passes Scorpio. This month is called *Kōgetsu*. In the ninth month, the full moon meets *Shi*. The daytime is 13 ji and the nighttime is 17 ji. The sun passes Sagittarius. This month is called *Shigetsu*. The tenth month is called *Kigetsu*. The daytime is 12 ji and the nighttime is 18 ji. The full moon meets *Ki* and the sun passes Capricorn. This is the season of the winter solstice. In the eleventh month, the full moon meets *Sei*. The daytime is 13 ji and the nighttime is 17 ji. The sun passes Aquarius. This month is called *Seigetsu*. In the twelfth month, the full moon meets *Yoku*. The daytime is 14 ji and the nighttime is 16 ji. The sun passes Pisces. This month is called *Yokugetsu*.

Just as Entsu's geography of the Enbudai island was depicted as a representation of reality (in the sense of modern realism) excluding the mystical realm, this calendar system from *Nichizōkyō* also excludes its astrological factors and also excludes its characteristics as a text of religious rituals that are essential parts of the original text. The distribution of 28 stars and the zodiac and their moving cycle are introduced as a system that has nothing to do with the destiny of people and the religious rituals. Entsu's introduction of this calendar system is a reconstruction of a Buddhist calendar system as a theory corresponding to scientific observation. This tendency becomes more obvious in his explanations of *nijūhasshuku* (28 stars on the path of the moon) and *jūnikyū*. (12 constellations on the path of the sun).

The observation of *nijūhasshuku* is highly significant in the Buddhist calendar system because they have a close relation with the movement of the moon that determine the date and month of the year. According to Entsu, however, *nijūhasshuku* of the Indian astronomy is not completely the same as that of the Chinese astronomy and even in the Buddhist scriptures, there are various theories on *nijūhasshuku*. Entsu compares the theories in the Buddhist scriptures with the Chinese theory and tries to clarify a generalized figure of *nijūhasshuku* as the real stars that are actually observable. In *Bukkoku*



*rekishōhen*, Entsū examines each case of *nijūhasshuku* in detail and constructs a generalized picture of each star.

For example, *Ki shuku* (the fifth star of the seven stars at the east gate) is regarded as a combination of four stars in China, but considered a combination of three stars in India. Some Indian theories say that its shape is like a swastika. According to *Shukuyōgyō*, *Ki* consists of the four stars and its shape is like a bottle. *Maōgakyō* says that *Ki* consists of the three stars and its shape is like a bottle. According to *Shatōgankyō*, its shape is like *kōshaku* (a hook shaped ruler). In China, *Ki* is regarded as a combination of the five stars, and its shape is like Figure 73-a (sometimes, it is also considered a combination of the four stars). Some Indian theories say that its shape is like Figure 73-b or 73-c. Entsū explains this variation as follows:

Both *Shukuyōgyō* and *Maōgakyō* say that its shape is like a bottle. Its bottle shape could be like this (Figure 73-d). The misobservation of the four stars as the three stars is probably the reason why *Maōgakyō* says that *Ki* consists of the three stars. It already says that its shape is like a bottle. Therefore, the reason why *Shazukangyō* says that its shape is like a hook shaped ruler is that it took only three of the four stars (Figure 73-e).<sup>53</sup>

As obvious in this explanation, Entsū generalized various teachings in the Buddhist scripture and tried to establish a standard theory of "Buddhist astronomy." As he tried to establish this standard theory in comparison with the Chinese astronomy and even with the modern Western astronomy, the basic criterion of his generalization was a scientifically observable reality. The variations in the Buddhist scriptures are reduced to the misobservation and miscalculation of their editors or to the different conditions of observation, such as the difference of location. The stars in the sky themselves are the unchangeable reality and the variation of teaching on these stars are the result of observational error.

---

<sup>53</sup> Entsū, *Bukkoku rekishōhen*, vol.4, 17.

In this sense, Entsū's Buddhist astronomy was a reconstruction of the astronomical statements in the Buddhist scriptures, which originally had many astrological meanings, as an astronomical theory corresponding to the scientific observation. The originally polyvocal and metaphorical discourse in the Buddhist scriptures was turned into a univocal system and the plausibility of this univocal system was decided by the correspondence between this system and the observable reality. On this point, Entsū's Buddhist astronomy was a new interpretation and reconstruction of Buddhist teaching in terms of modern realism. Just as his geography depicted the Enbudai island as a homogeneous space (extended substance) and excluded the realm beyond the sense of modern realism, intentionally or unintentionally, Entsū's establishment of the Buddhist astronomy led to a separation between astronomy and astrology. The stars in the sky now became a scientifically observable entities and lost their spiritual meanings.

After the detailed analysis on *nijūhasshuku*, Entsū continues a similar analysis on the zodiac (*jūnikyū*). These stars and constellations are now separated from the stories that accompanied each of them and are turned into a part of the univocal system. Showing the correspondence between this system and the observable reality is the basic rhetoric of Entsū's Buddhist astronomy and is more precisely and clearly presented in his explanation of the movements of the heavenly bodies.

### **Movements of Heavenly Bodies**

While citing from a number of Buddhist scriptures, Entsū explains the astronomical system in the Shumisen world mainly referring to *Risseabidonron* which is the Buddhist scripture that includes a systematic explanation of the movement and appearance of the sun and the moon. According to *Risseabidonron*, the sun (*nikkyū*) has one hundred eighty different revolving paths and the moon (*gekkyū*) has fifteen different revolving paths. The distance that the sun passes to complete the twelve paths is equal to the distance that the moon passes to complete one path, though the sun and the moon share the same moving

track. In other words, the moon slides across the track twelve times faster than the sun. So the sun completes one cycle of changing the revolving paths (a round trip of 180 paths) in 1 year (360 days), while the moon completes one cycle (a round trip of 15 paths) in 30 days. The sun and the moon repeat changing their paths between the innermost path (*nairo*) and the outer most path (*gairo*). The innermost path is the circle set by the diameter linking the northern most point of the sun's movement in the south of Enbudai island and the northern most point in the north of Utsuzenotsu island (the north direction in each major island of the Shumisen world is the direction toward the center: Mt. Sumeru). The outer most path is the circle set by the diameter linking the southern most point of the sun's movement in the southern island and the southern most point in the northern island. Even though *Risseabidonron* mentions only these two paths, Entsū also introduces the middle path called *jitsugetsu kaishōrin* from another Buddhist scripture. This is the circle set by the diameter linking the middle points of the sun's movement in the northern and southern islands and Entsū call it *sekidō* (Figure 65). This setting of the three paths seems to correspond to the theory of the Chinese astronomy text, *Shūhi sankei*, which features a similar flat worldview to that of Buddhism.

The moon glides across its revolving paths (*bōgyō*, sliding movement) faster than the sun, but revolves round its path (*shūgyō*, revolving movement) slowly. The sun glides slowly, but revolves faster. Therefore, the sun and the moon meet sometimes, but move separately in many cases. The sun revolves 48,080 *yujun* faster than the moon per day. Multiplying this distance by 30 days, it will be 1,441,200 *yujun*.<sup>54</sup> This is the perimeter of *nairo* and, therefore, the sun and the moon are united in every 30 days. The path of the sun is called *kōdō* and the path of the moon is called *hakudō*.

The waxing and waning of the moon is caused by these movements of the sun and the moon. As the sun gets closer to the moon, the moon is gradually covered by the shadow of

---

<sup>54</sup> Actual description in *Risseabidonron* and *Bukkoku rekishōhen* is 14 oku 42,400 *yujun*. Even though Oku is a unit of number indicating 100 million in today's Japanese standard, it frequently means 100 thousand in the Buddhist scriptures.

the moon itself that was caused by the strong sunlight (3.333... yujun per day). Both the sun and the moon radiate their own light, but compared with the sunlight, the moonlight is very weak. So as the sun approaches the moon, the strong sunlight creates the shadow of the moon itself on the surface of the moon. This shadow, which increases its area by 3.333... yujun per day, completely covers the surface of the moon, whose width is 50 yujun, in 15 days. This is the day of new moon (*kokuhan* or *kokugetsu*), and the moon and the sun are at the same position on this day. When the sun revolves after the moon, the shadow appears in the rear part of the moon and after the sun leaves the moon behind, the shadow appears in the front part of the moon. The sun and the moon reach the opposite positions 15 days after the new moon and the moon is completely freed from the shadow caused by the sunlight. This is the day of the full moon (*hakuhan* or *hakugetsu*).

Entsū also refers to the formation of the sun and the moon citing passages from *Risseabidonron*. According to *Risseabidonron*, the sun and the moon are the circular palaces on which the numerous divine beings live. The sun mainly consists of fire and the moon mainly consists of water. The light at the bottom of the sun and the moon is brightest and lights the earth. To the question whether the sun and the moon are the residence of the divine being or not, Entsū concludes that "if the divine beings (*kami*) live in the steep mountains, it is no wonder that the spiritual masters live in these bright spiritual lights (*reiki*: the sun and the moon)."<sup>55</sup> This is the only detailed comment on the existence of divine beings in *Bukkoku rekishōhen*. Since Entsū systematized the movement of the sun and the moon based on the direct and literal citations from *Risseabidonron*, he probably needed to explain this part of the text too. As he undoubtedly accepts the existence of the divine beings on the sun and the moon, his basic project was not to deny the existence of the spiritual and transcendental beings. We should notice that what forced exclusion of the realm of spiritual beings from his cosmography and made his theory modern realistic was

---

<sup>55</sup> Entsū, *Bukkoku rekishōhen*, vol.4, 36.

not his cosmological consciousness, but his framework (or discourse) for writing a cosmography, such as the discourse of modern astronomy and geography.

In the latter part of the text, Entsū introduces another theory of the waning and waxing of the moon from the esoteric Buddhist scriptures that considers the movement of the divine beings on the moon as the cause of this movement and explains this theory as follows:

It is already said in this scripture (*Risseabidonron*) that the bottom light (of the moon) is the brightest. The light that lights on the earth is this treasure light. How could it be related to the movement of the divine beings living in the palace that is 2,000 ri (50 yujun) higher (than the bottom of the moon). Therefore, it is clear that the theory that I introduced here and that regards the divine being as the cause of the waxing and waning of the moon is concerned with the light seen from the side of the moon. This never explains the visible experience of human beings. Therefore, the cause of the waxing and waning of the moon has been completely explained by the statements in *Risseabidonron*.<sup>56</sup>

Only beings who can see the light of the moon from its side are the divine or spiritual beings living on the top or mountainside of *Shumisen*. The Buddhist scriptures are the sacred text captured by Buddha's divine vision and their comprehensive teaching also covers the realm of spiritual or divine beings that cannot be seen by the human vision. Therefore, this theory explaining the vision of the divine beings is also included in the Buddhist scriptures. While admitting the existence of the realm beyond the human experience, Entsū still systematizes the Buddhist astronomy as the issue of human experience by limiting its range of explanation to the realm of human experience.

Even though the setting of the day and month is based on the moving cycle of the moon, the seasonal change is dependent on the movement of the sun which is different from that of the moon. According to *Risseabidonron*, the time discrepancy between the two cycles is 1/60 day per day. This discrepancy becomes 1 day in 2 months, 6 days in 1 year, and 30 days in 5 years. So a leap month needs to be added in every five years to fill out this discrepancy. Moreover, the four major islands on the outer most sea in the *Shumisen* world

---

<sup>56</sup> Entsū, *Bukkoku rekishōhen*, vol.5, 34

always have different times due to the movement of the sun. The noon of the south Enbudai island is the midnight of the north Utsuzenotsu island, the dawn of east Butsubodai island, and the dusk of the west Kuyani island (Figure 64). Since the revolution path of the sun is frequently changed within the 1 year cycle, the season of the four islands is also different. When the sun passes the northern most point of the southern island, the sun passes the middle points of the eastern and western islands and passes the southern most point of the northern island (the north of the four islands is the direction toward the center). When the sun passes the northern most point, the sun also passes the highest point. This is the summer solstice. The sun passes the south most and lowest point on the day of the winter solstice and passes the middle points (both direction and height) on the days of the spring and autumnal equinoxes. Therefore, the summer solstice of the southern island is the autumnal equinox of the eastern island, the winter solstice of the northern island, and the spring equinox of the western island (Figure 63). According to Entsu's explanation, the movement of the sun in the Shumisen world is governed by a universal law that can be explained systematically.

This system of the movement of the sun is more concretely explained by using the numerical values cited from *Risseabidonron*. The sun has 180 different paths and the moon has 15 different paths. The diameter of the inner most revolving path of the sun and the moon (*nairo*) is 480,800 yujun and its perimeter is 1,442,400 yujun. The diameter of the outer most path (*gairo*) is 481,380 yujun and its perimeter is 1,444,140 yujun. The diameter of the middle path (*jitsugetsukaishōrin* or *sekidō*) is 481,090 yujun and its perimeter is 1,443,270 yujun. The revolving path of the sun is divided into 360 *do* (*tendo*). 1 *do* is divided into 60 *hun* and 1 *hun* is also divided into 60 *byō*. *Byō* has two more subcategories: *bi* and *sen*. Converting 1 *do* into the actual distance, it will be 4,009.833 yujun that is 1/360 of the perimeter of the basic standard of the sun's daily revolution (the same as the middle path). The distance of the actual daily movement of the sun (*Taiyō* or *hi no heikō*) is 1,464,422.77 yujun. This is 21152.77 yujun more than the 360° circle set as

the sun's standard revolution. Converting this distance into 360 *do* , the sun moves 365 *do* 16 *hun* 57 *byō* 27 in 1 day. That is, the sun moves 5 *do* 16 *hun* 57 *byō* 27 more than the 360° circle set for calculating the sun's daily revolution.

Moreover, the sun's revolving path slides 290 *yujun* in 1 year (*nanboku no ido*). From the summer solstice to the winter solstice, the sun's path slides from north to south in 180 days and it slides from south to north in another 180 days. The movement of the sun is explained by the calculation of these numerical values as a logically predictable system. In the later period, Entsū created a miniature model of the Shumisen world (*Shumisen gi*) corresponding to the calculation of these numerical values and more clearly visualized this system. Entsū also introduces the system of the Buddhist style water watch (*rōkoku no hō*) and the Indian calendar system supported by measuring the length of shadow (*sokueihō*). In Entsū's Bonreki theory, therefore, the transition of the time and season is explained as a mechanical system relating to the movement of the sun and moon. The movement of the sun and the moon is organized as a universal law ruling the calendar system, that is, as a real system governing the natural phenomena.

In the rest of Chapter 4, Entsū criticizes the basic theories of the modern Western astronomy. Starting with the explanation of eclipse, Entsū criticizes the Western idea of the five planets, its explanation of the celestial system, and the idea of the spherical earth. In the section of the explanation of eclipse, Entsū denies the Western explanation that regards the crossing of the sun and moon as the cause of the eclipse and introduces a theory from the Buddhist scriptures featuring the role of dark or invisible stars that cover the sun in the process of the eclipse. In the section on the five planets, he criticizes the incoherency of the Western theory by comparing the various results of observation and calculation on the five planets in the Western astronomy. The criticism of the celestial system and the idea of the spherical earth is almost the same as his arguments in the second and third chapters. Although he criticizes the Western astronomy by introducing a counter theory from

Buddhist scriptures in some sections, the basic perspective of his criticism of the Western astronomy is that

How the sixty one kinds of the big stars, their numerous escorting stars, and 3.6 billion (or 36 million) regular stars (that appear in the Buddhist scriptures), can completely be seen by ordinary people. . . . It is beyond the knowledge captured by the naked eyes (*nikugan*). Guessing the figure of the enormous world without sufficient reason is an excessive case of forgetting their limited ability.<sup>57</sup>

For Entsū, the western astronomy is a relative theory based on the observation and calculation of the limited human being, and it cannot match the Buddhist astronomy that is an absolute truth captured by Buddha's divine wisdom.

### **Bonreki and Modern Buddhism: *Tengen*, *Nikugan*, & Realism**

In the short fifth chapter titled *Genchi* (vision and wisdom), Entsū indicates a fundamental difference between the true wisdom captured by Buddha's divine vision (*tengen*) and the incomplete knowledge captured by the human vision (*nikugan*). The difference between the Buddhist astronomy and the modern Western astronomy is now turned into an epistemological difference between the two types of knowledge.

According to Entsū, India was the only region in the world, in which the law of vision and wisdom (*genchi no hō*) had been developed. First of all, Entsū introduces various teachings on the divine vision in the Buddhist scriptures and summarizes their complicated systems. Generally speaking, the divine vision is one of the six divine faculties (*rokujinzū*) that are beyond human faculty and is also divided into various subcategories. But the different categorizations are used in the different Buddhist scriptures. So Entsū also introduces various statements from a number of Buddhist scriptures. However, his basic point of argument is to show a contrast between the divine vision and the human vision, and the entire arguments are reduced to the indication of the difference between these two

---

<sup>57</sup> Entsū, *Bukkoku rekishōhen*, vol.5, 30.



poles. The human vision (*nikugan*)<sup>58</sup> cannot capture the things concealed by obstacles, but the divine vision (*tengen*) can see everything beyond any obstacles. In the Buddhist epistemological system, this is sometimes explained by using a metaphor of light. To see something is to shine on something, and being shined upon by the light of wisdom (*kōmyō*), the true figure of all beings simply appears in front of the person who received true wisdom through Buddhist learning and practice (*shūshū*). According to Entsū, the person who received this divine vision can see all things beyond the difference between day and night, the difference between front and back, the difference between past, present, and future, and the difference between up and down. He can simultaneously see the highest heaven through the deepest hell, the eternal past through the eternal future, his back, and things in the darkness. On the contrary, the human vision is a limited vision that cannot see anything beyond these obstacles. Therefore, the limited knowledge captured by the human vision can never match the comprehensive wisdom perceived by the divine vision.

In spite of the fact that there are highly developed theories on epistemological systems in the Buddhist tradition, Entsū mentions only a few simple statements on another subject of this chapter, wisdom (*chi*). He reduces various types of knowledge explained in the Buddhist scripture into the binary types: true (*shin*) knowledge and secular (*zoku*) knowledge. These two types are also expressed as the difference between *chi* (wisdom) and *jyō* (affection, that is, delusion) or *jicchi* (true wisdom) and *ryochi* (delusive knowledge). The Western astronomy based on the scientific observation through the human vision is the second type of knowledge and is far more limited and incomplete compared with the true wisdom. According to Entsū, however, people frequently confuse these two types of knowledge and even criticize Buddhist teachings, which are the complete wisdom captured by the divine vision, in the context of the modern astronomy (or

---

<sup>58</sup> In this context, *nikugan* is not the same as *nikugen*, that is, one of five visions of bodhisattva (*gogen*), though both words use the same Chinese character. Entsū actually contrasts *tengen* or *gotsū* as a divine vision with *nikugan* as a human vision in some places.

science) that is the limited knowledge captured by the human vision. Entsū criticizes this confusion in his last comment as follows:

People often regard delusive knowledge (*ryochi*) as wisdom (*chi*). They do not know that there is wisdom beyond thought (*nen*). This is like knowing the faculty of the human vision (*nikugan*), but not knowing the faculty of the divine vision and the five divine visions (*tengen* and *gogen*).<sup>59</sup>

This binary categorization of vision and knowledge corresponds to the basic polemical plot structure that Entsū used in *Bukkoku rekishōhen*, especially in its first two chapters.

Putting Entsū's entire arguments in this text together, we can illustrate his polemical explanation as follows:

**Western astronomy**—New (diffusion)—Spherical earth & Spherical sky—Man-made—Changeable (without fundamental standard)—Incomplete (partial)—Human vision—Delusive knowledge (guess)

**Buddhist astronomy**—Old (origin)—Flat earth & Dome shaped sky—Sacred—Unchangeable (with fundamental standard)—Complete (comprehensive)—Divine vision—True wisdom (realize)

Dividing the scientific knowledge and religious wisdom and showing that the former is always a part of the later, Entsū tried to explain the meaning of the Buddhist teachings in the situation in which a religious cosmology started to lose its verisimilitude as a representation of reality. This is the same strategy taken by the modern Buddhist discourse in the Meiji period.<sup>60</sup> Though there are a number of variations, the division between these two types of knowledge seems common to many modern Buddhist discourses.

Entsū's Bonreki seems to contradict modern Buddhism at the level of its contents.

While Entsū's Buddhist astronomy which opposed the modern astronomy is anti-modernistic, the works of Buddhist modernists in the Meiji period that reconstructed

---

<sup>59</sup> Entsū, *Bukkoku rekishōhen*, vol.5, 52.

<sup>60</sup> For example, Inoue Enryō, who was one of the most representative Buddhist modernists in the Meiji period and reconstructed Buddhist thought in terms of the modern Western thought, proposes a similar strategy. In his unique study of mysterious phenomena from a modern scientific perspective (*yōkaigaku*: study of mystery), he divides the true mystery (*shinkai*) that is on the level of the religious truth (*shinnyo*) and the fake mystery (*gikai*) that is scientifically explainable. He regards only the former as the true object of religious philosophy. For the detail of his work, see Chapter 5.

Buddhism in terms of the modern science and philosophy is modernistic. However, in regard to the point that both of them divided religious truth and scientific knowledge and reconstructed Buddhist teachings within the framework of modern Western thought as Buddhist science (astronomy) or Buddhist philosophy, they share a similar discourse.

This similarity between the Modern Buddhist discourse and the discourse of Entsu's Bonreki is more clearly represented by another basic mode of discourse in *Bukkoku rekishōhen* : the generalization of various astronomical teachings in the Buddhist scriptures and the fabrication of Buddhist astronomy. In the process of organizing the geographical and astronomical teachings in the Buddhist scriptures as a general explanation of natural phenomena, the originally polyvocal system was woven into a univocal system and the symbolic meaning of these teachings was converted to a descriptive explanation. For example, "yujun," which was a polyvocal and symbolic unit to measure the symbolically represented world, was converted to a univocal unit of measurement to measure actual mass. The stars that had polyvocal and symbolic meanings in the Buddhist scriptures became scientifically observable entities that have only univocal explanation. This generalization of a particular phase of Buddhist teaching in terms of the modern science and philosophy was also a basic characteristic of the modern Buddhist discourse. In this sense, Entsu's Bonreki was a project similar to the works of modern Buddhologists, such as Buddhist philosophy, Buddhist psychology, and Buddhist socialism, at the level of its discourse. On this point too, Entsu's Bonreki was a forerunner of the modern Buddhist discourse and included issues significant to the consideration of the meaning of modern Buddhism.<sup>61</sup>

---

<sup>61</sup> The identification of the origin and the essence was also a common discourse of the Bonreki and the modern Buddhism. Entsu's basic project was to take up astronomical teachings from various Buddhist scriptures and generalize it as the Buddhist astronomy (*bonreki*). However, as he says that one of his purposes in the study of Bonreki is "to complement the missing teaching of Buddhism, by introducing Bonreki, which has never been introduced into Japan." (Entsu 1810: vol.1,1). This generalized Buddhist astronomy that was newly conceptualized was also a discovery of Indian original Buddhist astronomy. The reconstruction of Buddhist teachings in terms of the new discourse was identified with returning to the origin and finding the essence. This linkage between the reconstruction of Buddhism in terms of new discourse and the restoration of its essence was also an eminent discursive mode shared by Bonreki and modern Buddhology.

These modes of discourse also affected Entsū's conceptualization of the Buddhist worldview intentionally or unintentionally. For example, Entsū's explanation of natural phenomena and the system of the universe is modern realistic rather than mystical. While insisting on a fundamental supremacy of religious wisdom, he explains beings on the level of human knowledge and in terms of a scientific reality. The map of the Enbudai island was depicted as an accurate representation of the actual mass of the real world (*genryō*) and the system of the movement of the sun and the moon was explained as directly corresponding to natural phenomena. The knowledge from modern geography and astronomy and the well organized calendar system are used as a scientific signification of the Buddhist cosmography. In this sense, Entsū's geography of the Enbudai island was not only a visualization of the Buddhist cosmology, but also an accurate representation of reality. It was not only a landscape of concept, but also a landscape of reality. Therefore, contrary to his cosmological consciousness that admitted the existence of the realm of spiritual beings, his geography cannot but be a modern realistic representation of the world.

Moreover, he introduces the basic calendar system from *Nichizōkyō* as a representative Buddhist calendar system. Originally this part of *Nichizōkyō* (*Seishukuhon*) consists of the instructions to the dragon kings for offering prayers to the stars and the astrological statements to foresee and change their destiny.<sup>62</sup> However, Entsū reconstructed the statements of this scripture in comparison to the Chinese and Western calendar system, and, therefore, intentionally or unintentionally, the astrological statements in the text that were originally far more essential than the astronomical calendar system were eliminated from his Buddhist calendar system. Since he divided the realm of human knowledge and the realm of divine wisdom, the astronomical theory that belongs to the realm of human knowledge could be separated from the knowledge beyond the realm of human knowledge (in this case, the instruction to the dragon kings) without inconsistency. The Buddhist astronomy that Entsū introduced as a theory that has never been introduced to

---

<sup>62</sup> Taishō Kokuyaku

Japan, and actually has never been conceptualized in this sense, was now generalized from the Buddhist scriptures as a different system from astrology. In this sense, Entsū's reconstruction and generalization of Buddhist teachings in terms of modern scientific discourse also created a new discourse. By structurally adopting the method (not content) of the modern science, he created a discourse that divides the religious truth that is beyond the realm of human knowledge and the scientific knowledge that is in the realm of human knowledge. And only in this discursive mode, the astronomical/astrological teachings in the Buddhist scriptures could be reconstructed as a Buddhist astronomy.

**CHAPTER 4**  
**SHUMISEN AS EXTENDED SUBSTANCE<sup>1</sup>: ESTABLISHMENT**  
**OF THE MODERN BUDDHIST COSMOGRAPHY**

**Cosmographic Discourse & Conceptualization of the World as Reality**

Contrary to a general image of Buddhism as an ideal philosophy, the structure of the material world as a residence of the sentient beings is fully explained in the Buddhist scriptures. The system of the world including the realm of the human being is factually described as an extension of the world of everyday experience. However, it was not very popular in Japan before the early modern period to describe this factual world system of Buddhism as corresponding to the empirical and geographic understanding of the world. For example, Figure 71 is the Buddhist world map named *Gotenjikuzu* (the picture of the five Indias, 1364). This world map, depicted as representing the Buddhist worldview, is generally considered the oldest world map in Japan. According to the worldview explained in the Buddhist scriptures, the residence of the human being is located on the Enbudai island that is one of the four islands distributed at the four directions of the outermost sea surrounding the enormous mountain at the center of the world. In *Gotenjikuzu*, India, China, and Japan, which constituted the limit of the basic geographical recognition of Japanese people at that time, were distributed on this island as the realm of the human being, and the connection and location of these three countries are depicted as a world map.

In the historical study of the development of Japanese cartography, Oji Toshiaki divides the human conception of the living space into three categories: 1) everyday life

---

<sup>1</sup> In Descartes' sense. In Descartes' usage, *re extensa* (extended substance) mean the material world that is simply an indefinite series of variations in the shape, size, and motion of the single, simple, homogeneous matter. Under this category, all physical and biological events are regarded as simply the result of purely mechanical process.

space (local chology), 2) space beyond everyday life (regional map, country map), and 3) ideal space (symbolic representation, such as the tantric mandala). He proposes that a characteristic of premodern cartography was to combine the first conception and the second conception and insists that, in the modern period, maps started to be drawn as the real space beyond everyday experience with special attention to the separation between these spaces. He also divides the basic factors of writing cartography into 1) symbolic, 2) artistic, and 3) scientific and says that "the general characteristic of the premodern cartography is the supremacy of the artistic factor. On the contrary, the modern map pursued scientific factors from geographic surveys."<sup>2</sup> Following these definitions, Oji analyzes *Gotenjiku-zu* as a cartography that combined the Buddhist worldview (ideal space) and the general geographical recognition at that time (space beyond everyday life) that was called the three countries worldview (*sangoku sekaikan*).<sup>3</sup>

According to the rapid growth of the geographical knowledge brought by the Jesuit priests in the sixteenth century, however, the Buddhist world map was also forced to pay more attention to the "scientific" factor of writing cartography. Oji takes up a Buddhist world map, *Nansenbushū bankoku shōka no zu* (the picture of the world inside of the Jumbūdīpa island, Figure 74), that was drawn by a Buddhist monk, Hōtan, in 1710 and discusses a shift from the medieval geographical recognition of the world to the early modern recognition. Hōtan's picture adopted the geographical knowledge accumulated in the West and depicted the Enbudai island as a continent including Europe, while it held on to an ideal concept of the Enbudai island. In this picture, we can find a compromise between the ideal Buddhist worldview and the geographical knowledge derived from an actual survey.

---

<sup>2</sup> Oji Toshiaki, "Echūzu ni arawareta sekaizō," in vol. 7 of *Nihon no shakaishi* (Tokyo: Iwanami, 1987), 302.

<sup>3</sup> Oji's idea of "cartography" has its roots in an idea regarding the visual representation of the world, such as the map, as a text that can be decoded at the level of a textual analysis. Trevor Barnes and James Duncan, *Writing Worlds: discourse, text & metaphor in the representation of landscape* (New York: Routledge, 1992) provides us with an insight on the contemporary discussion of this issue in detail.

As we examined in the second chapter, Fumon Entsū also depicted a Buddhist world map in his *Bukkoku rekishōhen* (1810) from a similar perspective (Figure 75). While Entsū's world map still held the idea of the Enbudai island as a boundary of the world, the description of the American continents, Africa, Australia, and Antarctic continent was added in this picture which was drawn one hundred years after Hōtan's picture. Entsū also added the orbits of the sun as an explanation of the seasonal change on the Enbudai island and tried to increase the plausibility of his picture as a representation of the real world. Oji says that there was a situation in early modern Japan, in which the Buddhist world map, the egg shaped world map brought by Matteo Ricci, and the picture of the Eastern and Western Hemisphere coexisted as a world map.<sup>4</sup> Paying attention to the fact that these variation were unified into the modern world map as a representation of the real space beyond everyday experience in the Meiji period, Entsū's Buddhist world map was an extreme and final case of pursuing scientific verification in terms of an ideal worldview. Confronting the modern scientific worldview and increased geographic knowledge, the ideal worldview was also required to deal with the issue of scientific verification. Entsū's world map was an attempt to respond to this extreme limits of this requirement. If "the cartography is a text filled with readable meaning,"<sup>5</sup> the discursive shift of the Buddhist world map discussed here can be considered as a representation of a historical shift of the geographical recognition of people in each period. In this chapter, I would like to consider this historical shift of world picture from a broader perspective by dealing with the Buddhist cosmography that is a representation of the Buddhist system of the universe which includes the realm of the celestial system.<sup>6</sup>

---

<sup>4</sup> Oji, "*Echizu ni arawareta sekaizō*," 335-336. In the first chapter, we examined that various cosmographies coexisted in early modern Japan focusing on their discourse. It is interesting that the coexistence of various geographies that Oji mentions here corresponds to the coexistence of various cosmographies in the same period.

<sup>5</sup> Oji Toshiaki, *Echizu no sekaizō* (Tokyo: Iwanami, 1997), 4.

<sup>6</sup> In the first chapter, we defined the cosmographical theory and cosmographic discourse (p. 14). We follows this definition in this chapter too. In this dissertation, by cosmography I mean a description of the system of universe and by cosmographic discourse I mean how to write the system of universe as reality. In order to consider the shift of cosmographical consciousness of people represented by the shift of how to



### *Buddhist Cosmography and the Idea of Reality*

In the serial articles titled *Bukkyō tenmongaku* (Buddhist astronomy) that were published in 1926, a modern Buddhologist, Ono Genmyō, introduced various Buddhist cosmographies depicting the Shumisen world (one world unit of the Buddhist cosmology) collected from different periods and regions (Figure 76 a-e). Explaining each cosmography as a part of his systematic theorization of the Buddhist astronomical teachings, he says as follows:

Comparing them (Buddhist cosmographies) with each other, in spite of the fact that all of them are supposedly drawn referring to the Buddhist scriptures, their designs are a little different from each other. I sense an inexpressible interest in this fact.<sup>7</sup>

Even though he sensed "an inexpressible interest" in the varieties of designs of these Buddhist cosmographies, he did not pursue this issue further. Pursuing the meaning of this "inexpressible" difference of Buddhist cosmographies at the level of the style of writing is a subject of this chapter.

What does this variation of design mean? The Buddhist world maps, such as *Gotenjikuzu* and Hōtan's world map, depicted the same ideal worldview (the Enbudai island as the world) adopting the different "ways" of writing (styles) that reflected the geographical recognition of the world in each period. Thinking of the variation of the Buddhist cosmographies from a similar perspective, it can be said that the variation of the styles of writing the Buddhist cosmography also represents a recognition of the proper system of the universe in a particular historical and cultural space, in which these Buddhist cosmographies were depicted. As Ono Genmyō says "all of them are supposedly drawn referring to the Buddhist scripture," they represent the same ideal worldview of Buddhism. However, as long as every Buddhist cosmography was depicted as representation of the

---

conceptualize Buddhist cosmography (or style of writing), here the object of study is restricted to the pictorial representation of the Shumisen world .

<sup>7</sup> Ono Genmyō, "*Bukkyō tenmongaku*, no. 3," *Gendai Bukkyō* 3-27 (1926): 57

world including our everyday life space, these cosmographies cannot but be described as reflecting an idea of reality in each period. In this sense, these Buddhist cosmographies describing the Buddhist system of the universe are also a text filled with the readable meaning, just as the cartography is a meaningful text.

In Oji's idea of cartography, however, there is a rupture between the "premodern cartography" and the "modern map." The premodern cartography mediated by an ideology is distinguished from the objective modern map here. However, the ideological aspect of the modern geography has been repeatedly indicated by the post-modern criticisms that regarded the geography as geo/graphy (writing of the earth).<sup>8</sup> In this sense, Oji's presupposition should also be reconsidered. We would have to depart from the way of thinking that considers every geography as an ideological cartography.

In the short essay titled *On Realism in Art*, Roman Jakobson discusses the relativity of the idea of "realism." Realism in a narrow sense means a specific artistic trend in the nineteenth century, but what is real is originally a relative value. By showing the tendency of each new generation of artists to assert that the works of its predecessors are artificial, stylized, and not true to life, and also the fact that conservatives consider their own values (the tradition to which they belong) to be the most realistic, Jakobson points out the relativity of the concept of the "realism."<sup>9</sup> From a similar perspective to Jakobson's idea of realism, Ernst Gombrich studied the history of art as a progressive shift from the representation of "what artists knew" to the representation of "what artists saw."<sup>10</sup> However, he also indicates that no artist can depict a perfect representation of "what he saw" discarding every convention. Any artist "cannot transcribe what he sees; he can only translate it into the terms of his mediums."<sup>11</sup> Showing how the medium (material), the style

---

<sup>8</sup> For example, Berns and Duncan, *Writing World* (1992) and Stephen Melville and Bill Readings, eds., *Vision and Textuality* (Durham: Duke University Press, 1995). As an application of this perspective to a historical analysis, Thongchai Winichakul, *Siam Mapped: a history of the Geo-body of a Nation* (Honolulu: University of Hawaii Press) is a good example.

<sup>9</sup> Roman Jakobson, *Language in Literature* (Cambridge: Harvard University Press, 1987), 19-27.

<sup>10</sup> Ernst Gombrich, *The Story of Art* (London: Phaidon Press, 1950).

<sup>11</sup> Ernst Gombrich, *Art and Illusion* (Princeton: Princeton University Press, 1960), 36.

(mode of employment), the scheme (stereotype) affect the art work even in the case of the works of modern realists and the realistic representations, such as photography and pictorial representation in the scientific text, Gombrich indicates that there is no innocent eye in any representation of reality. The works of modern realists too can be real only in terms of their convention, and any work is a representation of reality in its own convention. According to Gombrich, this is why art has history. Now the history of art is written not as an evolution from the inaccurate to the accurate representation, but as a shift of the style of art work that represents a historical shift of the conventional idea of reality.

This idea of the history of the artistic style that represents the recognition of reality in each period is useful for considering the issue of Buddhist cosmography. Supposing that each cosmography represents reality in terms of its convention, the diversity of the style of writing Buddhist cosmography can be reduced to the diversity of the artist's ways of constructing reality in terms of their conventions. As Gombrich showed the necessity of pursuing "the linguistics of the visual image" to study the history of art, in order to pursue this issue, we need to consider the expressive form of each cosmography as well as its subject. As long as we focus on the content or subject of the Buddhist cosmographies, they are a pictorial representation of the same Buddhist worldview and there is no difference between them. In order to reveal "an inexpressible" difference concealed in the commonness of subject, we need to shift our focus of analysis from the content or subject to the discursive or expressive form of the Buddhist cosmography.

In this chapter, therefore, focusing on the rhetorical difference of the Buddhist cosmographies and the historical shift of their discourse, I would like to study the history of Buddhist cosmography, that is, a historical shift of the conventional conceptualization of Buddhist worldview. From a perspective of dissertation that is to consider the meaning of Fumon Entsu's Bonreki theory in the history of modern Japanese Buddhist thought, the focus of argument in this chapter will be on the emergence and establishment of the modern Buddhist cosmography represented by Entsu's model of the Shumisen world. Just as

Entsū's Bonreki theory was the Buddhist astronomy newly established in terms of the modern scientific discourse, Entsū's model of the Shumisen world that uses his Bonreki theory as a theoretical basis has many interesting characteristics that cannot be found in the previous period. In the first chapter, we examined Entsū's cosmography as a part of the emergence of the new cosmographic discourse in the late Edo period in synchronic comparison with Entsū's contemporaneous cosmographic theories. In this chapter, however, a focus of the argument will be on the diachronic shift of the Buddhist cosmography. Comparing the medieval picture of the Shumisen worldview and the early modern picture just before Entsū's period with Entsū's model of the Shumisen world, I would like to consider the meaning of the historical shift in the style of Buddhist cosmography in this chapter.

### **Image of the Shumisen World in Traditional Buddhist Cosmography**

By the Buddhist cosmography, here I mean a representation of the factual worldview of Buddhism. Therefore it does not directly deal with "cosmology" as an essential meaning of the world nor "cosmogony" as a theory explaining the creation of the world, though they are not completely separable from the factual worldview. In this chapter, I consider how the natural or material world as a given fact has been conceptualized rather than study how the essential nature of the world, such as *hongaku shisō*, has been constructed in the history of Japanese Buddhism.

In the Buddhist scriptures, the factual world is generally divided into the two categories, *kiseken* (the material world) and *ujōseken* (the world of sentient being). The material world is the form of the world as a residence of sentient being and the world of sentient being is the whole sentient being living in the material world. This material world is also divided into the three realms (*sangai*), *yokukai* (s: *kāma-dhātu*, the realm of desire), *shikikai* (s: *rūpa-dhātu*, the realm of form), and *mushikikai* (s: *ārūpya-dhātu*, the realm of non-form). The sentient being in the realm of non-form is completely free from materiality

of existence, and in the realm of the form too, the sentient being is free from the materiality in the sense of the being in the world of desire (for example, they are free from desire). Therefore, the material world that can be a subject of the cosmography as a representation of the real world is the world of desire (the residence of the six lower states of existence: hell, hungry ghost, animals, *asuras*, men, and heavenly beings) which consist of the realm of heaven, the realm of hell, and the flat world surrounding an enormous mountain.

At the center of the world of desire, there is an enormous mountain called *Shumisen* (Mt. Sumeru), and the eight mountain ranges and the eight round seas surround this mountain. The sun and the moon horizontally orbit round the Shumisen. All of them are built on the three discs or rings, made of metal, water, and wind. The realm of the heaven is located on the upper part of the Shumisen and the realm above the top of the Shumisen. Our world, called the Enbudai island, is located on the one of the four major islands in the outer most sea surrounding the Shumisen. The realm of the hell is under this island. The six states of existence (*rokudō*) are distributed into this material world. This is one unit of the world system called *shumikai* (the Shumisen world).<sup>12</sup>

One thousand of these world units form one *shōsensekai* (the small thousand world) and one thousand of the small thousand worlds form one *chūsensekai* (the middle thousand world). Moreover, one thousand of the middle thousand worlds form *daisensekai* (the large thousand world). This vast universe repeatedly emerges and collapses in the almost eternal cosmic aeon. However, the subject of this chapter is not a pictorial representation of this vast universe that is far beyond the realm of the human being, but a cosmography of one unit of the Shumisen world that is related to the reality at the level of our everyday experience. In order to consider how this one unit of the Shumisen world has been

---

<sup>12</sup> This is not an established Buddhist term that is in the Buddhist encyclopedia, but this term is frequently used by Entō and his followers as a term meaning one world unit surrounding the Shumisen. In this paper, I will use this term (*shumikai* or the Shumisen world) as the term representing the one world unit that is the subject of the Buddhist cosmography in the context of this paper. In this sense, the emergence and establishment of this term itself includes an interesting issue in considering the history of Buddhist cosmography.

represented in the Buddhist cosmography, here I would like to focus on the material world as the residence of the sentient beings.

### *Representation of the Ideal Shumisen World*

Figure 77 is a pictorial representation of the Shumisen world depicted on a petal of the lotus seat (*renza*) of the big statue of the Buddha Vairocana in Tōdaiji (*nara daibutsu*). This statue originally built in the years between 743 to 757 was destroyed by wars many times, and the reconstruction of the present statue was completed in 1690. However, its lotus seat survived the repeated destruction and most of the seat remains in its original form.<sup>13</sup> The pictures chased on the lotus petals made of sheet copper represent the worldview called *rengedaijō sekai* (the lotus-repository world). Figure 77 represents the one unit of the Shumisen world as a part of this vast worldview. According to Ono Genmyō, this picture was chased in 751 and it is the oldest example of the Buddhist cosmography depicting the one unit of the Shumisen world in Japan (Figure 77 is a close up section of Figure 76-a that Ono cited in his essay). The eight mountain ranges and eight seas are surrounding the multilayered Shumisen. The realms of heavenly beings are depicted on the mountainside and the top of the Shumisen. The shape of the four major islands on the outer most sea are depicted as explained in the Buddhist scriptures. The shape of the south island is a reversed trapezoid, the eastern island has the shape of a half-moon, and the western island is a circle. Each island is accompanied by the two middle islands and four little islands that have the same shape as that of the major island. The northern island is screened by the Shumisen, but we can see that the two little islands and parts of the two middle islands are depicted as a square behind the Shumisen. The two circles beside the mountainside of the Shumisen are the sun and the moon.

---

<sup>13</sup> Only six of twenty eight petals lacked the entire parts of the original and many petals remain composed mainly of parts of the original. Since all twenty eight petals depict the same motif, we can imagine an original form by assembling the remaining parts (Kurata, *Todaiji*, vol. 1 (Tokyo: Kōdansha, 1969), Figure 34).

This is a bird's-eye view of the Shumisen world seen by Buddha's divine vision and well represents the material world explained in the Buddhist scripture. It visualizes the Shumisen world as from a particular angle (in this case, from the sky above the southern island) just like a picture taken from an airplane. However, this is not an accurate representation of reality in the sense of modern realism. In this image, the Shumisen world is depicted not as what the artist saw, but as what he knew. For example, the south Enbudai island, which includes our world, is depicted with the picture of the Buddha. This picture of Buddha seems to symbolically represent the Buddha Śākya-muni who lived in this world and preached the truth as a historical figure (*ōjin*, corresponding body). The four great rivers and the fountainhead of these rivers are depicted above the picture of Buddha. The four rivers flow out from the mouths of an elephant, a horse, a lion, and a cattle. The northern part of the Enbudai island is the vast realm without human beings and the southern part of the island is the residence of the human beings. In this sense, the picture of Buddha symbolically represents the realm of our world. This is not a pictorial representation of what is supposed to be seen as it is, but a symbolic visualization of the Buddhist teachings.

By the fact that it visualizes the world according to a theory explaining the formation of the world, it is close to a geographical representation of the world. However, in this picture, there is no examination of the correspondence between the representation of the Shumisen world and the numerical measures in the Buddhist scriptures, which becomes crucial in the modern Buddhist cosmography. The four major islands and the eight middle islands that should be extremely small compared with the nine mountains and the eight seas are depicted too large in this picture. In the Buddhist scriptures, the formation of the material world is explained with detailed numerical measures indicating the width and height of the mountains, seas, islands, the sun, and the moon. In this picture, however, the mountain ranges and the seas in the Shumisen world are not depicted as corresponding to the numerical measures in the Buddhist scriptures and they are just randomly distributed.

Only in the conceptualization of the world as a representation of things as they are, the concrete numerical measurement becomes a crucial issue, because it becomes a criterion by which to evaluate a degree of correspondence between the reality and its representation. In this sense, Figure 77 is not a realistic representation of the Shumisen world, but a symbolical image of the Shumisen world. This is not a visualization of the empirical data collected by the observation of the real world, but a visualization of the statements in the Buddhist scriptures.<sup>14</sup>

Figure 78 is the restoration of the whole picture of the lotus petal including Figure 77. The same motif is chased on each one of the twenty eight lotus petals that form a circular lotus seat (Figure 79). Since these petals are reciprocally arranged, there are two types of petals, the whole petal (*zenben*) and the interval petal (*kanben*). Each whole petal depicts the seven Shumisen worlds and each interval petal has the three Shumisen worlds (the right and left parts of the interval petal is covered by the adjoining whole petals). The middle part of the picture above the Shumisen worlds is divided into twenty five strata, and the numerous pictures of Buddha's head and buildings are depicted on this multilayered realm. It seems to represent the realms of form and non-form in the material world, but there is no definitively accepted opinion to explain this part of the picture.<sup>15</sup> On the upper part of the lotus petal, the Buddha Śākya-muni sits with the twenty two bodhisattvas, and the twelve groups of the transformed Buddhas (*kebutsu*) come out of the Buddha's head. The hands of this Buddha form the sign of sermon (*seppōin*). Considering the motif of the picture that has the transformed Buddhas come out of the head of the Buddha who is exposing the dharma, this enormous Buddha seems to represent the Buddha as the dharma-body (*hosshin*). On the Enbudai islands of the numerous Shumisen worlds, the Buddha Śākya-

---

<sup>14</sup> In this context, however, the symbolic image of the Buddhist worldview in Figure 77 still represented the "real" world in a different way from the modern realistic representation, such as the world map and the earth globe. Unlike the modern period in which the scientific explanation dominated the representation of the world as it is, there was no other worldview that competed against and completely denied the plausibility of the Buddhist worldview as a representation of reality. In the context in which Figure 77 was depicted, this cosmography was also a representation of reality.

<sup>15</sup> Kurata, *Tōdaijī* (1969), 327.



muni is depicted as the corresponding body (*ōjin*) and the big statue of Buddha Vairocana as the reward body (*hōjin*) sits on the lotus seat surrounded by the lotus petals. This motif seems to represent the idea of Buddha's three bodies (*sanjin*).

This picture chased on the lotus seat is normally considered a pictorial representation of the following statement in *Bonmōkyō*:

The lotus seat is surrounded by the one thousand lotus petals. The one petal represents the one world and the one thousand petals form the one thousand worlds. One thousand of Buddha Śākya-muni are respectively sent to one thousand petals. There are ten billion of *Shumisen*, the suns and the moons, the Shumisen worlds, and the Enbudai islands in each petal. The ten billion of bodhisattvas who will be Buddha Śākya-muni sit under the ten billion of Bodhi trees. <sup>16</sup>

The twenty eight petals symbolize the one thousand petals in this statement and the big figures of the Buddha depicted on these petals represent the one thousand Buddhas distributed into the one thousand subdivisions of the whole universe. The Shumisen worlds depicted on the bottom of the petal are the representation of the ten billion worlds in the one lotus petal. The small figure of the Buddha depicted on the Enbudai island is one of the ten billion Buddhas who appears in each Shumisen world. Thus the lotus seat and the big statue of Buddha Vairocana is a symbolic representation of this vast universe including the one thousand subdivisions that hold the ten billion worlds respectively.<sup>17</sup> Figure 77 is a pictorial representation of the Shumisen world as a part of the symbolic visualization of this vast ideal worldview. It is not an independent cosmography of the Shumisen world. It is not a realistic representation of the world as an existent entity, but a symbolic representation of the world as an ideal existence.

This Shumisen world as an ideal existence is frequently symbolized by the Shumisen as the center of the world. For example, the statue of Buddha, who is the dharma master of the realm of the human beings and the heavenly beings (*ninden*: the Shumisen world here),

---

<sup>16</sup> Iwano Shinyū, ed., *Kokuyaku issaikyō*, Ritsubu, vol. 12 (Tokyo: Daitō shuppan, 1930), 4.

<sup>17</sup> This vast worldview is called *rengedaizō sekai* and normally distinguished from *rengezō sekai* expounded in *Kegongyō*.

is normally located on the platform called *shumidan* or *butsudan* (the Shumisen platform or the platform of Buddha). This platform also seems to symbolize the Shumisen as the center of the world and the Shumisen world (Figure 80). The symbolic representation of the Shumisen and the Shumisen world is not necessarily a bird's-eye view of the Shumisen world. Figure 81 is the picture of the Shumisen drawn on the famous cultural assets, *Tamamushi no zushi* (the shrine of tamamushi), preserved by Hōryūji. This shrine constructed in the Asuka period (from the middle sixth century to the early seventh century) is a marvelous art work created by a very sophisticated architectural techniques. The shrine and its pedestal are covered by many Buddhist paintings, and they are also significant art works for considering the history of the Buddhist paintings. Figure 81 is drawn on the back panel of the pedestal. The scriptural source of the motif of this picture is not as clear as that in the case of the lotus seat of Tōdaiji.<sup>18</sup> In this picture, the Shumisen as a symbolic center of the world is depicted as a cosmic tree.

Compared with Figure 77, the platform of the Buddha statue and the Shumisen in Figure 81 are far more symbolic. However, while Figure 77 seems to represent a bird's-eye view of the Shumisen world as an actual existence, it is actually a symbolic representation of the ideal Shumisen world as a part of the vast ideal worldview. On the point that all of them represent an ideal worldview, the relation between the representation and the represented in these representation of the Shumisen world is a similar one, that is, a metaphorical relation based on the similarity between the representation and the represented. As the motif of an enormous number of Buddhas being distributed to the enormous number of Shumisen worlds indicates, the Shumisen world of Figure 77 is just another anonymous world, a component of the vast ideal universe. Which of these Shumisen worlds is our world is indeterminable in this picture. Therefore, the correspondence between the cosmography as a representation of the world and the world represented by the cosmography in terms of the objectively verifiable reality has no

---

<sup>18</sup> Ishida Mosaku, *Hōryūji*, vol. 2 (Tokyo: Kōdansha, 1970), 349.

meaning here, because the representation of the Shumisen world in Figure 77 is not necessarily a representation of our world. The world need not be represented as it is supposed to be seen in this context. It is symbolized as it is known.

The pictorial representation of the Shumisen world as an independent material world system is hardly found before the early modern period, though the idea of the Shumisen as the center of the material world existed as a basic teaching of Buddhism and it was represented in various ways. In the tantric Buddhist tradition, for example, the Shumisen is frequently depicted as a symbol of Buddha's enormous power that is activated through the practice of rituals. However, even in a few cases of the visualization of the Shumisen world, such as Figure 77, it is a symbolic representation of the ideal worldview, and there is no problematization of the relation between these representations of the world and the world as it actually is. The lack of attempt to conceptualize the Shumisen world as a realistic representation of the world seems to represent the fact that the Shumisen world was not a factual reality in the sense of modern realism, but a symbolic reality in this period. In the convention of a period that regards a symbolic representation as an accurate representation of reality, the symbolic representation of reality is undoubtedly real. There is no need to verify the theoretical correspondence between the representation of the world and the represented world as an existent entity. The visualization of the Shumisen world as an independent world system in terms of the world map and the celestial globe becomes a crucial issue for Buddhists only after the problematization of the Shumisen worldview as a representation of actual existence due to the popularization of the spherical earth theory in the early modern period.

### *Spherical Earth and Buddhist Cosmography*

In 1541, the first Jesuit missionary to Japan, Francisco Xavier, landed at Kagoshima. Though Western technology and culture were already brought by the traders before the arrival of Xavier, the contact with the Western culture was activated by the missionary

work of Jesuit priests. As a part of their missions, Jesuit priests introduced their scientific knowledge, such as astronomy, physics, and geography. In his inspection report of Japan (1553) Xavier says as follows:

Japanese have a more reasonable nature than the people of other Asian countries. However, even though they like learning, they still don't know the spherical shape of the earth and its revolution. Therefore, as we first explained its reason and the basic mechanism of thunder and wind, they eagerly listened to this truth. Especially, the high status scholars respect us and are willing to learn the essence of these theories. We could make Japanese people know our teachings (Christianity) in their heart, by using these scientific theories.<sup>19</sup>

Scientific knowledge and technology played a significant role in their missionary work. The astronomical theory that Christian missionary introduced was based on the idea of the spherical earth and they also brought the precision instruments, such as a telescope, the earth globe, and the celestial globe. In the process of spreading Christianity, therefore, a different material worldview than the Shumisen worldview was introduced into Japan. However, along with the prohibition of Christianity and the closed door policy of the Tokugawa government, Western astronomy texts were also prohibited to be popularly circulated. The problematization of the Shumisen worldview in terms of the scientific worldview becomes a really serious issue for Buddhist only after the popularization of the idea of the spherical earth in the eighteenth century.

Even before the eighteenth century, the ideas of the spherical earth and the celestial system as concentric circles were already popular among Japanese astronomers. In spite of the prohibition against importing Western thought, Western astronomical theory through Chinese texts was still available for the experts. The famous astronomer, Shibukawa Tenkai, who led the calendar reform in 1684 (*Jōkyō no kaireki*) and established the astronomy office in the Tokugawa government (*tenmongata*) independent from the astronomy office of the Imperial household, also adopted the idea of the spherical earth. It is well known that he created the celestial globe and the earth globe based on Western

---

<sup>19</sup> Watanabe, *Kinsei nihon tenmongakushi*, vol. 1 (Tokyo: Kōseisha kōseikaku, 1986), 24.

scientific theory learned through Chinese texts.<sup>20</sup> Of these Chinese astronomy texts, *Tenkeiwakumon* (Catechism on the Celestial Law) was probably the most popular and influential text. In this text, both Chinese astronomical theory and Western theory (in this case, geocentric theory) are explained in the form of a catechism. *Tenkeiwakumon* was one of the banned books that were prohibited from import in the early Tokugawa period. However, according to the alleviation of the banned book policy in 1720, many books banned since 1630 were allowed to be popularly circulated in Japan. In 1730, *Tenkeiwakumon* was published by Nishikawa Masayasu with a detailed commentary and was popularly circulated as a basic astronomy text. Although the astronomical theory of *Tenkeiwakumon* was a geocentric theory, it was based on the spherical earth theory and the idea of the spherical earth became more popular due to the popularization of this text.

In this situation, there emerged some Buddhist reactions to the Western astronomical theory. In order to cope with the popularization of the idea of the spherical earth, the Buddhist cosmography was required to be depicted as a realistic world system in comparison to the Western idea of the spherical earth that was verified by systematic and scientific theory. Figure 19 is a representative Buddhist cosmography depicted by a Buddhist monk, Monnō, opposed to the idea of the spherical earth in this period. In opposition to the situation that the Western astronomical theory become popular in Japan, Monnō wrote the criticism of the Western astronomy and the defense of the Buddhist worldview titled, *Hitenkeiwakumon* (Anti-*Tenkeiwakumon*) and *Kusenhakkai kaichōron* (Defending theory of the nine mountains and the eight seas) and tried to defend the Shumisen worldview as a plausible representation of the factual world. Monnō (1700-1763) was a monk of the Jōdo sect who was famous as a phonemicist. In his *Hitenkeiwakumon*, Monnō explains his basic motivation to criticize the Western astronomy as follows:

---

<sup>20</sup> Watanabe, *Kinsei nihon tenmongakushi*, vol. 1, 45-72.

This book (*Tenkeiwakumon*) already arrived at our country sixty to seventy years ago. Only a few people believed in it at first. Recently this book was publicly circulated. Therefore, many people indulge in this evil teaching now. Because they do not investigate this theory thoroughly, they accept the falsehood as truth. . . . Briefly examining its (*Tenkeiwakumon*'s) outline, I would like to clear up the doubt of the people. Therefore, I use a pictorial explanation to attack its falsehood.<sup>21</sup>

Figure 19 is the cosmography of the Shumisen world inserted in *Kusen hakkai kaichōron* completed in 1754 for the same purpose.

In this picture titled *Sangai kusen hakkai zu* (Picture of the three realms of the world and the nine mountains and the eight seas), the three realms of the material world are depicted as a pictorial representation of the Shumisen world. The Shumisen as the residence of the heavenly beings, the nine mountain ranges, the eight seas, the four major islands, and three discs as the foundation of the world are depicted under the multilayered realms of the form and non-form. Unlike Figure 77 that is a subcategory of the vast ideal system of the universe, Figure 19 is an independent world system. Even though both pictures share almost the same motif, Figure 19 is different from Figure 77 in the aspect that the numerical measures, directions, and locations of the components of the world are clearly indicated. The mountains and the sun and the moon are depicted with the numerical measures from the Buddhist scriptures. The height of the sun, the moon, and the stars is 40,000 yujun and the heights of the nine mountains are reduced by half from the center to the outermost mountain. According to *Abhidharma Kusharon* and *Risseabidonron*, which are the basic references of Monnō's work, the height of the Shumisen on the surface of the sea is 80,000 yujun and the heights of the other mountains are reduced by half. The indication of numerical measures in this picture seems to follow the statements in these scriptures.<sup>22</sup> In the text of *Kusen hakkai kaichōron*, moreover, he introduces a theory on the horizontal movement of the sun and the moon, the mechanism of the eclipse, and the

---

<sup>21</sup> Watanabe, *Nihon tenmongakushi*, vol. 1, 42.

<sup>22</sup> The heights of the third and the fourth mountains are the same (10,000 yujun) in this picture. Considering the relation with the heights of other mountains, however, the height of the third mountain should be 20,000 yujun.

theory of the seasonal change in the Buddhist scriptures, and criticizes the Western astronomical theories, such as the idea of the spherical earth, the celestial system, and the idea of the north and the south poles.<sup>23</sup>

In the sense that Monnō uses the numerical measures and astronomical theory from the Buddhist scriptures as a support for conceptualizing the Shumisen world as an actual existence, his cosmography is somehow more realistic. However, Figure 19 does not reflect these theories and numerical measures as a code of the actual writing of the pictorial representation. The height and width of each component of the Shumisen world does not correspond to the numerical measures indicated in the picture. The mountains, seas, the four islands, the sun, the moon, and the stars are just randomly depicted without reflecting the indication of numerical measures. It does not even correspond to the theoretical explanation in the Buddhist scriptures. For example, the shape of the four major islands do not reflect the explanation of the four islands in the Buddhist scriptures. According to the Buddhist scriptures to which Monnō refers, each major island should have a unique shape, such as a reversed trapezium (the southern island), but there is no noticeable difference between the four islands in Figure 19.

Moreover, he seems to not even try to depict a bird's-eye view of the Shumisen world. For example, compared with the bird's-eye view of the Shumisen world of Figure 77, Monnō is less concerned with the construction of the picture as a representation of what is supposed to be seen. In Figure 77, the northern island was concealed by the Shumisen to reflect the point of view of the viewer, but the location of the islands and mountains are more randomly depicted in Figure 19. Monnō did not pay attention to the reliability of the cosmography as a representation of what is supposed to be seen. Even though the theoretical explanation of the system of the Shumisen world in the Buddhist scripture is

---

<sup>23</sup> In order to know Monnō's criticisms of the astronomical theories in *Tenkeiwakumon* systematically, Motoori Norinaga's criticism of Monnō's *Kuesenhakkai kaichōron* is useful. In this criticism written in 1790, Motoori examines Monnō's opinions one by one (Okubo Tadashi, ed., *Motoori Norinaga zenshū*, vol. 14 (Tokyo: Chikuma shobō, 1972), 161-171).

reflected in the picture as the indication of numerical measures, there is no effort to show the correspondence between the theory as an explanation of the world system and the cosmography as a representation of the world. In this sense, his cosmography was not a realistic representation of the actual existence, but a symbolic visualization of what he knew.

Corresponding to the popularization of the idea of the spherical earth that was sustained by a scientific theory, there emerged a new conceptualization of the Buddhist worldview featuring the theoretical explanation of the Shumisen world system in the Buddhist scripture. Monnō's works are a representative case of this reaction (Figure 76-c in Ono's citation is the representation of the Shumisen world as a similar reaction to this situation). However, as we can see in his pictorial explanation of the Buddhist worldview, a scientific consistency of the cosmography as a representation of the real world was not yet problematized in his cosmography. Monnō's way of depicting the cosmography was simply scripturalistic. In his cosmography, the realm of the form and non-form, which are spiritual realms in a different dimension of the world than the six states of existence, is simply depicted above the Shumisen. In the sense that it did not require a theoretical verification of cosmography as a representation of the real world, his cosmography was not a realistic representation, rather it was a symbolic representation of the ideal Buddhist worldview. In Monnō's cosmography, the symbolic representation of the ideal worldview was depicted as more "real" than the scientific explanation.

### **Fumon Entsu's Buddhist Cosmography**

Monnō's basic strategy was to insist on the supremacy of the ideal Buddhist worldview over the Western astronomy as another ideal worldview. However, in this period, the realm of the world beyond everyday experience was already not an issue of ideal cosmology, but a problem of actual existence. In 1790, Motoori Norinaga wrote a criticism of Monnō's *Kusenhakkai kaichōron* titled *Shamon Monnō ga Kusenhakkai*



*kaichōron no ben* (Argument of the Buddhist monk, Monnō, in his *Kusenhakkai kaichōron*). In this text, Motoori examines Monnō's criticism of Western astronomy in detail and criticizes Monnō's scripturalistic explanation of the Buddhist worldview. Critically examining Monnō's basic arguments one by one, he concluded as follows:

Since it (*Kaichōron*) simply hates the idea of the spherical earth and tries to reinforce the delusive theory of Shumisen by rejecting it (the idea of the spherical earth), it includes various partial theories. (He) tried to quibble by referring to the Chinese astronomical theory, but the Shumisen theory is originally an illusory and delusive theory. Therefore, it cannot conceal its falsehood after all. Since the idea of the spherical earth is an actual theory, it is impossible (for the Shumisen theory) to defeat it. Musō (Monnō)'s theory is a rough idea that considered general issues without concrete basis, and therefore, the actual calculation of detailed facts is solely inconsistent.<sup>24</sup>

Motoori's evaluation of Monnō's theory clearly indicates that the system of the world, in order to convince people in this period, had to be conceptualized not as "an illusory theory," but as "an actual theory". Just like modern geography and astronomy, the religious explanation of the world beyond everyday experience was also required to show objective verification as an explanation of the actually existing world. The symbolic representation of the ideal worldview was no longer a plausible representation of "reality" in the consciousness of people who regarded objective verification of actual existence as a proper explanation of reality. In this drastic shift of the common basis of thought, the Buddhist cosmography was also required to be conceptualized in terms of the modern realism.

#### *System of the Shumisen world*

Figure 62 is a blueprint of the miniature mechanical model of the Shumisen world invented by Entsū. This picture is depicted on the hanging scroll, entitled *Shumisengi mei narabini jo* (the inscription and introduction to the miniature model of the Shumisen world), with an inscription and introduction explaining the system of the Shumisen world and the

---

<sup>24</sup> Okubo, ed., *Motoori zenshū*, vol. 14, 171. Musō is Monnō's pen-name.

composition of its miniature model (Figure 76-d in Ono's citation is actually the same picture). This miniature mechanical model of the Shumisen world named *Shumisengi* was actually constructed in a later period. Figure 61 is the picture of the constructed mechanical model. It is said that the models of the sun and the moon in this mechanical model moved corresponding to Entsū's Bonreki theory. Entsū tried to show the correspondence between his theory and the actual figure of the world by using this miniature model of the Shumisen world. In 1813, Entsū published a detailed commentary on the inscription and introduction to this miniature model, entitled *Shumisengi mei narabini jo wakai* (Japanese commentary on the inscription and introduction to the miniature model of the Shumisen world). In this two volume text, Entsū fully described the composition of his miniature model of the Shumisen world.

At the beginning of the line-by-line commentary on the inscription and introduction, Entsū clearly defines the characteristics of his model of the Shumisen world by analyzing the title of the hanging scroll. Entsū says that, according to the dictionary, *gi* means form (*katashi*), representing (*katadoru*), and modeling (*nottoru*). Therefore, *Shumisen gi* means "representing and modeling the Shumisen world."<sup>25</sup> *Mei* is "to name itself" and it means "to reveal the deep meaning of the sacred teaching by showing the form and function of the mechanical model."<sup>26</sup> *Jo* means "to explain the basic theory and to put it in order."<sup>27</sup> This text is, therefore, the explication of the deep meaning of the sacred teaching on the Shumisen worldview and the systematic explanation of the basic theory for making a model of the Shumisen world. Entsū's mechanical model of the Shumisen world was constructed to correspond to the clear definition and the organized theoretical explanation.

According to Entsū, the universe is beyond any measurement and it has no form. Its whole figure and system can be captured only through the sage's divine vision. However, this vast universe also has universal law ruling the system of the world. Through the sacred

---

<sup>25</sup> Entsū, *Shumisengi mei narabini jo wakai*, vol.1 (1813), 9b.

<sup>26</sup> Entsū, *Shumisengi*, vol. 2, 35b.

<sup>27</sup> *Ibid.*, vol. 1, 9b.

teachings in the sacred texts, we can also know the law and system of the world which is beyond human conception. If the model of the world representing the systematic composition of the world corresponds to the universal law ruling the system of the world, this representation of the world can be as realistic (in the sense of modern realism) as the modern scientific representation of the world that verifies the plausibility of the representational model by examining its correspondence to scientific observation and calculation of the universal law. In order to show the correspondence between his model of the universe (in this case the Shumisen world) and the universal law ruling the world system, Entsū introduces the basic astronomical theories in the Buddhist scriptures.

In *Shumisengi mei narabini jo*, Entsū summarizes the principal theories of Buddhist astronomy in Chinese writing. Fully explaining these basic theories and technical terms in the form of Japanese commentary (*wakai*), in the first volume of *Shumisengi mei narabini jo wakai*, he illustrates the movement of the heavenly bodies and the celestial system in the Shumisen world. First of all, he introduces the three heavenly bodies (*sanshin*: the sun, the moon, and the stars) and the three basic orbits of the heavenly bodies (*sankan*) and indicates that the movement of these heavenly bodies precisely corresponds to the astronomical calculation derived from the Buddhist scriptures. The orbits of the sun and the moon slide on fixed tracks at different speeds and this movement of the sun and the moon causes the waning and waxing of the moon. The orbit of the sun changes its height and shifts its sliding direction in one year cycles and creates the seasonal change of the four major islands in the Shumisen world. The stars are distributed on the revolving paths of the sun and the moon and they become a mark for determining the calendar date. The leap time caused by the movement of the sun and the moon is calculated and the system of the leap month in the Buddhist astronomy is clearly explained. We have already examined these astronomical theories explained in his main work, *Bukkoku rekishōhen*, in Chapter 3. In this chapter, focusing on Entsū's theory of the leap month that was not yet fully developed

in *Bukkoku rekishōhen*, I would like to examine the basic characteristics of Entsū's verification of the model of the Shumisen world.<sup>28</sup>

According to the Bonreki theory, the sun and the moon are at opposite positions on the day of the full moon. They get closer 44,080 yujun a day and are located at the same position on the day of the new moon. Then they separate by 44,080 yujun a day. This process is repeated in a 30 day cycle. Multiplying 44,080 yujun by 30 days (the time in which the sun and the moon are separated and meet again), the result is 1,442,400 yujun. This is the basic daily orbit of the heavenly bodies (*tendo*) established for other astronomical calculation. The moon moves less than the distance of the basic orbit a day and the sun moves more than this distance every day. Therefore, the movement of the sun and the moon accumulate the remainder or the shortage against the basic orbit day by day. The daily moving distance of the moon is 22,569.559032916 yujun shorter than the basic orbit. Following the calculation of the day that divides one day into 10,000 bu and multiplying the daily shortage of the moon's moving distance by 10,000, it becomes 225,695,590.32916. Dividing this by the distance of the basic daily orbit, 1,442,400 yujun, the result is 156.472261735 bu. This is the leap time caused by the daily delay of the moon's movement and it is called *metsubu*. In 30 days, the delay of the moon's movement becomes 677,086.77098748 yujun (30 times the daily delay, 22,569.559032916 yujun). Multiplying this by 10,000, it becomes 6,770,867,709.8748. Dividing this amount by 1,442,400 yujun, it will be 4694.167852 bu (in this context, 10,000 bu is one day). This is the leap time caused by the monthly delay of the moon's movement and is called *sakukyobu*.

---

<sup>28</sup> Most astronomical theories introduced in *Shumisengi mei narabini jo wakai* are the same as theories explained in *Bukkoku rekishōhen* which we examined in Chapter 2. However, the explanation of the leap month in *Shumisengi mei narabini jo wakai* is considerably developed compared with that of *Bukkoku rekishōhen*. Entsū explains the theory of the leap month in detail by putting an unusual amount of notes in *Shumisengi mei narabini jo wakai*, and its calculation of the leap month is a little different from that of *Bukkoku rekishōhen*. In this sense, he might have tried to revise or develop a weak theory that cannot be fully explained in *Bukkoku rekishōhen*.

Entsū also calculates the cycle of the moon wanes and waxes. The term in which the moon completes one cycle waning and waxing is called *sakujitsu*. It is basically 30 days, but the actual term is shorter than 30 days, because of the leap time caused by the daily movement of the moon. First of all, Entsū takes the sum of the moon's delay from the basic orbit in 30 days, 677,086.77098748 yujun, from the distance of the basic orbit, 1,442,400 yujun. The remainder of this calculation, 765,313.22901252 yujun, is the moving distance of the moon on the 30th day of the cycle of the moon's waning and waxing. Multiplying this amount by 10,000 bu (considering one day as 10,000 bu) and dividing the result by 1,442,400 yujun (the distance of the basic orbit), we can get 5,305.832148 bu. Therefore, 29 days plus 5,305.832148 bu (one day is 10,000 bu) is one actual cycle of the moon and it is called *sakujitsu*. According to Entsū, this amount completely corresponds to the calculation of his contemporary Western astronomy.

The movement of the sun also creates leap time. According to Entsū's calculation, the sun moves 21,004.3468102419211 yujun faster than the basic orbit of the heavenly bodies everyday. In order to convert this distance to the time, he multiply this amount by 10,000 bu (one day as 10,000 bu) and then divides the result by 1,442,400 yujun (the distance of the basic orbit). The result of this calculation, 145.62082 bu, is the leap time caused by the movement of the sun and it is called *motsubu*. Following the yearly cycle of the movement of the sun, one year is divided into twenty four sections (*nijūyon sekkī*). One section (*ikkī*) consists of 15 days. Multiplying the daily remainder of the sun's revolution, 21,004.346810241921 yujun, by 15 days, it will be 315,065.202154 yujun. This is the remainder of the sun's movement in one of the twenty four sections of the year. Multiplying this amount by 10,000 and dividing the result by 1,442,400 yujun, we can get 2,184.3123 bu. This is the leap time caused by the sun's movement during one section and is called *kieibu* or *kiei*. Since the movement of the sun constantly creates a remainder, the actual length of the one section is not just 15 days, but 15 days plus *kieibu*, that is, 15 days 2,184.3123 bu (one day is 10,000 bu). This actual length of the one section is called

*kisaku*. Multiplying 15 days 2,184.3123 bu (*kisaku*) by 24 (one year is divided into 24 sections), we can get the number of dates in one year, that is, 365 days 2423.4952 bu. This is called *saijitsu* or *saishū*. Entsū emphasizes that this number of dates precisely corresponds to that of Western astronomical theory.

Multiplying the monthly delay of the moon (*sakukyobu*), 4,694.167852 bu, by 12 months, we can get the yearly delay of the moon, that is 5 days 6,330.014224 bu (one day is 10,000 bu). And the number of the dates determined by the movement of the sun is 5 days 2423.4952 bu more than that of the basic calendar year (360 days). This is the sum of the remainder caused by the sun's daily movement (*motsubu*). Adding this yearly remainder of the sun's movement to the yearly delay of the moon, we can get the yearly leap time caused by both the sun and the moon, that is, 10 days 8,753.509424 bu. This is called *tūjun*. Since the seasonal divisions established by the sun's movement and the twelve month period set by the moon constantly enlarge the time discrepancy, it is required to set the leap month in every three years (the sum of discrepancy becomes over 31 days in three years). We can also calculate the yearly leap time (*tūjun*) in another way. As mentioned above, the actual cycle of the moon (*sakujitsu*) was less than 30 days (29 days 5.305.832148). Multiplying the one cycle by 12 months, we can get the actual dates of the lunar year, that is, 354 days 3669.985740 bu (considering the one cycle as 30 days, it will be 360 days). This is called *taiinnen* (the lunar year). And the number of the dates in one year calculated by the movement of the sun is 365 days 2423.4952 bu. This is called *taiyōnen* (the solar year). Taking the number of dates of the lunar year from that of the solar year, the result is 10 days 8753.5095 bu. This is also the yearly leap time caused by the movement of the sun and the moon.

This calculation of the leap month seems to represent the characteristic of Entsū's Bonreki theory. Entsū's theoretical explanation of the system of the Shumisen world was always verified by complicated calculation. Moreover, in the process of explanation, Entsū

frequently indicates the correspondence between his calculation and that of the modern Western astronomy. Entsū explains this correspondence between them as follows:

The Bonreki is undoubtedly correct because it is observed by the divine vision. So we cannot but be touched by the fact that the Western astronomical theory precisely corresponds to the real observation of the divine vision, though it is an accumulation of the human knowledge.<sup>29</sup>

While insisting on the undoubted supremacy of the divine vision, the astronomical theory based on the observation through this divine vision was also verified in the same way as that of modern science. Entsū's model of the Shumisen world (*shumisengi*) was constructed as the cosmography corresponding to this modern scientific style theory and therefore as an accurate representation of the real world.

*Model of the Shumisen World as Genryō (Actual Mass)*

In the second volume of his *Shumisengi mei narabini jo wakai*, Entsū explains the landscape of the Shumisen world and the system of its miniature model. First of all, he criticizes the Buddhist astronomical theory presented by his contemporaries (for example, Monnō) that locates the pole star above the Shumisen. According to Entsū, it is incorrect in three ways: 1) it is inconsistent with the actual mass (*genryō*), 2) it is inconsistent with the survey (*sokuryō*), and 3) it is inconsistent with the Buddhist teaching (*bussetsu*).<sup>30</sup> In other words, Entsū explains the celestial system in the form of the Buddhist astronomy generalized from the entire Buddhist scriptures and corresponding to the actual mass and the scientific survey. He insists that each one of the four major islands in the Shumisen world has its own pole star and other stars that move around that pole star. Only a few exceptional stars pass over all four islands like the sun and the moon.

Next he explains the landscape of the Shumisen world in detail. Unlike the explanation of the landscape in *Bukkokurekishōhen* that introduced the various statements

---

<sup>29</sup> Entsū, *Shumisengi*, vol. 1, 21b.

<sup>30</sup> *Ibid.*, vol. 2, 1a-2b.

form the various Buddhist scriptures, the nine mountains and the eight seas are simply explained as a single established system in this text. According to Entsū, the basic components of the Shumisen world are the Shumisen as the center of the world, the eight more mountain ranges surrounding the Shumisen, and the eight seas inserted between these mountains. The shape of the Shumisen and the seven mountain ranges are a square (*hōsei*) and only the outermost mountain range has the round shape (*en*). The length of the four sides of the Shumisen is 80,000 yujun and its height from the surface of the sea is 80,000 yujun. Its depth under the water is also 80,000 yujun. The seven square shaped mountain ranges surround the Shumisen. The height of the first mountain range from the Shumisen (the inner most mountain range) is 40,000 yujun and its width (from the inner coast to the outer coast ) is 40,000 yujun. Its depth under the water is also 40,000 yujun. There are the two high mountains on each side (eight mountains in all). The length of each side is 240,000 yujun and therefore it is 960,000 yujun round.

The height of the second mountain range is 20,000 yujun and its width is 20,000 yujun. Its depth under the water is also 20,000 yujun. The length of each side is 360,000 yujun and therefore it is 1,440,000 yujun round. There are the four high mountains on each side (sixteen mountains in all). The height of the third mountain range is 10,000 yujun and its width is 10,000 yujun. Its depth under the water is also 10,000 yujun. The length of each side is 420,000 yujun and therefore it is 1,680,000 yujun round. There are eight high mountains on each side (thirty two mountains in all). The height of the fourth mountain range is 5,000 yujun and its width and depth under the water is also 5,000 yujun. The length of each side is 450,000 yujun and therefore it is 1,800,000 yujun round. There are the sixteen high mountains on each side (sixty four mountains in all). The height of the fifth mountain range is 2,500 yujun and its width and depth under the water are also the same. The length of each side is 465,000 yujun and therefore it is 1,860,000 yujun round. There are the thirty two high mountains on each side (128 mountains in all). The height of the sixth mountain range is 1,250 yujun and its width and depth under the water are also the



same. The length of each side is 472,500 yujun and therefore it is 1,890,000 yujun round. There are the sixty four high mountains on each side (256 mountains in all). The height of the seventh mountain range is 625 yujun and its width and depth under the water are also the same. The length of each side is 476,250 yujun and therefore it is 1,905,000 yujun round. There are the one hundred twenty eight high mountains on each side (512 mountains in all). These seven mountain ranges are called *shichikinsen* (the seven gold mountains). There is one more mountain range that has a circular shape surrounding the entire Shumisen world. Its height is 312 yujun and its width and depth under the water are also the same. The diameter of its circle is 1,203,450 yujun and its perimeter is 3,610,350 yujun.<sup>31</sup> This is the border of one unit of the Shumisen world.

Moreover, the measurements of the eight seas between these mountains are clearly stated in this text. The sea surrounding the Shumisen is 40,000 yujun wide. The seven seas surrounding the Shumisen and the seven golden mountain ranges have a square shape. The length of each side is 160,000 yujun and it is 640,000 yujun round. The second sea is 40,000 yujun wide. The length of each side is 320,000 yujun and its perimeter is 1,280,000 yujun. The third sea is 20,000 yujun wide. The length of each side is 400,000 yujun and its perimeter is 1,600,000 yujun. The fourth sea is 10,000 yujun wide. The length of each side is 440,000 yujun and its perimeter is 1,760,000 yujun. The fifth sea is 5,000 yujun wide. The length of each side is 460,000 yujun and its perimeter is 1,840,000 yujun. The sixth sea is 2,500 yujun wide. The length of each side is 470,000 yujun and its perimeter is 1,880,000 yujun. The seventh sea is 1,250 yujun wide. The length of each side is 470,000 yujun and its perimeter is 1,900,000 yujun. These seven seas are the inner seas (*naikai*) filled with a pure heavenly water (*tensui*).

The outermost sea surrounding the Shumisen, the seven golden mountain ranges, and the seven inner seas, is 625 yujun wide. The length of each side is 477,500 yujun and its

---

<sup>31</sup> 1 oku (laksa) is 100,000 in this case.

perimeter is 1,910,000 yujun.<sup>32</sup> The four major islands of the Shumisen world are distributed on this outermost sea. Each one of the four islands is accompanied by the two middle islands and the eight little islands. According to Entsu, our world is distributed on the southern island and its middle and little islands. In his *Bukkoku rekishōhen*, Entsu even developed a geographical theory mapping all the countries or regions that were on the world map of his period. In this text, however, only the shape and location of each island is briefly explained.

Following this numerically measured landscape, Entsu explains the composition of his miniature mechanical model of the Shumisen world. The appearance of this model corresponded to the numerical measurement of each part of the Shumisen world and the plausibility of the measurement was verified by examining the correspondence between the calculation of the systematic movements of the heavenly bodies and the model of the world as an actual existence. Entsu's miniature model could actually be moved by clockwork. Scores of springs were built in the model, and the models of the orbit of the sun and the moon were turned and slid in correspondance with his astronomical theory.<sup>33</sup>

However, the Shumisen world is so vast that it cannot be modeled as precisely corresponding to its actual figure. In order to visualize its details in a clear form, he adjusts the size of some components of the Shumisen world. The universe is too wide and too large and therefore "its mass can not be constructed following the single standard."<sup>34</sup> For example, if he makes the model of the revolution path of the sun and the moon by calculating the difference between the inner path and the outer path as 2.9 sun (1 sun is 3.78 cm), the circle representing the revolution path will be 48 jō (1 jō is 3.78 m). This circle is too large to model, and the difference between the inner and the outer paths cannot be shortened to show the daily change of the orbits of the sun and the moon. In order to

---

<sup>32</sup> This amount should be the measurement of the inner side. The outer side of this sea is surrounded by the circular mountain range

<sup>33</sup> Entsu, *Shumisengi*, vol. 1, 11a-11b.

<sup>34</sup> Entsu, *Shumisengi*, vol. 2, 32b.

model the universe, some adjustments are indispensable. He explains this situation as follows:

Even in the case of the models, such as *Kontengi* (celestial model following the spherical earth theory), if we follow the mass of the sun's revolution path, the earth becomes just like a piece of dust and it would still be bigger than the actual mass. Generally, the celestial models cannot but be like this.<sup>35</sup>

Adjusting the size of each part of the Shumisen world to be convenient for visual explanation of its world system, Entsū calculates the size of each component of his miniature model of the Shumisen world.

The orbit of the sun slides from the north to the south or from the south to north in a one year cycle. The sun pass through the northern most point (or the closest point to the Shumisen) of one of the four islands on the day of the summer solstice (each island has the different season at any one time). This path slides toward the south daily and reaches the southern most point on the day of the winter solstice. After the winter solstice, the orbit of the sun starts sliding toward the north. The moon completes the same course change in 30 days. According to Entsū's theory, the distance between the northern most path (*nairo* or the inner path) and the southern most path (*gaïro* or the outer path) is 290 yujun. Entsū converts this distance into 2.9 sun (10.962 cm) by calculating 10 yujun as 1 bu (3.78 mm, 1/10 of 1 sun). In order to explain the daily change of the sun's and the moon's orbits, he adopted this reduced scale. However, the other parts of his model were constructed following different reduced scales.

The Shumisen, the seven golden mountain ranges, and the orbits of the sun and the moon are calculated by regarding 10,000 yujun as 5 bu (namely, 2,000 yujun as 1 bu). This reduced scale is only 1/200 of the above mentioned scale. The outer most mountain ranges that are actually the border of the model are constructed by calculating 10,000 yujun as 3 bu. Entsū explains the reason why he adopts the different scales as follows:

---

<sup>35</sup> Entsū, *Shumisengi*, vol. 2, 33a.

The reason why the mass (of the outer most mountain range) was reduced by 2 bu from the mass of the seven golden mountain ranges and the other parts of the model was that I was worried that the size of the model could be enormous because of its large diameter, 1,203,400 yujun.<sup>36</sup>

Even slight inconsistency between the model and the actual figure of the world is theoretically explained in Entsu's model of the Shumisen world.

If the four islands are constructed following this scale (10,000 yujun as 5 bu), their sizes become only 1 bu (3.78 mm). This size is too small to show the shape and component of the four islands. So he constructs the model of these islands by calculating 100 yujun as 1 bu (20 times bigger than the scale of the Shumisen and the seven golden mountain ranges). The main concern of his model was to copy and represent the figure of the Shumisen world in visually explainable form, and therefore, the reasonable adjustment was required to construct the detailed components of the model. He also constructed a ring showing all 360° of direction above the model of the outermost sea and distributes the 28 stars on the path of the moon (*nijūhasshuku*) which are the significant marks for astronomical observation and calculation of the calendar.

In regard to the fact that he adjusts the size of the components, his model does not directly represent the Shumisen world as an actual existence. However, these adjustments are precisely calculated and theoretically explained in his model. In the sense that his model was constructed as corresponding to the theoretical explanation of the system of the world that could be scientifically observable (especially, with astronomical observation), Entsu's *Shumisengi* was realistic in the sense of modern realism. By using visual equipment that demonstrated the correspondence between his theory for explaining the system of the world and the figure of Shumisen world, Entsu tried to verify the Buddhist worldview as an explanation of the real world. If this theory explaining the system of the Shumisen world

---

<sup>36</sup> Entsu, *Shumisengi*, vol. 2, 34b.

corresponded to the observation of natural phenomena, the model of the Shumisen world can be as realistic as the earth globe and celestial globe.

His basic concern was to show that the Buddhist worldview was not a myth, but a science. In other words, he reconstructed the astronomical (and simultaneously astrological) theory in the Buddhist scriptures in terms of modern scientific theory. This shift in method for conceptualizing the world is clearly reflected on his cosmography. Contrary to the previous Buddhist cosmography which was a symbolic representation of reality, Entsū's model was constructed as an accurate representation of the real world which was sustained by a scientific verification of the correspondence between the representation and the represented. In Entsū's cosmography, the relation between the representation and the represented was based on their "contiguity," there was no room for the random change of representation that was available in the symbolic representation of reality. In his cosmography, the Shumisen can no longer be depicted as the cosmic tree. It has to be depicted as the mountain that has a specific size and form.

This cosmography is different from Monnō's cosmography of the Shumisen world, though both of them share the similar sophistic criticisms of Western astronomy. While the components of the Shumisen world are depicted randomly in Monnō's picture (Figure 19), each component of Entsū's miniature model of the Shumisen world has a fixed size and shape that correspond to the theoretical explanation of the figure of the Shumisen world. Entsū himself criticizes the defense of the Buddhist worldview against the idea of the spherical earth that emerged before his Bonreki theory as follows:

Even though there were the books (criticizing the Western astronomy), such as *Fukyō shinmon*, *Tenmon benwaku*, and *Kaichōron*, in recent years, they did not know the astronomical theories outside Buddhist tradition, nor even examined astronomical theories in the Buddhist scriptures. How can they protect Buddhism from the criticism of others?<sup>37</sup>

---

<sup>37</sup> Entsū, *Bonreki sakushinin* (1816), 14.

The establishment of Buddhist science and the conceptualization of the Shumisen world as an actual existence in the sense of modern realism only starts with Entsu's cosmography. In his ground breaking theory, the Shumisen world became "extended substance" that can be depicted only as an existent entity.

### **The Shumisen as Extended Substance: Meaning of Entsu's Invention**

In this chapter, I have studied the three representative Buddhist cosmographies (traditional, transitional, and modern) focusing on the relation between the representation (cosmography) and the represented (the Shumisen world) in each case. Despite the commonness of their subject (the Shumisen worldview) and their basic motif (such as the nine mountains and the eight seas), there are many differences at the level of their "way" of writing the Shumisen world. In particular, there is a rupture between Entsu's model of the Shumisen world and the other cosmographies.

First of all, the biggest stylistic difference between Entsu's model and the other two was the separation of the seen world from the unseen world. In the previous Buddhist cosmographies, the realms above the top of the Shumisen and the world under the Shumisen were united and the realm of desire and the realms of form and non-form are described as the same ideal world. In Entsu's model, however, the realm above the top of the Shumisen (the realm of the world that cannot be captured by the human vision) was separated from the world under the Shumisen, and the Shumisen world surrounded by the eight seas and the eight mountains is depicted as the independent world that can be captured by the human vision. This is the new style of writing the Shumisen world that had never existed before Entsu's period. In Monno's cosmography too, the Shumisen world is described as an independent system for competing with the idea of the spherical earth. However, the realm of desire (the world under the Shumisen) and the realms of form and non-form (the realms above the top of the Shumisen) was not separated yet. Only in the attempt that tries to scientifically verify the reality of the ideal worldview, does there emerge

a perspective to divide the realm that can be explained at the level of scientific verification from the realm beyond scientific verification.

Entsū tried to reconstruct the Buddhist worldview as an objectively and scientifically explainable system, by showing the coincidence between the movement of the heavenly bodies and the Buddhist calendar system, and the correspondence between the scientific survey of astronomical and natural phenomena and the Buddhist world system. Only in Entsū's model of the Shumisen world, which attempted to scientifically verify the existence of the Shumisen world, were the realms above and below the Shumisen separated as realms that belong to different dimensions of the world. As Entsū mentions in his *Bukkoku rekishōhen* that "People often regard delusive knowledge (*ryochi*) as wisdom (*chi*). They do not know that there is wisdom beyond thought (*nen*),"<sup>38</sup> the realms above the top of the Shumisen are the realms beyond the survey of the human vision and they are systematically different realms of the universe that can only be captured through the divine vision. For Entsū, who attempted to reconstruct the Shumisen worldview as a scientifically verifiable system of universe which could compete with the modern scientific worldview, it was natural to separate the realms above the Shumisen as the realms beyond the capacity of the human vision.<sup>39</sup>

The second point is the idea of the reduced scale. In Tōdaiji's picture of the Shumisen worldview and Monnō's picture, each component of the Shumisen world is depicted randomly. These pictures represent the Shumisen worldview described in the Buddhist scriptures. On this point, they are the same as Entsū's model of the Shumisen world. In these pictures, however, there is no perspective yet that requires a precise correspondence between the pictorial representation and the astronomical and geographical theories in the

---

<sup>38</sup> Entsū, *Bukkoku rekishōhen*, vol.5 (1810), 52.

<sup>39</sup> Thinking of the newness of Entsū's style of writing the Shumisen world, it is interesting that the pictorial representation of the Shumisen world in the modern period always follows Entsū's style. Every pictorial explanation of the Shumisen world system in the modern Buddhist encyclopedia is almost identical to Entsū's model. This is one of the significant issues in considering the relation between Entsū's Bonreki theory and modern Buddhism.

Buddhist scriptures. Only in Entsū's Buddhist cosmography which depicts the Shumisen world as a scientifically verifiable reality, did the precise correspondence between the cosmography as a representation and the figure of the real world represented by the cosmography become a significant issue. In Tōdaiji's picture, for example, the figure of the components of the Shumisen world, such as the size of the Shumisen and the four islands, the shape of the eight mountain ranges and the eight seas, the distance between these components, is not depicted following the description of the Shumisen world in the Buddhist scriptures. The significant issue in this picture is to represent the Shumisen world as an ideal worldview, and therefore the Shumisen world need not be represented as corresponding to the astronomical and geographical teachings in the Buddhist scriptures as a data base. In Monnō's picture, the size and location of each component of the Shumisen world are indicated by letter, but these lettered indications do not correspond to the actual cosmography. Some components of this picture, such as the shape of the four islands, is even less faithful to the statements in the Buddhist scriptures than those of Tōdaiji's picture.

On the contrary, Entsū attaches importance to the information about the size, distance and direction of each component of the Shumisen world in the Buddhist scriptures and depicts his model of the Shumisen world as corresponding to this information. According to Entsū, the astronomical theories and the description of the landscape of the Shumisen world in the Buddhist scriptures are more precise than those of the modern Western science. The modern world map and the scientific model of the universe are always explained just as corresponding to the theory of modern astronomy and the geographical knowledge captured by a scientific survey. In Entsū's model too, therefore, the landscape of the Shumisen world has to exactly correspond to the Buddhist astronomical theory that explains the movement of the heavenly bodies and the changes of the seasons. Entsū calculated and clarified the size, location, and direction of each component of the Shumisen world and constructed his model of the Shumisen world as a model that can compete with



the modern earth globe and celestial globe. Therefore, Entsū precisely calculated the reduced scale of each component and tried to convince people of the fact that his model of the Shumisen world was the precise model of reality. In the case of some components that cannot be represented with the same reduced scale as that of the other components, Entsū added the explanation and calculation about the change of scale and tried to solve the inconsistency caused by the process of model making. This pursuit of the precise representation was also a new style of writing Buddhist worldview that never existed before Entsū's model of the Shumisen world.<sup>40</sup>

The third point is the difference of the knowledge that determined the style of these Buddhist cosmographies. In Tōdaiji's picture, the Shumisen world was depicted as a part of the enormous ideal worldview described in *Bonmōkyō*. In Monnō's picture of the Shumisen world, the one unit of the Shumisen world was faithfully depicted as explained in *Kusharon*. Therefore, both pictures become a symbolic representation of an ideal worldview. The knowledge behind Entsū's model of the Shumisen world, however, is the numerical values and the information about the component of the Shumisen world which were derived from various Buddhist scriptures as a data base. The plausibility of this information is always examined in comparison with modern scientific theory and geographical knowledge. The knowledge behind Entsū's model was the Buddhist astronomy and geography constructed through this process as a code for writing the Buddhist worldview. This Buddhist astronomy and geography as a general code for writing the Buddhist worldview was frequently refigured by the actual astronomical observation and survey and constructed as a theory for writing the Shumisen world as it actually exists. In this sense, while Entsū's model of the Shumisen world was a representation of the same ideal worldview as that of Tōdaiji's and Monnō's pictures, Entsū's Buddhist cosmography was also a representation of the world as an actual

---

<sup>40</sup> This pursuit of the preciseness of the pictorial explanation is also common to the modern pictorial explanation of the Buddhist worldview.

existence that was not significant for the previous Buddhist cosmographies. This pursuit of scientific plausibility as a representation of reality was also a new style of writing Buddhist worldview that never existed before Entsu's Buddhist cosmography.

Just as Entsu's world map depicted the modern geographical knowledge on the Enbudai island, Entsu's model of the Shumisen world was also a cosmography that pursued scientific verification as a representation of the real world in terms of the Buddhist worldview. In this sense, in the same manner by which we can see the historical shift of the general geographical recognition of the world by studying the discourse of cartography, we can also see that the emergence of Entsu's Buddhist cosmography which pursued scientific verification of the Buddhist worldview also corresponds to the shift in the way of understanding what was "real" and how "real" was determined in Entsu's period.

According to these comparisons, while all cosmographies share the same subject, there is a clear rupture between these cosmographies which came before and those which came after Entsu's model of the Shumisen world. This rupture is most clearly seen at the level of their "way of writing" the world. This shift in the way of writing the Shumisen world represents an epistemological shift in the general standard of what is real, because the authors of these cosmographies tried to represent the Shumisen world as "realistic" as possible by their conventional standards. Explaining the difference between Entsu's model of the Shumisen world and the Buddhist cosmography before Entsu's model using the terms of Kenneth Burke, it can be said that the emergence of Entsu's cosmography indicates a shift from "poetic realism to scientific realism."<sup>41</sup> The way of representing the Buddhist worldview shifted from a symbolic representation of the known world to the modern realistic representation of the seen world in accordance with the shift in the epistemological standard. In this sense, Entsu's model of the Shumisen world represents an emergence of the new type of Buddhist cosmography corresponding to the emergence of

---

<sup>41</sup> Kenneth Burke, *A Grammar of Motives* (Berkeley: University of California Press, 1969), 504.

modern science, modern historiography (as a representation of things as they are), and realistic art (art as an accurate representation of the nature) at the level of their discourse.<sup>42</sup>

This new style of writing the Buddhist worldview is also the style of writing the Buddhist worldview in the modern Buddhist discourse. For example, the title of Ono Genmyō's essay cited in this chapter was "Buddhist astronomy (*Bukkyō tenmongaku*)."<sup>42</sup> His Buddhist cosmography based on the generalized theory of Buddhist astronomy is similar to Entsū's model of the Shumisen world (Figure 82). In this picture, the realm above the top of the Shumisen and the realm under the Shumisen are separately depicted as the realms of the world which belong to different dimensions. Each component of the Shumisen world is depicted and distributed as faithfully corresponding to the information in the Buddhist scriptures which are used as a data base. Moreover, as we can see in the title, the basic knowledge behind this Buddhist cosmography is the Buddhist astronomy as a general theory derived from the Buddhist scriptures through a similar procedure to that of Entsū's Bonreki theory. Ono's work is not the only example. As far as I know, every modern Buddhist work that explains the Buddhist worldview with the picture of the Shumisen world follows the same procedure. Thinking of the difference between Entsū's model and the premodern Buddhist cosmography, this similarity between Entsū's model and the modern pictorial explanation of the Buddhist worldview provides us with an interesting insight for considering the relation between Entsū's Bonreki theory and modern Buddhism. In the following chapter, I would like to pursue this issue further focusing on the activities of Entsū and his followers.

---

<sup>42</sup> However, this does not mean the shift from the description of idea to the description of reality. As Jacobson and Gombrich indicate in the field of art history, scientific realism is only a mode of writing, and scientific realism does not mean the description of real that was finally achieved in the modern period. In this sense, Entsū's cosmography that attempted to describe the Shumisen world system, which cannot but be illusory from today's perspective, as a representation of reality is a nice mirror image reflecting the ideological characteristic of modern scientific realism.

**CHAPTER 5**  
**MOVEMENT: DEVELOPMENT OF *BONREKI UNDŌ***  
**IN NINETEENTH CENTURY JAPAN**

**Meaning of Silence**

On the first page of his *Bukkoku rekishōhen*, Entsū declares the three major motivations of writing this book. As one of these motivations, he says as follows:

To complement the missing teaching of Buddhism, by introducing Bonreki, which has never been introduced into Japan. <sup>1</sup>

Entsū's Bonreki theory was a reconstruction of the Buddhist thought using a completely new perspective, though its claim of Indian origin was the basic source of its authorization. Even though the Buddhist worldview was sometimes attacked by Jesuit priests in the sixteenth century and Neo Confucian rationalists in the previous period, and there were some reactions to the newly introduced modern astronomical theories in the eighteenth century, the Buddhist astronomy (*bonreki*) and the Buddhist cosmography (*shumisensetsu*) at the level of the modern realism almost suddenly became a crucial issue for the Buddhist in the nineteenth century.

In the late Edo period, the knowledge of modern Western astronomy that was prohibited from being popularly circulated in the early Edo period became popular through the direct translation of Dutch texts as well as through the popular circulation of the Chinese texts. The publication of the printed matters that used to be a religious activity at the Buddhist temple was established as an independent business in the Edo period, and the various types of books including the popular novels (*sōshi*) and the general educational

---

<sup>1</sup> Entsū, *Bukkoku rekishōhen*, vol.1 (1810), 1a.

texts (*mono no hon*) were published by the publication company especially in the three major cities: Edo, Kyoto, and Osaka. However, as represented by the official organization of the publisher's guild in 1721, the contents of the published materials were under the strict control of the Tokugawa government. Therefore, the approval of the publication of the Western astronomy texts allowed the Western astronomical theory that had been the knowledge of only a few specialists to become rapidly the general knowledge of the people. Moreover, as a result of the growth of the urban area in this period and the dissolution of the cultural gap between the feudal social classes in the urban economic society, there had already emerged the social and cultural condition in which the general knowledge of astronomy could be a matter of broad public debate.<sup>2</sup> In other words, the discrepancy between the modern scientific worldview and the religious cosmology already had become a crucial issue for the general public in Entsu's period. Following the increasing needs of the reconstruction of the Buddhist thought in terms of this new intellectual condition, Entsu's Bonreki theory was accepted by his contemporary Buddhists and even general astronomers, and their activities became an intellectual movement called *Bonreki undō* (the Bonreki movement). However, just as this movement suddenly emerged at the beginning of the nineteenth century, it suddenly disappeared soon after the Meiji restoration and became a completely forgotten movement. The main subject of this chapter is to think of the meaning of these silences before and after the Bonreki movement. We already discussed the newness of Entsu's discourse and its cosmography in Chapters 3 and 4 and reviewed the relation between Entsu's new discourse and the shift in the common ground of thought in his period in Chapter 2. Therefore, here I would like to pay more attention to the sudden disappearance of the Bonreki movement.

The Bonreki movement has been studied as a dharma preservation theory (*gohōron*) or an anti-Christianity theory that became popular in the late Edo and the early Meiji

---

<sup>2</sup> Minamoto Ryōen, "Edo kōki no hikaku bunkaronteki kōsatsu (study of the late Edo period from a perspective of cultural comparison)," in *Edo kōki no hikaku bunka kenkyū*, ed. Minamoto Ryōen (Tokyo: Prerikan sha, 1990).

Buddhist discourse.<sup>3</sup> In this context, the emergence of the Bonreki is considered to be a result of the increasing ideological criticism against Buddhism. However, as frequently mentioned in the previous chapters, the Bonreki theory was rather an invention of the new Buddhist cosmography in terms of the modern scientific discourse and this scientific discourse created a rupture between the Buddhist cosmographies before and after the Bonreki. Entsū's doubt concerning the Buddhist worldview inspired by the modern scientific discourse was the beginning of the Bonreki movement and, at least in Entsū's early works, we can hardly find the defense of Buddhism against the ideological criticism or the anti-Christian theory. At least at the beginning of the Bonreki movement, therefore, the Bonreki was not a reaction to the ideological criticism of Buddhism, but a reconstruction of Buddhist thought in terms of the cultural conditions of the late Edo period as the cradle of modern Japan. As long as we regard the Bonreki as a dharma preservation theory, the sudden disappearance of the Bonreki movement and the silence after that cannot but be a representation of the rupture between the Bonreki as a reaction against the ideological criticism of Buddhism and the modern Buddhism that overcame the ideological criticism and reconstructed the Buddhist thought in terms of the modern science and philosophy. However, as frequently mentioned in the previous chapters, we cannot clarify the complicated relation between the Bonreki theory and the modern Buddhology in such a stereotyped analysis.

In order to reconsider the meaning of the sudden disappearance of the Bonreki movement, therefore, we should first stay away from the content-oriented interpretation of the Bonreki theory as a dharma preservation theory or an anti-Christianity theory and pay more attention to the discursive characteristics of the Bonreki movement that tried to establish the Buddhist astronomy as a new scientific theory. As long as we consider the

---

<sup>3</sup> Itō Tasaburō, "Kinsei niokeru kagakuteki sekaikan no hattatsu nitaisuru handō nitsuite," *Shūkyō kenkyū* 11 (1934) emphasizes the relation with the anti-Christianity theory. Itazawa Takeo, "Kinsei niokeru chidōsetsu no tenkai to sono handō," *Shigaku zasshi* 52 (1941), Yoshida Tadashi, "Kinsei niokeru Bukkyō to seiyōteki shizenkan no deai," in *Bukkyō to Nihonjin*, vol. 11 (Tokyo: Shunjūsha, 1986), and Watanabe Toshio, *Kinsei nihon tenmongakushi* (Tokyo: Kōseisha kōseikaku, 1986) put more focus on the dispute between the anti-Buddhist theory and the Bonreki as a dharma preservation theory.

relation between the Western astronomy and the Bonreki as an ideological contradiction between the modern value (or Christianity) and the traditional value (or Buddhism), the Bonreki movement cannot but be an oppositional intellectual movement to the modern Buddhism. But if we were able to reformulate the contradiction between the modern astronomy and the Bonreki theory as an opposition between the two scientific theories, the meaning of the sudden disappearance of the Bonreki movement and its second silence, which is important for considering the relation between the Bonreki movement and modern Buddhism, would also be changed significantly. Because their opposition could be considered a competition between the two types of modern scientific discourses in this context. Tracing the historical development of the movement and its dissolution from a perspective that features the meaning of the silences before and after the Bonreki, I would like to reconsider the complicated and often misunderstood relation between the Bonreki movement and the modern Buddhism in this chapter.

### **Spread of Bonreki and Formation of School**

In 1810, Entsū completed his main work, *Bukkoku rekishōhen*. In this five volume text, Entsū established his comprehensive theory of Buddhist astronomy critically reviewing the Western and the Chinese astronomical theories. According to Kudō Kōkai's biography of Entsū, Entsū also started the Bonreki movement in 1809.<sup>4</sup> Kudō's criteria of the establishment of the Bonreki movement is not clear in the context of his work, but, since most of Entsū's works were published during the decade after 1810, we could at least say that the period around the completion of *Bukkoku rekishōhen* was the establishment period of the Bonreki theory. After the study of the general astronomy (including Western, Chinese, and Japanese) and the various Buddhist scriptures for over thirty years, Entsū established his unique theory of Buddhist astronomy around the first decade of the nineteenth century and actively propagated the Bonreki theory in the rest of his life.

---

<sup>4</sup> Kudō Kōkai, "Fumon risshi no Bonreki undō to shino ryakuden," *Meiji shōtoku kinen gakkaihō* 56 (1941): 40.

Nowadays, we do not have so many materials to know about Entsū's propagation activity of the Bonreki theory. There are only fragmentary statements in the various works of Entsū and his disciples.<sup>5</sup> According to these fragmentary resources, Entsū actively preached or lectured his Bonreki theory at the various places. In the summer of 1817, Entsū was invited by the Takada sect of Shinshū to lecture on the Bonreki theory. One of Entsū's disciple, Renjun, mentioned this lecture in the introduction to his work of Bonreki theory.<sup>6</sup> According to another disciple of Entsū, Shingyō, Entsū also lectured on his Bonreki theory at the Kōyasan and the Hieizan. Since he used *Shumisengi mei narabini jo* as a text of these lectures, the focus of the lecture might have been more on the system of the Shumisen world than on the Buddhist calendar system. According to Shingyō, the lecture hall was crowded by the high ranking monks and people of the noble class.<sup>7</sup> The places where Entsū lectured on the Bonreki theory was not only the above mentioned places. It is also said that Entsū actively sent his work to the religious authorities and frequently made a tour for lecturing the Bonreki.<sup>8</sup>

As Entsū was invited by the various Buddhist sects to lecture about Bonreki, his theory was accepted as a trans-sectarian teaching. As a general Buddhist astronomical theory that can be a basis for answering the questions raised by the modern scientific worldview, Entsū's Bonreki soon became popular among the Buddhist monks as well as lay astronomers. It is said that Entsū sometimes had to lecture on the Bonreki in the different cities every month.<sup>9</sup> Besides these lecture tours, Entsū also lectured on the Bonreki theory at his own place and published many works. By looking at the statements

---

<sup>5</sup> All biographies of Entsū published or written up to this time are a simple tracing of his life at the level of *Kōsōden*. My investigation here is also at the same level and the main focus of my dissertation is on the decoding of Entsū's narrative discourse in his works and the interpretation of the meaning of the Bonreki thought in the context of Japanese intellectual history. Thinking of the significance of Entsū's Bonreki theory, the more completed biography should be written in the future.

<sup>6</sup> Renjun, *Shumikai ichiran*, vol. 1 (1865), Introduction.

<sup>7</sup> Shingyō, *Daikanki yujunbinran* (1846), 3b.

<sup>8</sup> According to Itō Tasaburō, "*Kinsei niokeru kagakuteki sekaikan*," (1934), Koide Chōjūrō's biography of Entsū mentions these activities (p.259).

<sup>9</sup> Yoshida, "*Bukkyō to seiyōteki sekaikan*," (1986) introduces Entsū's letter that mentions Entsū's hard schedule for lecturing the Bonreki.



of his disciples, Entsū preached the Bonreki theory on a busy schedule. Even though the astronomical theory based on the flat worldview sounds curious from today's point of view, Entsū's Bonreki had a certain level of plausibility in his period and stimulated the public interest of his time.

As a result of these propagation activities, many people gathered to study the Bonreki theory under the instruction of Entsū. These disciples of Entsū formed a kind of a sectarian group (*bonreki kessha*) and actively propagated and lectured on the Bonreki theory in various places. According to Kudō Kōkai's survey, Entsū organized the Bonreki group in the Kansei era (1788-1800) for the first time, when he was in the Sekizenin in Kyoto. It is said that in only a half year, over three hundred people joined in the Bonreki group.<sup>10</sup> When Entsū passed away in 1834, the number of his disciples was over one thousand. If the number of the members was really over one thousand at the time of Entsū's death, it can be said that the Bonreki movement that was more developed by Entsū's followers in the later period was a significant Buddhist intellectual movement in this period.

As historical materials to help us know about the Bonreki group, there are the stone monuments built by Entsū's followers and titled *Bonreki kaiso no hi* (the monument of the founder of the Bonreki). The first monument that was constructed as a part of the group activity was built in 1846. One of Entsū's main disciples, Shingyō, proposed to built this monument and it was built on the grounds of the Bukkōji in Kyoto. The inscription of the monument is as follows;

### **The Monument of the Founder of the Bonreki**

Fumon, the great precept master, Entsū. His popular name (*azana*) is Kagetsu. His pen name (*gō*) is Mugaishi. The son of the official of the Inaba region. Became a Buddhist monk at seven and accepted the precepts under a Buddhist monk, Gōchō. Mastered both Japanese and foreign learnings. Especially had a thorough knowledge of astronomical theory. The master (Entsū) once said that every astronomical theory in China throughout its history took pride in its precision.

---

<sup>10</sup> Kudō Kōkai, *Gihō Bonreki undō shijōniokeru Shingyō gakutō no hoshoku* (contribution of the head scholar monk, Shingyō, in the history of the Bonreki movement), in *Kinnō gohō Shingyō gakutō*, Satake Junnyo, ed. (Kyoto: Daigyōjishi kankō iinkai, 1936), 127.

However, none of them could surpass the limit of our Buddhist teaching. Moreover, the Western new theory skillfully tricks people, and the disturbance caused by it is especially excessive. Only our Buddhist teachings actually get at the deep truth of the earth and the heaven. It is completely without omission. However, with such nonsense theories, people have doubt about the Buddhist faith. Never break their blindness and deafness and never realize the wisdom. How could he not make efforts for this? He constantly thought of it. One day he learned *Risseabidowron* and got an inspiration. Then he studied it (*Risseabidowron*) for a long time and finally wrote *Bukkoku rekishōhen*. Moreover, he created the miniature models of the Shumisen world and the celestial system and wrote Japanese interpretation of its inscription. Showing the system of the exchange of four times under the four divisions of the world, he made people realize that the system of the movement of heavenly bodies in the Buddhist teaching was solely based on actual experiments (*jikken*) and it was not nonsensical theory. After that, he also wrote other works, such as *Jikken shumikai setsu* and *Shumikairekisho*. Besides, with an oral instruction, he revealed the Buddhist calendar system and the scale of the Shumisen world and clarified that the essential teaching of the other calendar systems was pirated from the Buddhist calendar system. Oh, it was fortunate for people that the Buddha widely preached the astronomical theory and the precept master (Entsū) appeared in our country thousands of years later. The master first lived in the Sekizenin in Kyoto and moved into Edo in his later years according to the order of the head priest of the Tendai sect. He lived in the Keishōin of Zōjōji. He passed away on September 4, 1834 at the age of eighty one. His disciples build a stone monument to make his virtue known to the public and to transmit it to the later generations forever.<sup>11</sup>

Seven years before the building of this monument (1839), Shingyō also built another stone monument in his home town, Ogaki, that inscribed "the monument of the precept master Fumon: the Founder of *Butsureki* (Buddhist astronomy) in Japan (*Dainihonkoku*)."<sup>12</sup> In 1849, the similar stone monument was built in the Hōouji in Nagoya supported by the Bonreki group in the Nōbi region. The inscription of this monument was almost the same as that of "The Monument of the Founder of the Bonreki." The Hōouji was a base of the Bonreki movement in the Nōbi region and the seventh anniversary ceremony of Entsū's death was also held at this temple.<sup>13</sup> The building of these monuments in the central districts of Japan represents the existence of the Bonreki group in these areas in addition to Kyoto and Edo where Entsū propagated the Bonreki. In Edo and Kyoto, Entsū already had a group of disciples at the time of his death. Since Entsū's other main disciple, Kanchū,

---

<sup>11</sup> Watanabe, *Kinei Nihon tenmongakushi*, 314.

<sup>12</sup> Satake Junnyo, ed., *Kinnō gohō Shingyō gakutō*. (Kyoto: Daigyōjishi kankō iinkai, 1936), 63.

<sup>13</sup> *Ibid.*, 63-64.

propagated the Bonreki in the Bōshū region, there might have been a similar group of people in the south west districts of Japan too. There is no way to determine the exact scale of the Bonreki group in each region now, but at least it is certain that the activity of the members of the Bonreki group was not restricted to the areas of Entsū's activity, such as Edo and Kyoto, and their movement spread into the various regions.

### *Members of the Bonreki School*

Moreover, the title of Entsū, *Bonreki kaiso* (Founder of the Bonreki), indicates the existence of a group of people who adhered to the Bonreki as a certain discipline. At least at the time of Entsū's death, he and his followers organized a sectarian group that can be called the Bonreki school (Appendix 1). Many members of the Bonreki school were significant figures of the major Buddhist sects and they lectured the Bonreki theory in the various Buddhist sects. Shingyō (1774-1858), who was one of the closest disciples of Entsū and built the monument of Entsū, was the founder of the Daigyōji in Kyoto and the head scholar of the Bukkōji sect (one of the Jōdo Shin sects). He was born in Gifu, and mainly studied the sectarian Buddhology (*shūgaku*) of the Shinshū sects. Shingyō had a high religious and political status as the head scholar of the Bukkōji sect and aggressively propagated the Bonreki theory. He was surely one of the most influential disciples of Entsū and when Entsū published his *Bonrekisakushin* in 1816, Shingyō attached an appendix and emphasized the importance of the Bonreki theory.<sup>14</sup> He established a private school in his own temple, the Daigyōji, and lectured on the Bonreki theory. After the death of Entsū, the Bonreki school was split into the two inner divisions due to the theoretical discrepancy. Shingyō became the leader of one party.

The leader of the other party, Kanchū, was the scholar of the Tenryūji in Kyoto. His life and activity still need to be investigated, but at least it is certain that he was a key figure of the Bonreki movement. According to the one of his disciples, Fukō Yūman, Kanchū

---

<sup>14</sup> Kudō, "*Shingyō gakutō no hōshoku*," 131.

was the official successor of Entsū. He cites Entsū's letter (1826) promising that Entsū would give Kanchū the status of the leader of the Bonreki school and hand over Entsū's instruments to Kanchū in the form of a catalogue.<sup>15</sup> However, Kanchū's opponent, Shingyō also held a similar letter, and the publisher of the history of Shingyō's temple, Daigyōji, too claims that Shingyō was the official successor of Entsū.<sup>16</sup> As we will see later, Kanchū's development (or transformation) of Entsū's theory was the main cause of this separation of the Bonreki school. Even though it is hard to determine who was the real successor of Entsū, the confrontation of the two parties itself shows an importance of Kanchū in the Bonreki movement. Kanchū's disciples actively developed and propagated the Bonreki theory. One of Kanchū's disciples, Kōgen, lectured on the Bonreki in the west Honganji in 1850, and it is well known that another disciple of Kanchū, Sada Kaiseki, developed his original theory and propagated the Buddhist astronomical theory as a part of his ultra nationalistic movement in the Meiji period.

The other disciples also actively propagated the Bonreki theory in various Buddhist sects. Reiyū was a lecturer of the school at the headquarters of the east Honganji sect. He lectured mainly on astronomy and published many works relating to the Bonreki theory. Another disciple of Entsū, Ankei was a monk of the west Honganji sect and lectured on astronomy in the school of the west Honganji. He also published many works and developed Entsū's theory. These disciples of Entsū published many works of the Bonreki theory and lectured the Bonreki at the famous Buddhist temples. However, the Bonreki school consisted of not only these leading disciples who were the high ranking Buddhist monks, but also a lot of students of these leading disciples. For example, it is said that there were always more than two hundred students in Shingyō's private school of his temple, Daigyōji.<sup>17</sup> Thinking of the influence of these lectures on the general Buddhist

---

<sup>15</sup> Fukō Yūman, *Honchō bonreki shishi keifu* (lineage of the Bonreki in Japan) (1883), 2.

<sup>16</sup> Satake Junnyo, ed., *Kinnō gohō Shingyō gakutō* (Kyoto: Daigyōjishi kankō iinkai, 1936), 55.

<sup>17</sup> Kudō, "Shingyō gakutō no hōshoku," 136.

monks, it is obvious that the Bonreki movement was a considerably influential Buddhist intellectual movement in the late Edo period.

Moreover, Entsū's Bonreki theory was also accepted by the general astronomers as well as the Buddhist monks. Of these general astronomers, Koide Chōjūrō (1797-1865), was the most influential astronomer. He studied the Bonreki and other astronomical theories under the instruction of Entsū and then became an assistant scholar of the Tsuchimikado family that held the astronomy office of the Imperial household. Koide published many astronomy texts and translated the Dutch texts too. He became famous by indicating the mistake of the official calendar of the Tokugawa government. Observing the solar eclipse in Edo in 1839, Koide found an inconsistency of the calculation of the official calendar. Then he calculated the solar and lunar eclipses of the next year and wrote a small book indicating the inconsistency of the official calendar. Koide's calculation actually better fitted the actual phenomena than that of the astronomy office of the government. Besides this incident, the official calendar of this period that was revised in 1798 sometimes went wrong. For example, the solar eclipse on May 15, 1815 should have been the total solar eclipse according to the official calendar, but it was actually the partial. The members of the Bonreki school insisted upon the supremacy of the Bonreki theory by pointing to this mistake. Since Koide studied modern astronomy in the Tsuchimikado family after learning the Bonreki and became an official scholar of the Imperial household, his case was a little different from the previous agitation of the members of the Bonreki school. But these incidents indicate that the Bonreki theory was recognized as an astronomical theory at least in this period. Learning the Bonreki theory from Entsū was a significant part of Koide's career as an astronomer.

Hiroe Hikozō (1784- ) was a local mathematician of the Owari region. He studied mathematics under the officer of the Owari clan, Kondō Saneyuki, and he was granted the secret teachings of the Kan family style mathematics. He wrote several books on mathematics and had many students as a mathematician before entering the Bonreki

movement. He learned the Bonreki theory from Shingyō. Hiroe calculated the basic astronomical values and the numerical measurements of the components of the Shumisen world that Shingyō succeeded from Entsū and contributed to Shingyō's Bonreki theory. Another eminent astronomer in the Bonreki school, Fujii Saishō, first studied the Bonreki theory by reading Entsū's works and actually learned the Bonreki theory from Kanchū. In order to solve the difference between the theories of Entsū and Kanchū, he entered a newly established public school in Osaka and studied the modern Western science. After studying astronomy, mathematics, physics, and medical science, he became an astronomy officer of the Tokugawa government and studied various types of astronomical theories. Using a new observation technology, he also created his own Bonreki theory.

There is no way to determine the exact number of the general astronomers who studied the Bonreki as an astronomical theory, but there should have been other cases than these representative figures. The activity of these general astronomers in the Bonreki school indicates that the Bonreki theory was not a simple religious fundamentalism and it was studied as a general astronomy as well as a Buddhist teaching at least in this period. While the Bonreki school was established as a sectarian school setting Entsū up as the founder, the Bonreki theory held a plausibility as a general astronomical theory too. Conceptualizing the flat Buddhist worldview in the modern scientific way was not as curious as we feel today.

#### *Acceptance of the Buddhist Sects*

Corresponding to the spread of the Bonreki movement, many Buddhist sects established the astronomy department in their educational institutions and the members of the Bonreki school sometimes lectured the Bonreki theory there. This establishment of the astronomy department was a part of the dharma preservation and anti-Christianity movement in the late Edo period. The issue of the modern scientific worldview was considered a significant topic of the dharma preservation theory in terms of its relation to

Christianity. Kudō Kōkai indicates how soon and eagerly the Bonreki theory was accepted by the Buddhist sects as follows:

As soon as the vinaya master (Entsū) started the Bonreki movement, the Buddhist sects eagerly accepted it. These Buddhist sects also competitively sent students to become member of the Bonreki school and had them master the Bonreki theory. They greatly helped to spread the Bonreki. Following this, though not everyone joined the Bonreki school, there emerged a situation that the person who did not study the Bonreki could not be called a Buddhist at that time. . . . The East Honganji sect already invited one of vinaya master's disciple, Tokuhō, during the Bunka era (1804-1817) and let him officially lecture the Bonreki in its educational institution (*gakuryō*). This is a concrete example to know a part of the condition at that time. <sup>18</sup>

Since Entsū himself still struggled to receive an official admission from the Tendai sect to publish his *Bukkoku rekishōhen* during the Bunka era, if this statement is reliable, Tokuhō's case is one of the earliest official Bonreki lectures at the Buddhist educational institution. According to the spread of the anti-Buddhist movement that required the development of the dharma preservation theory in the later period, the study of the Buddhist astronomical theory, especially as a part of anti-Christian theory, became more popular in the educational and research institutions of the Buddhist sects. Especially among the Pure-Land Buddhist sects, the anti-Christianity theory (*hajagaku*) was systematically studied in their institution and many books were published. The issue of the modern Western scientific worldview was taken up mainly in the institution of the Pure-land Buddhist sects as a part of these movements. The Honganji sect reformed its educational institution (*gakurin*) in 1836 and established the astronomy department in its section of the general learning. Kanchū's disciple, Kōgen was invited to this astronomy department in 1850 and lectured the Bonreki theory. Entsū's disciple, Jōmei, also frequently lectured the Bonreki theory in this institution. According to the spread of the modern astronomy to the general public, the attention to the astronomical theory in this institution was more inspired and the celestial model constructed by a Buddhist monk of the Higo region, Kanrei, was

---

<sup>18</sup> Kudō, "*Shingyō gakutō no hōshoku*," 132-133.

later selected as a correction of the west Honganji's educational institution. This educational institution was again reformed in 1868 and the six new departments were established besides the Pure-Land teaching (*shūjō*). These six departments were the one vehicle teaching (*ichijō*), the three vehicle teaching (*sanjō*), astronomy (*rekigaku*), National learning, Confucianism, and anti-Christianity theory (*hajagaku*). Each department selected the students majoring in the subjects of the departments and these students were granted scholarship from the Honganji sect. It should be noted that astronomy was established as an independent major. Astronomy was considered a significant field of study for the general education of the Buddhist monk in this period. In 1869, Entsū's disciple, Ankei, became a lecturer of this astronomy department and lectured *Risseabidonron*.

In the educational institution of the East Honganji Sects, *Jitsugetsugyōhon* of *Risseabidonron* was frequently lectured in the summer dwelling (*geango*) since 1938. In 1968, the East Honganji Sect established Dharma Preservation School (*gohōjō*) as a branch school of the educational institution. In this school, Chinese learning, Japanese learning, Western learning, and astronomy were established as the majors outside of the Buddhist studies. The lecturers of astronomy in this school were Entsū's disciples, Reiyū and Daitō. In the Kōseiji Sect, the head monk of the Kōseiji, Shōshin, himself was a supporter of the Bonreki movement. He invited one of Kanchū's disciple, Kōgen, in 1848 and learned the Bonreki theory from him. Both the East and West Honganji sects established the astronomy department in their educational institutions in 1868 as a result of their mutual consultation. Shōshin played a significant role in this discussion. In the Bukkōji sect, one of Entsū's closest disciple, Shingyō became the head scholar (*gakutō*) in 1840 and actively propagated the Bonreki theory. In the Tendai sect, to which Entsū belonged for the longest time period, the department of astronomy was not established until the Meiji period. Even though Entsū's *Bukkoku rekishōhen* got an official admission from the Tendai sect in 1815, there was a long struggle to receive this admission. Entsū's



Bonreki theory was not willingly accepted in his home ground, but the Tendai sect too established the astronomy division as an independent field of study in 1869.

It is a significant fact that the Bonreki theory (or the systematic study of the astronomical theory in the Buddhist scriptures) was organizationally accepted by the Buddhist institution and systematically studied as a part of the general knowledge of the Buddhist monk in this period. Entsu's Bonreki movement was not only a general intellectual movement propagated through the public lectures made by the members of the Bonreki school. The Bonreki theory was also studied as a significant field of Buddhist studies in this period. Even though the name of the department was *rekigaku* (astronomy) and it did not directly refer to the Bonreki theory, the lecturers of these astronomy departments were the members of the Bonreki school. In this sense, it is obvious that they learned the Buddhist astronomy, i.e., the Bonreki theory in the name of astronomy. As these lectures frequently featured specific Buddhist scriptures, such as *Risseabidonron*, the subject of these lectures was an interpretation of the Buddhist scriptures that contained the astronomical teachings. However, thinking of the nature of these lectures that were a reaction to the modern scientific worldview and considering the characteristic of the Bonreki theory that systematized the Buddhist astronomical theory in terms of the modern scientific theory, it is sure that the modern scientific theory and its discourse were also introduced in these lectures. They were actually the first connection between the Buddhist teaching and the modern scientific method and the first case of the explanation of the Buddhist teaching in terms of the modern scientific methodology. The focus of these lectures should have been on the protection of the flat world system and the preservation of the Buddhist thought, but the discourse that they used was that of modern science. The Buddhist sects that systematically accepted the Bonreki theory was mainly the Pure-Land Buddhist sects. Thinking of the almost dominant influence of the Pure-Land Buddhist sects on the development of modern Buddhism, it is predictable that the encounter between the

modern scientific discourse and the Buddhist teaching in these Bonreki lectures was also a significant moment in the development of the modern Buddhist discourse.

#### *Activity of the Bonreki Scholar*

As an example who propagated the Bonreki theory both outside and inside of the Buddhist sect, Shingyō's activity is one of the most eminent. While he was the head scholar of the Bukkōji sect, he also established a private school of the Bonreki in his temple, Daigyōji. It is said that the number of students in this school was regularly over two hundred. He lectured the Bonreki theory to the scholars of the Bukkōji sect there and trained many Bonreki scholars inside of the Bukkōji sect. The students who studied in this school actively propagated the Bonreki theory in various regions. In the biography of Shingyō published by the Daigyōji, the names of Obata Tokugi, and Tokujō within the head temple (Bukkōji), and Keikō, Shinen, Enki, Seii, and Shūshō outside the head temple were mentioned as the Bonreki scholars in the Bukkōji sect. Just like Entsū, Shingyō actually made a calendar book of the Bonreki every year and circulated it among the members of the Bonreki school. He also constructed the miniature model of the Shumisen world and always lectured on the Bonreki theory using this model.

While studying the astronomical theory in the Buddhist scriptures, the member of the Bonreki school actually observed the astronomical phenomena for the verification of their theory. It is said that Entsū frequently opened a public astronomical observation including the general astronomer and argued the propriety of the flat world system of the Shumisen world. Shingyō too often made astronomical observations at the top of the mountain behind the Bukkōji when he was in Kyoto. He also gathered both secular and Buddhist members of the Bonreki school. Shingyō describes the observation of the lunar eclipse on the night of the May 14, 1852 as follows:

The foreign astronomical theory says that the moon itself does not emit light and it looks shining because of the reflection of the sun light on the water of the moon. However, examining the process of the lunar eclipse of this year, (it is not clear).

When the moon gradually waned from one tenth or two tenths to five tenths or eight tenths, it seemed to be concealed by the shadow of the earth because it was a dark shadow, but as soon as the moon was covered 99 % to 100%, the shape of the moon became visible. . . . Since the dark red shape of the moon was clearly visible for both the naked eyes and the vision through a telescope, it is obvious that the moon itself emits light. According to the Buddhist teaching, the shape of the moon is (a cylinder shape) with 50 yujun diameter and 150 yujun perimeter and the light of its lower end is the brightest. It (the dark red shape of the moon) was the result of the fact that this light at the bottom of the moon came through the dark air. It is not the shadow of the earth. Both the secular fellows and the Buddhist monks detested the delusion of the foreign teaching and were thankful for being able to believe in Buddhism at the top of the mountain behind the Bukkōji. Expressing our gratitude to Mokusen in Otsu who let us use his telescope, no one of the fifty to sixty clergy or laity men and women who gathered at the top of the mountain that night had any doubt on the Buddhist teaching.<sup>19</sup>

Many members of the Bonreki school frequently made this type of public astronomical observation in various regions and tried to convince people of the verisimilitude of the Bonreki theory.<sup>20</sup>

Just as Entsū and the other disciples frequently did, Shingyō also made a tour for public lectures and propagated the Bonreki theory to the general public. It is said that he was a very good speaker with a loud and clear voice. As one of Shingyō's disciple, Shinshō, said "it was usual for him to lecture at famous temples like the Enryakuji and the Hōryūji, he regularly preached at the head temples of the Buddhist sects." According to Shingyō's biography published by the Daigyōji, he lectured the Bonreki at the Kōsenji in the Yamato region in 1828. In 1837, he made a tour to the Kaga region and lectured the Bonreki in the Eishōji and the Honpukuji. It is said that the both lectures were crowded by many people. In 1844, he made a tour to the Shikoku region. In 1850, Shingyō went to Edo carrying his miniature model of the Shumisen world and lectured the Bonreki theory

---

<sup>19</sup> Kudō, "*Shingyō gakutō no hōshoku*." : 155-156.

<sup>20</sup> As another project to verify the Buddhist teaching in terms of the positivistic experiment, Shingyō also developed the theory of Buddhist medicine. It was to complete the work left unfinished by Entsū. He established agencies throughout the country and sold his medicine. Shingyō named each medicine and described the virtue of the medicine. Since Entsū himself had the idea of the Indian or Buddhist medicine (*bon'i*) and his disciple, Keijitsu already developed this idea, the prescription of the Buddhist medicine was a common practice of the members of the Bonreki school. Many Buddhist temples connected to the Bonreki movement prescribed similar medicine. As an example indicating the fact that the Bonreki movement was not a simple reaction to the modern scientific worldview, but a reconstruction of the various Buddhist teachings in terms of the modern scientific discourse, the development of the Buddhist medicine in Bonreki school is also an interesting topic.

using *Bukkoku rekishōhen* as a text. This tour was for the seventeenth anniversary of Entsū's death. Shingyō stayed in Edo for a half year at that time and propagated the Bonreki theory just as his master did for the memorial of Entsū. Moreover, in 1856, he made a tour to the Shinshū region and Edo with his disciples, Shinshō and Hamamura Junmei. First of all, he was invited by the Zenkōji and lectured there for thirty seven days. After the lecture at the Zenkōji, they were also invited by many temples in the Shinshū region. And then Shingyō was invited by the Tōeizan and they went to Edo. They stayed there for three months.<sup>21</sup> Besides these lecture tours, he made public lectures as a daily activity.

These activities of Shingyō are only a representative case of the activity of the member of the Bonreki school. As I frequently mentioned, Entsū and the other disciples propagated the Bonreki theory through a similar daily activity. One of the unique activities of Shingyō was the building of the stone monuments of Entsū as the founder of the Bonreki. He also made a memorial publication for the anniversaries of Entsū. As the above cited script of the monument clearly shows, Shingyō's admiration of Entsū as the founder of the Bonreki was accompanied by a strong sectarian sensitivity. Entsū's Bonreki theory was accepted by many followers and his activity was developed into the Bonreki movement as a group activity of many disciples like Shingyō and their followers.

### **Development and Separation: *Dōshiji* and *Ishiji***

#### *Emergence of the Same Season Group: Dōshijiha*

Even though the Bonreki movement was developed by Entsū's followers, the Bonreki school was separated into the two parties after Entsū's death. The main reason of the separation was the dispute on the interpretation of Entsū's Bonreki theory. Over a decade after Entsū's death, one of Entsū's main disciples, Kanchū expressed a doubt about some theories of Entsū and revised them. The main issues that he raised were about the seasonal

---

<sup>21</sup> Kudō, "*Shingyō gakutō no hāshoku*": 163-166.

change on the four islands of the Shumisen world and the theory of the night country (*yakoku*). Kanchū criticized Entsū's theory on these issues and revised Entsū's theory. Since these two issues were closely related to the basic theory of Entsū and his astronomical calculation, Kanchū's new theory produced a serious friction in the Bonreki school. In 1843, Kanchū published *Shumikai shijiidōben* (Discussion on the exchange of the four seasons in the Shumisen world) and explained his critical concern as follows:

The late master, Fumon, studied the Buddhist scriptures and the learnings outside of Buddhism, revealed the world system in the Buddhist thought, and calculated the astronomical system in the Shumisen world. He also wrote the works, such as *Bukkoku rekishōhen* and *Jikken shumikai setsu*, and actively debated on it. They were really sincerely works. However, there should be a mistake concerning his theory that the four islands of the Shumisen world have a day and night at a different time and exchange the season in order. It is no problem that each island has a day and night at a different time, but it is not correct that the four islands exchange the season in order. . . . The dear monk constructed the miniature model of the Shumisen world and indicated that the four islands exchange their season. And he also constructed a celestial model and explained the possibility of that the four islands have the same season at the same time in terms of his theory. However, it could not but be a distortion. When I speak like this, it might sound like criticizing the late master and establishing my own theory. But this is just to complement the weak points of the late master's theory and therefore, it is not opposing him. Because the intention of the late master was to reveal the world system of Buddhist teaching and verify the astronomical system of the Shumisen world. Even if we do not criticize the master's theory, neglecting the inconsistency with the Buddhist teaching is to oppose the late master's intention. Even if it oppose the theory of late master, proposing the theory corresponding to the Buddhist teaching is to follow the intention of the late master. . . . Of the theories in *Bukkoku rekishōhen*, the theory of the night country is a distortional theory and it cannot but include an inconsistency. By trying to solve the problem in the Buddhist teaching, he actually made it worse. The dear monk (Entsū) had another idea in his old age and wanted to revise the theory of the night country. But he got older and older day by day and just mentioned the general plan to his students. He had no chance to revise it and passed away. The general theory of the night country is just like in *Bukkoku rekishōhen*. I did not refer to it line by line. I just complemented its weak points by adding my opinion to the late master's theory.<sup>22</sup>

According to Entsū's Bonreki theory, each one of the four major islands has a different season and exchanges the season following the movement of the orbit of the sun. One of the main reasons why Entsū introduced this idea was to explain the existence of the night country that had only daytime in summer and only night in winter. In order to explain the

---

<sup>22</sup> Kanchū, *Shumikai shijiidōben* (1843), 18b-19a.

existence of this region, Entsū introduced an oblique movement into the orbit of the sun. If the sun pass the high point of the north island and the low point of the south island in the summer of the south island and pass the low point of the north island and the high point of the south island in the winter of the south island, the all-day-long daytime and night in the summer and winter of the night country can be explained by the reversed trapezium shape of the Shumisen and the landscape of the south island that has a high mountain at the south region of the night country (this is the point of view from the south island).<sup>23</sup> Therefore, the summer of the south island has to be the winter of the north island to explain the existence of the night country and the season of the other two islands have to be spring or autumn. The theoretical explanation of the existence of the night country was a main subject of Entsū's main work, *Bukkoku rekishōhen*, and the exchange of the season of the four islands, which was closely related to the theory of the night country, was also a basic theory of Entsū's Bonreki theory. Kanchū revised this theory by criticizing the fact that Entsū introduced an oblique movement into the explanation of the orbit of the sun. According to Kanchū, this theory does not correspond to the astronomical theory in the Buddhist scripture and causes an inconsistency with the actual astronomical survey. He explain this issue as follows:

There is no reason for the exchange of the season. It (Entsū's theory) says that the points of the sunrise and sunset are on the middle path (*chūro*) on the days of the winter and summer solstices and these points are located at the same height. But this is inconsistent with the following sentences (of the Buddhist scripture): "When the sun is on the inner path (*nairo*), the daytime is longest and it is 18 mukyūta, and the night is the shortest and it is 12 mukyūta (the one day consists of 30 mukyūta in this case). When the sun is on the outer path (*gairo*), the night is the longest and it is 18 mukyūta, and the daytime is the shortest and it is 12 mukyūta. When the sun is on the middle path (*chūro*), the length of the day and night is the same and it is 15 mukyūta each." This (Entsū's theory) is also inconsistent with today's actual mass (*genryō*).

If the four islands have the same season at the same time, (the movement of the sun) would be like this picture (Figure 83). The sun of the day of the summer solstice is on the inner path. The sun comes out from the point, *kō*, reaches to the high noon at the point of *kū*, and sets at the point of *otsu*. The points of the sunrise

---

<sup>23</sup> For the detailed explanation of this theory, see Chapter 2.

and sunset are high, and therefore the sun comes out from the direction of *tora* (east-northeast) and sets at the direction of *inu* (west-northwest). So the daytime is long and the night is short. On the days of the spring and autumnal equinoxes, the sun is on the middle path. The sun comes from the point of *hei*, reaches to the high noon at the point of *fū*, and sets at the point of *chō*. There is no difference of the height between the points of the sunrise and sunset, and therefore, the sun comes from the direction of *usei* (east) and sets at the direction of *yūsei* (west). So the length of the day and night is the same. The sun of the day of the winter solstice is on the outer path. The sun comes out from the point of *bo*, reaches to the high noon at the point of *ka*, and sets at the point of *ki*. The points of the sunrise and sunset are low, and therefore, the sun comes out from the direction of *tatsu* (east-northeast) and sets at the direction of *saru* (west-northwest). So the daytime is short and the night is long.<sup>24</sup>

According to Entsu's theory of the seasonal exchange, the location and height of the sunrise and sunset on the days of the winter and summer solstices are the same. However, this is inconsistent with the calculation of the length of the daytime and nighttime. Because if the shape of the sun's orbit is a circle, Entsu's theory that presupposes the same points of the sunrise and sunset on the days of the summer and winter solstices cannot explain the different length of the day and night. In his *Bukkoku rekishōhen*, Entsu explains the mechanism of the exchange of the season on the four islands using a pictorial explanation (Figure 63). In this figure, the mechanism of the seasonal exchange is well explained, but the length of the daytime on the day of summer solstice became shorter than the daytime of the day of the winter solstice. This was the point of Kanchū's criticism of Entsu's theory. Entsu tried to explain this inconsistency by showing a similar model of the sun's movement to Kanchū's model (Figure 84). Kanchū, however, considered that Entsu's explanation was logically weak and suggested to discard this theory that was invented to explain the existence of the night country together with the theory of night country itself. Because, without the theory of the night country, there is no need to suppose the different seasonal exchange on the four islands.

According to this critical concern, Kanchū newly calculated the movement of the sun and the moon and revised Entsu's calendar system. He revised Entsu's Buddhist calendar,

---

<sup>24</sup> Kanchū, *Shumikai shijūidōben* 1843, 1b-2a.

*Shumikaireki* (the calendar of the Shumisen world), and published his own version of the Buddhist calendar, *Kaitei shumikaireki* (the revised calendar of the Shumisen world). Since Kanchū was well known as a specialist of mathematics among the Bonreki school and he was one of the main disciples of Entsū, his new Bonreki theory had a great impact on the Bonreki movement. The members of the Bonreki school who supported Kanchū's theory and denied the seasonal difference of the four islands were called *Dōshijiha* (the same season group). They actively propagated the new theory among the Bonreki school and became the main stream of the Bonreki movement. Kanchū's criticism and revision of Entsū's theory was an attempt to seek more precise and logical theory in terms of the astronomical observation and calculation. Even though Kanchū frequently refers to the Buddhist scriptures, his criteria of evaluation was a correspondence between the theory and the natural phenomena. In this sense, Kanchū's new theory was a development of the Bonreki theory as a scientific theory. For Kanchū, Entsū's intention, that is, to reveal the world system of the Shumisen world and to verify the astronomical system of the Shumisen world as a logically consistent theory was far more significant than Entsū's theory itself. In order to improve the degree of verification, therefore, there is no problem to revise Entsū's theory. However, this revision of Entsū's theory was not acceptable for some members of the Bonreki school who adhered to Entsū as the founder, and the Bonreki school was split into the two groups because of the issue of the seasonal change.

#### *Different Season Group: Ishijiha*

The leader of another group that opposed to Kanchū's theory was Shingyō. Of the disciples of Entsū, Shingyō especially had a strong sectarian sensitivity and admired Entsū as the founder. I already mentioned that Shingyō built the stone monuments of Entsū and made many activities for the memorial of Entsū as the founder of the Bonreki. Therefore, it was not forgivable for Shingyō that Kanchū criticized the master's theory and revised it. In 1846, Shingyō published *Daikanki yujunbinran* and criticized Kanchū as follows:



In the letter from Kanchū monk to Daigyōji on February 11th of this year, he disrespected the master's theory that was called the great and epoch-making work and unthoughtfully criticized it as false. . . To whom does he talk unreservedly? Kanchū insists that all basic astronomical theories of the Bonreki relating to the orbits of the sun and moon, the solar and lunar eclipses, the dark stars, the five planets, and so on will be completely inconsistent, as long as we follow the theory of the different seasonal exchange on the four islands. If so, what did the precept master (Entsū) do in his hard works that lasted for several decades. Except for the theories that Kanchū now takes up and criticizes as false, there is no theory that can be called a calendar system or an astronomical theory (in Entsū's Bonreki theory). While he was a disciple (of Entsū), Kanchū criticizes his astronomical master by saying that his master's basic astronomical theories are completely inaccurate. This must be convertible to the five deadly sins (*gogyaku no tsumi*) that kills his own master. The precept master used to lecture the Bonreki at Mt. Kōya and Mt. Hiei by using the blueprint of the miniature model of the Shumisen world. But do you insist that he propagated a completely inaccurate theory as you suggested and deceived people in the head quarters of both exoteric and esoteric Buddhism?<sup>25</sup>

Shingyō's criticism of Kanchū's new theory was sustained by his sectarian sensitivity that admired Entsū as the founder and master. For Shingyō, revising the master's theory was to oppose the master himself and it was completely unacceptable. In Shingyō's statements, there is no sense of the division between Entsū's theory and intention that Kanchū insisted upon. The master's words are literally correct and always perfect for Shingyō. It seems to represent the fact that while the Bonreki was developed as a scientific theory, there was another tendency that regarded Entsū's theory as an absolute discipline. Shingyō's opposition to Kanchū's theory represents this phase of the Bonreki movement. It is no wonder that the admiration of the master's statement as an absolute theory leads to a scripturalist attitude. Shingyō criticizes Kanchū's theory as follows:

The precept master never mentioned any word about the simultaneous seasonal change on the four islands in his life time. In the letter from Kanchū, however, he said with his own writing that the late master monk did not clearly mention whether the four islands exchange the four seasons or the four island have the same season at the same time in *Shumisengimeijo* too. In this way, he explained the precept master's theory as a vague theory. However, the precept master published his own Japanese interpretation for both *mei* and *jo*, and it is completely clear that he indicated the exchange of the four seasons on the four islands of the four directions. It is clearly written. How crazy it is that Kanchū said in his letter that Entsū did not

---

<sup>25</sup> Shingyō, *Daikanki yujunbinran* (1846), 3a-3b.

clearly select the exchange of season nor the same season, while he read Entsū's work that includes such a clear statement!<sup>26</sup>

As we can see in this sentence, Shingyō's basic point of argument was whether Entsū actually supported Kanchū's new theory or not. For Shingyō, the theory that can be found in the master's work is the proper theory and the distortion of the master's theory is unacceptable. Together with the publication of *Daikanki yujunbinran*, Shingyō published *Shumikai shijiidōben benseki* (criticism of *Shumikai shijiidōben*) and he criticized Kanchū's *Shumikai shijiidōben* line by line. Shingyō's argument in this text was also basically scripturalistic. While Kanchū's revision of Entsū's Bonreki theory represents one phase of the Bonreki movement as a scientific thought movement, Shingyō's scripturalistic protection of the founder's theory represents another phase of the Bonreki movement as a sectarian school. Since Shingyō was the founder of the Daigyōji and had a significant status in the Bukkōji sect, the members of the Bonreki school relating to the Bukkōji sect supported Shingyō and organized another group opposing Kanchū's group. Shingyō's group was called *Ishijiha* (the different season group) and the Bonreki school was divided into the two major groups.

#### *Bonreki and Scientific Discourse*

The difference in the two groups was based on the difference in their perspective. Kanchū's theory was based on a scientific perspective that seeks as much logical explanation as possible, but Shingyō's theory was to literally preserve the master's theory from a sectarian perspective. However, Shingyō's criticism of Kanchū was not solely based on a scripturalistic criticism. At the end of his *Daikankiyujunbinran*, Shingyō attaches the diagram of the seasonal change and the detailed calculation of astronomical phenomena that support the different season theory. Since Shingyō did not have enough mathematical knowledge to calculate the numerical measures that he learned from Entsū, he

---

<sup>26</sup> Shingyō, *Daikanki yujunbinran*, 3b-4a.

asked a famous mathematician in his region, Hiroe Hikozō, to calculate these numerical measures and theorize the astronomical theory based on the different season theory.<sup>27</sup> A logical consistency as an astronomical explanation was after all the basis of the discourse of Bonreki, and therefore, while Shingyō's group was still active, Kanchū's group became more and more a dominant power in the Bonreki school. One of the followers of Kanchū, Fukō Yūman, explains this situation in his *Honchō Bonreki shishikeifu* (the genealogy of the Bonreki in Japan) as follows:

The astronomical theory founded by Fumon Entsū was separated into the two parties. One was called *dōshijihā* (the same season group) and another was called *ishijihā* (the different season group). Kanchū led the same season group and Donzō (Shingyō) managed the different season group. These two parties criticize and blame one another. However, since Kanchū was good at mathematics, the number of his followers increased day by day and his group became a dominant power. Donzō's group was not familiar with the mathematical principle. Therefore, Donzō's group could not be expanded and it almost disappeared.<sup>28</sup>

Since Fukō Yūman was a member of the same season group, there might be an exaggeration in his comment on the power struggle between the two groups. However, at least it is certain that mathematical reliability was a significant factor in the evaluation of these theories. If Kanchū's group really became a dominant power in the Bonreki school, it should be because of the logical reliability of Kanchū's theory.

The conversion of the one of Shingyō's disciples, Fujita Yori-hisa, provides us with an example to think of this power shift in the Bonreki movement. Fujita first became a disciple of Shingyō and supported the different season theory, but converted to the same season theory. He published *Dansenkotsugengi zusetsumo* as a supplement of Kanchū's *Shumikai shijidōben*, and explained his conversion as follows:

I read *Bukkoku rekishōhen* and *Jikken shumikaisetsu*, and believed in (Entsū's) explanation of the system of the Shumisen world, revolution of the sun and moon,

---

<sup>27</sup>Hiroe expanded this theory and published the calculation of the seasonal change entitled *Jikōhyō* (the diagram of the seasonal change) later.

<sup>28</sup>Fukō, *Honchō Bonreki shishi keifu*, 2a.

and system of the movement of the sun and the moon. However, I have had doubt about the movement of the dark stars (*rakei*) and the theory of the night country for a long time from the calculation of materials relating to these phenomena. It was said that the meditation master, Kanchū Zenki, used to study under the great monk (*daiwajō*: Entsū) and mastered the secret of his theory. He calculated the movement of the sun and the moon and advocated the theory of the same season on the four islands. However, the scholars often support both of the same season and the different season theories, and there was no integrated opinion. One day, the meditation master (Kanchū) said that "you already studied the basic theory of the Bonreki. Do you take the same season theory or the different season theory?" The same season theory clearly corresponds to the theory of the great monk (Entsū), but the different season theory is inconsistent with the astronomical calculation. I could not decide by myself and asked the meditation master. He showed me his *Shumikai shijiidōben*. By reading it again and again, my doubt had completely vanished and I believed in the excellent idea of the meditation master. . . I suppose that even nowadays many scholars cannot choose either the same season or the different season just as I used to do.<sup>29</sup>

Fujita Yori-hisa was originally the disciple of Shingyō and then studied the astronomical calculation under the instruction of Kanchū through the introduction of Shingyō.<sup>30</sup> As he had a doubt about the different season theory from the calculation of the materials and converted to Kanchū's group, seeking a logical plausibility was a basic discourse of the Bonreki movement. As Kanchū insisted in his theory, Entsū's intention that was to establish a scientifically verifiable Buddhist astronomy was more significant for the Bonreki scholars than Entsū's theory that might include some logical inconsistency. Even in the case of Shingyō who reacted to the new theory from a sectarian perspective, showing the logical consistency of his theory was a required element of argument. The Bonreki was basically developed as a scientific discourse.

---

<sup>29</sup> Fujita Yori-hisa, *Dansenkotsugengi zusetzu*, (1843) 1a-1b.

<sup>30</sup> Watanabe Toshio (1986) regards Hiroe Hiko-zō as the same person as Fujita Yori-hisa. However, *Daikanki yujyunbinran* was written three years later than Kanchū's *Shumikai shijiidōben* and Fujita's *Dansenkotsugengi zusetzu*. If Hiroe Nagasada and Fujita Raio was the same person, we cannot understand Shingyō's admiration of Hiroe's mathematical knowledge in *Daikanki yujyunbinran* and the fact that Hiroe's astronomical calculation was attached to *Daikanki yujyunbinran*. Moreover, in his history of the Bonreki movement (1883), Fukō Yūman explains Hiroe' Hiko-zō as the person who saved the different season school with his mathematical knowledge. According to Fukō, Hiroe also published the Buddhist calendar based on the different season theory. Thinking of these issues, it is hard to identify Hiroe Hiko-zō and Fujita Yori-hisa. Here I considered Hiroe and Fujita are different persons.

### *New Bonreki Theories*

Following this perspective, there emerged the varieties of new Bonreki theories even after Kanchū's revision of Entsū's theory. In Kanchū's group, for example, Fujii Saishō revised both theories of Kanchū and Entsū and developed a new theory. As I mentioned before, Fujii studied the modern Western science at the newly established public school and became an astronomy officer of the Tokugawa government after the study of the Bonreki in his early years. Applying the latest scientific knowledge and using the data from his own astronomical survey, he tried to integrate Kanchū's theory and Entsū's theory in his new theory. According to Fujii, Entsū's strategy was to distinguish the expanded phenomena (*tenshō*) grasped by the divine vision with the reduced phenomena (*shukushō*) perceived by the human vision, and Entsū's project was to calculate the astronomical phenomena in terms of the reduced phenomena that is observable by the human vision. However, Entsū never mentioned the relation between the expanded phenomena and the reduced phenomena, and therefore his theory was sometimes inconsistent with the actual astronomical calculation. Even though Kanchū established the same season theory and adjusted Entsū's theory as corresponding to the actual astronomical phenomena, he somehow distorted the statement of the Buddhist scriptures for the construction of his theory. In order to solve these problems, Fujii explained the mechanism of the visual distortion that happens between the world of divine vision and the world of human vision. The difference between Entsū's and Kanchū's theories was based on the fact that Entsū could not explain the reason why the divine vision is different from the human vision.

Fujii solved this issue by presupposing five divisions of the wind disc that holds the Shumisen world and the heavenly bodies. According to Fujii, these five divisions of the wind disc have a different thickness and a different pattern of movement. These movement of the wind disc change the direction of the light and that is the reason why the human vision cannot see the real phenomena (*jisshō*), but only see the delusive phenomena (*kashō*). He analyzed the nature of the light and the form of the wind disc and explained the

mechanism by which the real phenomena was perceived as a delusive phenomena through the human vision. Since the astronomical theory in the Buddhist scripture is based on the observation of the real phenomena through the divine vision, there is an inconsistency with the astronomical observation through the human vision. By theoretically explaining the reason why there is this inconsistency, Fujii tried to solve the problem of Entsū's theory that was derived from Entsū's careless unification of the data from the Buddhist scriptures and the data from the astronomical survey. In Kanchū's group, Sada Kaiseki also established his own theory and tried to preserve the Buddhist worldview against the modern scientific worldview.

In the group supporting the different season theory too, there emerged some new theories. For example, one of Entsū's disciple, Ankei, developed Entsū's theory and published *Gohōshinron* and *Shumikaigi*. Ankei's theory that explained the inconsistency of the different season theory by introducing the new role of the wind disc in the system of the Shumisen world was similar to Fujii's theory. The wind disc of the Shumisen world changes its thickness and location according to the seasonal change. According to Ankei, this change causes a distortion of the human vision, and therefore, there is an inconsistency between the different season theory captured by the divine vision and the same season theory perceived by the human vision. Ankei distinguishes the world systems perceived by the divine vision and the human vision as follows:

The Buddha Shakamuni perceived past, present, and future by his divine vision and almighty power and revealed the figure of the material world (*kikai*) just as it is. This figure of the world is called the Shumisen world (*shumikai*). However, the bound of the world is extremely far away. Only the six kinds of heavenly beings, such as *shitennō* and *tōriten*, can see the whole picture of the one Shumisen world within the round border mountain range made of iron by using their divine power. The human beings in this world have only a humble power and it is impossible for them even to know the whole figure of the one of the four major islands. They (the human beings) can only see a distorted figure of the far remote land and heaven through the human vision that is supported by merciful expedient power of the heavenly bodies. This world of the human vision is called the world of reduced phenomena (*shukushōkai*). Therefore, it is impossible to know the whole figure of the world without dealing with the Shumisen world, and it is impossible to produce

a theory corresponding to the actual mass (*genryō*) without referring to the world of reduced phenomena.<sup>31</sup>

Ankei developed Entsū's distinction between the divine vision and the human vision and turned this idea into a distinction between the two different visions of the same Shumisen world.<sup>32</sup> Since Entsū also constructed *Shukushōgi* (the model of the world of reduced phenomena or the celestial model), the idea of the distinction between the Shumisen world and the world of reduced phenomena can be found in the theory of Entsū. Developing Entsū's basic idea, Ankei revealed the mechanism that caused the difference of the human and the divine visions (the theory of the wind disc) and conceptualized the divine vision as a fixed view point opposing the view point of the human vision.

However, Ankei's theory still held an idea of the comprehensives and transcendence of the divine vision that was supposed to be derived from Entsū's distinction between the religious wisdom and the scientific knowledge. For example, Ankei criticizes the Western astronomy as follows:

There is no world of reduced phenomena except for the Shumisen world . When the Shumisen world is reduced by the human vision, it becomes the world of reduced phenomena, but when it is expanded by the divine vision, it becomes the Shumisen world. . . . Considering this (the figure of the Shumisen world) in terms of the Buddhist theory, both theories of the spherical earth and the flat world are only a theory of guess that infers the figure of the world through the human vision. All of these figures of the world are an illusory world perceived through the ordinary vision. Therefore, there is no absolute standard in their conceptualization of the world. . . . There are more than ten different theories in the new Western theory. If they stick to their own theories and compete with each other, there will be no reason for people to follow them. Therefore, they should first understand the fact that the figure of the world inferred by a simple and ordinary vision is only an illusory world of reduced phenomena and never criticize the true theory of the great sage.<sup>33</sup>

Ankei's idea of the Shumisen world was still a transcendent system of the world beyond the realm of the human conception.

---

<sup>31</sup> Ankei, *Shumikaigi* (1858), 28b-29a.

<sup>32</sup> On Entsū's distinction between the human vision and the divine vision, see Chapter 2.

<sup>33</sup> Ankei, *Shumikaigi* (1858) 41b-42b.

### *Bonreki as Buddhist Astronomy*

In Fujii's theory that developed this idea in terms of the modern science, however, the existence of the Shumisen world perceived by the divine vision is also explained in terms of his theory of the mechanical system of the world. In his theory, a scientific explanation of the system of the Shumisen world reached to an extreme case. By theorizing the relation between the world of the divine vision and the world of the human vision using a scientific explanation, Fujii turns the relation between the Shumisen world and the world of reduced phenomena into the relation between the universe and the earth. Fujii located the view point of the divine vision at the same level as that of the human vision and explained the mechanism of the exchange between two visions by using the modern scientific theory (for example, the analysis of a reflected ray) and mathematical calculation. In his theory, therefore, the view point of the Buddha's divine vision became a fixed view point to look at the Shumisen world from the outside. The Buddha's divine vision is now turned into a theoretical vision, just as looking at the solar system from the center of the galactic system. Fujii explains his strategy in his *Tengakusakurei* (recommendation of the study of astronomy) as follows:

The Western science verifies its theory using perceivable things and establishes the theory of the spherical earth. The Buddhists just preserve the words in the Buddhist scripture and have no intention to search for a positive proof. Therefore, they (the Western astronomy) became more and more subtle, and we (the Buddhist theory) turned into an empty theory. And finally, we let people believe in the theory of the spherical earth. If the shape of the earth is spherical, how can we explain the location of the Shumisen and the realm of the heavenly beings. It should be said that today is a turning point that determines the future of Buddhism. The Buddhist scholars of the former generation worried about it and frequently discussed this issue, but they could not establish it (the theoretical explanation of the world system) because they were not good at mathematics and physics (*sūri nigaku*) unfortunately. It was, therefore, much less possible to refute it (the Western astronomy). There is no number (*sū*) in the world that did not come from a principle (*ri*), and there is no principle that cannot be represented by a number. Without principle, there could be no number, and no principle could appear without number. The principle is a general law of the world and it is common to all countries in the world. It can never be changed and it commonly exists within all things. The revolution of the sun, the moon, and the stars are all sustained by the



principle of the nature, and therefore, there is nothing that cannot be fully explicated by a mathematical explanation.<sup>3-4</sup>

"Principle (*ri*)" and "number (*su*)" in this paragraph can be converted to "physics" and "mathematics." Fujii criticized the fundamentalistic reaction of Buddhist to the modern scientific worldview and tried to explain the Shumisen worldview in the context of the modern science. This perspective was basically shared by Entsu and his followers too. Fujii's search for the scientific verification of the Shumisen worldview was an expansion of Entsu's basic project. However, the more they attach importance to the logical consistency and mathematical calculation, the more clear the inability to hold the flat worldview in terms of the modern scientific discourse becomes. Pursuing a more logical consistency in terms of the modern science cannot but reach the point of accepting the modern scientific worldview. Fujii actually became the last generation of the Bonreki movement and the Bonreki soon became a forgotten Buddhist thought.

Even though there was a sectarian response of Shingyō, the Bonreki theory was basically developed as a revision of the scientific theory. Using Kanchū's concept, Entsu's intention to seek a logically consistent explanation of the Buddhist astronomy was more significant for the main line of the Bonreki school than Entsu's theory itself. Actually Kanchū's followers who supported the same season theory formed a dominant group in the Bonreki school and the Bonreki theory was frequently revised in the name of the theoretical improvement. The same scientific discourse was actually shared by the Bonreki scholars who supported the different season theory. Ankei tried to logically explain the difference between Entsu's and Kanchū's theories, and Shingyō also tried to preserve Entsu's theory by asking a mathematician, Hiroe Hikozyō, to calculate the astronomical phenomena in terms of Entsu's theory, while he had a sectarian notion to preserve the master's theory literally. The dominant discourse that covered the whole Bonreki movement was, therefore, a scientific discourse. If the sectarian discourse that adhered to Entsu's theory as a religious

---

<sup>3-4</sup> Fujii Saishō, *Tengaku sakurei* (1883).

authority were dominant in the Bonreki school, the Bonreki movement could have been a more long lasting intellectual movement. Actually the sectarian movement around Shingyō's temple, the Daigyōji, lasted longer than the Bonreki movement itself.

### **Dissolution of the Bonreki Movement**

In the social condition of the late Tokugawa and the early Meiji period in which the anti-Buddhist movement became highly active, the Shumisen worldview became one of the biggest topics of the dharma preservation theory. The establishment of the astronomy department in the sectarian school of the major Buddhist sects was a part of the development of the dharma preservation theory and the anti-Christianity theory, and the Bonreki theory was mainly accepted by the Buddhist monks and laymen as a significant part of dharma preservation theory. Since the modern scientific worldview was often confused with the Christian worldview (the Western scientific worldview was first introduced by Jesuit priests in the sixteenth century), the Bonreki theory was considered to be useful for both the dharma preservation theory and the anti-Christianity theory. But following the popularization of the modern scientific worldview as a general knowledge that is symbolized by the official adoption of the solar calendar system in 1872 and the increasing awareness of the difference between Christianity and the modern Western science, the discussion about the existence of the Shumisen world suddenly disappeared. According to *Bukkyōgaku kankei zasshironbun bunruimokuroku* (Classified catalogue of the periodicals and articles on Buddhist studies, Ryūkoku University), the number of articles that discussed the substantial existence of the Buddhist worldview (including the Pure-Land) decreased in the late Meiji period and there is no article on this subject after the Taishō period.

Shimaji Mokurai, a famous modern Buddhist who initiated the movement of the separation between religion and state (*seikyōbunri undō*), left the following statement on the Shumisen worldview that represents the historical condition of this period:

This is a statement that requests the end of publishing any article discussing the existence of the Shumisen world. . . . On the precious periodical, *Meikyōshinshi*, that deals with general Buddhism, they discuss the horizontal orbits of the sun and the moon and the empty theory of the existence of the Shumisen world that have no benefit on the dharma and doctrine. They blame each other and dishonor the reputation of Buddhist monk as a peaceful figure. . . . Of course, I am deeply impressed by their sincerity to preserve dharma, but the foundation of Buddhism is unfortunately not on this issue. Disputing on this issue is not good for Buddhism. On the contrary, it is to disgrace the shining authority of Buddhism.

Shimaji also criticizes the Shumisen worldview as follows:

The theory of the Shumisen is the Indian myth that was fabricated by the Brahmin believers (*baramon kyōto*) before the birth of Buddha Śākyamuni. In the remote past, Rōsen already mentioned this issue. As a recent example, Tominaga Nakamoto said in his *Shutsujōgogo* that "This is the ancient theory of India. Shakamuni explained his teaching based on it. The true intention of this is . . ." I should say that he had a proper knowledge and perspective. It (the Shumisen worldview) is not only from the Indian myth. It was introduced into Greece. In that country (Greece) too, Mt. Sumeru was considered the center of the world and it was said that the twelve gods surround this mountain and protect it. It shows how old this idea is. However, no one nowadays advocates this worldview in India, Greece, and so forth. It is because this is an old, imaginary, and fictional theory. How could it survive in Today's world in which people explain the natural phenomena and the movement of the sun and the moon based on the actual survey and the precise calculation. . . . The explanation of the Shumisen world as a manifestation of the transmigration in the six paths is the theory for explaining the condition of the sentient beings. If this illusory condition actually exists, it can no longer be an illusory condition. It should be called a real condition. It is already defined as an illusory condition (in the Buddhist scriptures). It is clear that this is not a real condition. . . . Why do we have to discuss the existence of the cause and effect (*inga*) by discussing the existence of this mountain.<sup>35</sup>

Shimaji's reaction to the Shumisen theory (*shumisen setsu*)<sup>36</sup> was actually the basic perspective of the modern Buddhism that is usually considered a new Buddhist discourse that came out after the decline of the fundamentalistic dharma preservation theory. The Bonreki theory was normally considered a basic principle of the Shumisen theory and

---

<sup>35</sup> Futaba Kenkō and Fukushima Hiroataka, eds., *Shimaji Mokurrai zenshū*, vol. 3 (1975), 297-301.

<sup>36</sup> The fundamentalistic theory that tried to protect the Shumisen worldview against the modern scientific worldview in the late Tokugawa and the early Meiji was often called *Shumisensetsu* (the Shumisen theory) just as Shimaji used in his criticism of the Shumisen theory. Just like *Shumikai* (the Shumisen world), this is not an authorized Buddhist word that can be found in the Buddhist encyclopedia. In this dissertation, however, I would like to use *Shumisensetsu* (the Shumisen theory) to indicate the dharma preservation theory focusing on the substantial existence of the Shumisen world.

therefore, the decline of this fundamentalistic dharma preservation theory was regarded as corresponding to the disappearance of the Bonreki movement. Looking at this historical process focusing on the similarity between the Bonreki theory and the Shumisen theory, the relation between the Bonreki movement and the modern Buddhism cannot but be considered oppositional just as the fundamentalistic dharma preservation theory was opposed to the modern Buddhism.

However, at the level of their discourse there is a significant difference between the Shumisen theory and the Bonreki theory. For example, a representative advocate of the dharma preservation theory, Fukuda Gyōkai, published *Shumisen ryakusetsu* (Outline of the Shumisen worldview) in 1878 and insisted to preserve the Shumisen worldview just as it is written in the Buddhist scriptures. The subject of Fukuda's work, that is, the preservation of the Buddhist worldview, was actually common to the works of Bonreki scholars too. On this point, the Shumisen theory and the Bonreki theory share the same motivational issue. However, at the level of Fukuda's discourse that he uses in his work, Fukuda's Shumisen theory was not the same as the Bonreki theory of Entsū and his followers. The main project of Fukuda's work was to literally introduce the Shumisen worldview depicted in the Buddhist scriptures. In his work, therefore, there is no attempt to show the correspondence between the astronomical observation and the Shumisen worldview and no plan to construct the Buddhist astronomy in terms of the modern scientific discourse that were the main project of Entsū's and his follower's works. Fukuda introduces the outline of his *Shumisen ryakusetsu* as follows:

1. To show the proof of the Buddhist scriptures.
2. Two types of witnesses of the Shumisen world: True vision through a divine faculty and True vision through a spiritual induction
3. To show the size of the Shumisen world: the size of Mt. Sumeru, the seven golden mountain range, the iron mountain range, the different names.
4. To show the fact that one who explains the heavenly realm (*tenkai*) cannot but refer to the Shumisen.
5. To show the fact that refusing the explanation of the Shumisen world is to destroy the principle of causality.
6. To show the fact that Buddha did not teach the Shumisen worldview as a metaphor.

7. To show the fact that Buddha did not explain the Shumisen world by copying the Brahmin teaching.
8. To show the fact that Buddha did not teach the Shumisen worldview for the land survey and the astronomical calculation.
9. To show the fact that Buddha taught the Shumisen worldview especially to let people reach to the meditational acquirement of the principle of causality and the four bases of mindfulness (*shinenjo*).<sup>37</sup>

Comparing this outline with the outline of Entsū's *Bukkoku rekishōhen* (Appendix 1), their discursive difference is obvious. In Fukuda's *Shumikai ryakusetsu*, there is only a fundamentalistic claim that is similar to the Buddhist reaction to the Western astronomy before Entsū's Bonreki. Fukuda evaluated Entsū's Bonreki as follows:

The country has established astronomical theory based on the spherical earth theory. Previously, Fumon introduced the model of the Shumisen world (*shumisengi*). People learned it and spread the Buddhist astronomical theory. Recently, the ministry of doctrine (*kyōbushō*) discussed this issue and prohibited teaching the model of the Shumisen world. Because it opposes the official theory and may cause confusion in people's minds. It never meant to prohibit teaching the Shumisen worldview. . . . However, some people might misinterpret and say that "the Bonreki was prohibited and therefore, it is meaningless to learn it" or "the Shumisen worldview is a reactionary theory and therefore, it should never be preached." Both of them are from the fact that we did not clarify the meaning of these theories. That is why I published this book. The Bonreki should be learned because it increases the knowledge of people, and the Shumisen worldview should be taught because it expands the principle of causality.<sup>38</sup>

Fukuda's point of argument was on the promotion of the significance of the Shumisen theory as a fundamental teaching of Buddhism and he clearly had a different approach to the explanation of the Shumisen worldview from that of the Bonreki scholars. Fukuda basically considered the astronomical theory in the Buddhist scriptures a supplemental teaching and emphasized a religious significance of the Shumisen worldview as an explanation of the fundamental teaching of Buddhism, such as the principle of causality. In Fukuda's Shumisen theory, therefore, the establishment of the Buddhist astronomy that was a basic project of the Bonreki movement no longer had the same significance as that for the Bonreki scholars.

---

<sup>37</sup> Fukuda Gyōkai, *Shumisen ryakusetsu* (1878), Contents.

<sup>38</sup> *Ibid.*, 18b-19a.

The dharma preservation theory was surely a significant theme of the works of Entsū and his followers. In the case of Entsū's works too, while Entsū mainly discussed the astronomical theory in some works like *Bukkoku rekishōhen* and *Shumisengi mei narabini jo wakai*, his point of argument became more like a dharma preservation theory in the other works, such as *Jikken shumikaisetsu* and *Bonrekisakushin*. Especially in his *Bonrekisakushin*, Entsū emphasized a significance of learning the Bonreki theory in terms of the dharma preservation theory. Moreover, many followers of Entsū wrote the works that were similar to Entsū's *Bonrekisakushin*, and the lectures of the Buddhist astronomy in the major Buddhist sects were mainly made for an instruction of the dharma preservation theory. Of these Entsū's disciples, Reiyū especially published many dharma preservation style Bonreki works, such as *Gohōsakushin* (Promotion of the dharma preservation) and *Shumikai jikken rekisho* (Experimental astronomy of the Shumisen world), and developed the Bonreki theory as a dharma preservation theory. The works of Sada Kaiseki in the Meiji period that took a more anti-Western and ultra nationalistic discourse are well known as an extreme case of this direction. However, as we considered in this chapter, the fundamental discourse that was shared by the entire development of the Bonreki movement was a scientific discourse. The Bonreki movement was not a simple attempt of the dharma preservation that tried to protect the Shumisen worldview as a religious authority, but an intellectual movement that tried to establish the Buddhist astronomy that can be contestable with the modern Western astronomy. In order to produce a logically consistent theory, it was compelled to revise or even deny the founder's basic theory. In the process of the development of the Bonreki movement, therefore, there emerged the new theories one after another in order to improve the Bonreki theory as more corresponding to the scientific survey and the astronomical calculation.

Sticking with the point of view that identifies the Shumisen theory with the Bonreki theory, the meaning of the disappearance of the Bonreki movement and the later silence will be an opposition between the modernism (or Christianity) and the traditionalism (or

Buddhism) and their competition. But as frequently mentioned in this chapter, Entsu's and his follower's basic project (at least the project of the main line) was to establish "Buddhist astronomy," and their Bonreki theory was basically to theorize the relation between the Buddhist worldview and the result of the scientific survey at the same level as the modern Western science. Focusing on this discursive characteristic of the Bonreki movement, the meaning of the disappearance of the Bonreki and the later silence could be reconceptualized as an opposition between the two scientific theories (Buddhist astronomy/modern Western astronomy) that emerged in the same period and their competition. At least at the point of the emergence of the Bonreki movement, the geocentrism and the idea of the spherical earth of the modern Western astronomy was only a newly introduced concept, and the newly established Buddhist astronomy held a persuasive power as a scientific theory. Entsu's Bonreki theory was accepted by people in his period not only as a dharma preservation theory, but also as a new scientific explanation of the world system.

It might not be so significant for modern intellectual history whether the meaning of the silence after the Bonreki was the opposition between "traditional and modern" or that between "Buddhist astronomy and modern Western astronomy." However, the difference of these meanings is highly significant for one of the main theses of this dissertation: the search for the discursive relation between the Bonreki movement and the modern Buddhism. Because the Bonreki movement as a reconstruction of Buddhist thought in terms of the modern scientific discourse can be considered a similar Buddhist intellectual movement to the modern Buddhism in the "Buddhist astronomy/modern Western astronomy" scheme, while the Bonreki movement and the modern Buddhism cannot but be depicted as oppositional in the "traditional/modern" scheme that identifies the Bonreki theory with the Shumisen theory. In the following chapter, I would like to consider the relation between the Bonreki and the modern Buddhism in more detail focusing on the analysis of their discursive mode.

**CHAPTER 6**  
**WHEREABOUTS OF SHUMISEN: COSMOGRAPHIC DISCOURSE OF**  
**THE MODERN JAPANESE BUDDHISM**

**Bonreki Movement and Modern Buddhism**

In the summer of 1877, the first national exposition in Japan (*Naikoku kangyō hakurankai*) was opened at the Ueno garden in Tokyo. This exposition held as a national enterprise was open for 102 days. In this exposition, 84,353 materials were exhibited and the number of visitors reached 454,000. Of the exhibited materials that were classified into the six categories (mining and metallurgy, manufactured products, arts, machines, agriculture, and gardening), the miniature mechanical model of the celestial system of the Shumisen world (*Shijitsu tōshōgi*) exhibited by Kanchū's disciple, Sada Kaiseki, was particularly conspicuous. Kaiseki explained the appropriateness of the flat worldview using this model in comparison with the modern Western worldview, and inspired the interest of many visitors.

Figure 85 is the blue print of Kaiseki's *Shijitsu tōshōgi* (the model of visional phenomenon and real phenomenon). According to Kaiseki, the movement of the heavenly bodies around point A (the real zenith) is what occurs in the sky of real phenomena (*jishshōten*). Each one of the four islands of the Shumisen world has a visionary sky surrounding point B and this visionary sky represented by a dome shape in Kaiseki's model is the model of the sky in modern Western astronomy. Kaiseki called this visionary sky the sky of visionary phenomena (*shishōten*). We are always observing the real movement of the heavenly bodies, which occurs far behind the visionary sky, through a glass of the sky of visionary phenomena. Therefore, the sky that is seen as rotating around the visionary polestar (point C) from our human vision is only a reflection of the movement



of the real sky rotating around the real polestar (point D). Kaiseki's model exhibited in the national exhibition was constructed following this blue print, and the models of the heavenly bodies in Kaiseki's miniature model could be moved corresponding to his explanation.

Kaiseki's theory named *shijitsu tōshōron* (the theory of the equality of the visionary and the real phenomena), was a development of Entsū's Bonreki theory developed in a similar way to the theories of Fujii and Ankei that we considered in the previous chapter. Kaiseki's highly sophisticated mechanical model can be evaluated as the peak of the development of the Bonreki theory in this field, just as Fujii's theory was the peak of the theoretical development of the Bonreki as a scientific theory. But as mentioned in detail in the previous chapter, the study of Buddhist astronomy as a scientific theory and an attempt to verify the substantial existence of the Shumisen world almost suddenly disappeared due to the popularization of modern western astronomy and its cosmography becoming the general knowledge of people.<sup>1</sup>

Focusing on this sudden disappearance, the Bonreki movement seems to have had no relation to the later development of modern Buddhism. But while Bonreki as a fundamentalist dharma preservation theory opposing the Western scientific worldview was also opposed to the modern Buddhism that reconstructed Buddhist thought in terms of the modern scientific and philosophical discourse, Bonreki as Buddhist astronomy shared a certain discursive mode with the projects of modern Buddhism, such as Buddhist philosophy, the Indian original Buddhism, and the distinction between the religious wisdom and scientific knowledge. For example, one of the representative modern Buddhologists who advocated the idea of the Indian original Buddhism (*genshi Bukkyō*), Kimura Taiken, evaluates Kaiseki's work as follows:

---

<sup>1</sup> Kaiseki's model is now exhibited at a quiet corner of National Science Museum at the Ueno garden in Tokyo.

Mr. Sada Kaiseki was born in the Higo region in 1818. He passed away in 1882 at the age of sixty five. He first belonged to the Honganji sect, but tried to convert to the Tendai sect. This fact implies that he was not so successful inside of sectarian Buddhism. However, what he tried to achieve in his life time was, as it were, the issue of the whole country, that is, how to preserve and develop existing Eastern civilization. Therefore, he did not pay so much attention to trivial sectarian issues. Moreover, the most eminent characteristic of his so called nationalism (*kokusuishugi*) was that he did not commit to a passive boycott campaign, but held a positive attitude to the end. In other words, he did not try to compete with Western civilization by preserving conventional thought, organization, and things just as they are, but revised and developed them corresponding to the needs of the period.<sup>2</sup>

The image of Kaiseki described by Kimura in this passage is highly similar to the image of Fumon Entsu that I described in the previous chapters. As a modern Buddhologist, Kimura was critical of the fundamental Buddhist reaction to modernity, but he could have sympathy with Kaiseki's theory as "a revision and development of conventional thought, organization, and things." If Kaiseki's work (or the works of the Bonreki scholars) was a preservation and development of Eastern civilization in terms of the modern discourse as Kimura mentions here, the entire Bonreki movement should be reconsidered as a similar intellectual movement to modern Buddhism at least at the level of its discourse. Because a reconstruction of Buddhism as a basic part of Eastern civilization in terms of the modern discourse has been a fundamental project of modern Japanese Buddhist thought.

Just featuring the discrepancy between the Bonreki movement and modern Buddhism, it may be hard to understand sympathy of modern Buddhists with the Bonreki theory. However, in the fifth chapter, we tried to reveal a discursive characteristic of the Bonreki as a scientific theory and suggested the possible discursive relation between Bonreki as Buddhist astronomy and modern Buddhism. In this chapter, I would like to consider the same issue from a reversed point of view by analyzing the cosmographic discourse of the modern Buddhists and comparing their "ways" of writing the Buddhist worldview with those of the Bonreki scholars.

---

<sup>2</sup> Kimura, "Sada Kaiseki shi no Shijitsu tōshōron," *Shūkyō kenkyū*, 1 : 227-236.

Some strategies of contemporary theory of narrative, especially those that adopt or are inspired by the analytical method of structuralism and formalism provide us with a very useful perspective for considering this issue. Starting with Russian formalists' distinction between story (*fabula*) and plot (*sujet*), between the story and the way it is told, attempts have been made to investigate the intricate relations between a story and the variety of discourses through which a story is narrated, and also to identify the codes and tropes by which narratives are governed.<sup>3</sup> The set of events or facts (imaginary or factual) that constitute the "story" that is told are sometimes narrated in different ways. We can narrate the same story in a different order and with different sets of emphases. We can also narrate a story with different rhetorical devices. By developing a structural analysis of literary works (poetics or narratology) which would stand to literature as linguistics stands to language, attempts were made not to interpret a story but to investigate its structures and rhetorical devices. The main focus of their project was therefore not to explain what individual works mean, but to explicate the system of figures and conventions that enable works to have the forms and meanings they do. In other words, they have dealt not with what the text means (content) but with how a text means (form), and have tried to reveal a deep structure of works that is not necessarily noticed by the author.<sup>4</sup>

If we follow this type of semiotic decoding of narrative discourse, the content-oriented distinction, such as whether the subject of cosmography was the Shumisen world as a substantial existence or the Shumisen world as an ideal existence, will no longer stand as a basis of classification. Because the significant issue in this context was not "what was explained," but "how it was explained." Therefore, it would be the present issue of this

---

<sup>3</sup> As Gérard Genette adopted the Russian formalist's scheme and set a trichotomy dividing story (the signified or narrative content), narrative (the signifier, statement, discourse or narrative text itself), and narrating (the producing narrative action), the theory of narrative has recently been developed so that it can include the author's intention and the situation of enunciation (Genette 1980 and 1986).

<sup>4</sup>This type of literary criticism that analyzes not a narrative content but a narrative discourse has been adopted by works in various fields of study and provides a perspective that enables the students of the humanities to analyze works in their respective study fields not as objective description but as narrative (White 1978; LaCapra 1988; Clifford and Marcus 1986; Clifford 1988; Geertz 1988; Barnes and Duncan 1992).

chapter to consider what type of narrative discourse the Bonreki scholars and the modern Buddhists used for describing the Buddhist worldview and to compare their cosmographic discourses.

Following this critical concern, here I will take up the works of three representative modern Buddhists: Inoue Enryō as a representative modern Buddhist philosopher (*tetsugaku Bukkyō*), Kimura Taiken as a representative modern Buddhologist who advocated the idea of the Indian original Buddhism (*genshi Bukkyō*), and Kiyozawa Manshi as a founder of the modern Buddhist faith (*kinditeki shinkō*). Focusing on their ways of describing and explaining the Buddhist worldview, I would like to consider the relation between Bonreki and modern Buddhism at the level of their cosmographic discourse. How was the Shumisen worldview explained in the context of modern Buddhism that reconstructed Buddhist thought in terms of modernity? Thinking of this issue in detail, in this chapter, I would also like to consider the basic discursive mode of so-called modern Buddhism.

### **Buddhist Worldview of Modern Buddhology: Inoue Enryō's *Yōkaigaku***

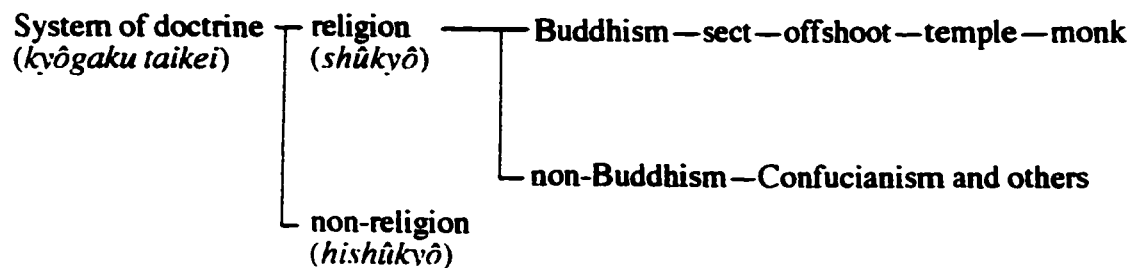
#### *Inoue Enryō's Buddhist Philosophy and Yōkaigaku*

Inoue Enryō was born in 1858 at the Buddhist temple of the Shinshū Otani sect in the Echigo region. In 1877, he entered the department of English in the newly established private school of East Honganji and in the next year, became a student of Tokyo Imperial University as a student sponsored by East Honganji. He became a matriculated student of the philosophy department in 1881. He is not only famous as a modern Buddhist philosopher, but is also well known as one of the first generation of modern Japanese philosophers. He advocated the establishment of the first academic association of philosophy in Japan (*Tetsugakukai*) and organized this association, together with other famous philosophers, such as Nishi Amane, Katō Hiroyuki, Miyake Setsurei, and Inoue Tetsujirō. When the Tetsugakukai was established in 1884, he was still a student of the

philosophy department. After graduating from the university in 1885, he neither stayed at the university nor went back to the Otani sect, but rather engaged in his own independent intellectual activities.

Of the various intellectual activities of Enryō, his criticism of Christianity in terms of modern philosophy and science is well known. Enryō published *Shinri kinshin shohen: Yasokyō wo haisuruwa riron ni aruka* (Golden Needle of Truth: Can we theoretically eliminate Christianity ?) in 1886 and advocated his unique anti-Christianity theory. This work, which was first published in the general Buddhist periodical, *Meikyōshinshi*, was eagerly accepted by Buddhist intellectuals and became a best-selling book along with Enryō's later work, *Bukkyō katsuron* (Theory for vitalizing Buddhism). One of the main purposes of this work was to compare the religious values of Christianity and Buddhism at the level of their relation to modern philosophy and science. Enryō theoretically explained the supremacy of Buddhism over Christianity as a modern religion and insisted that Buddhism was better suited to modern rationalistic thought than was Christianity.

Enryō first divided religious thought from anti-religious thought. Christianity and Buddhism are both religions and they are the same on this point. Therefore, the difference between Christianity and Buddhism was refigured as a difference between the two religions. This explanation was a significant development from the anti-Christianity theory before Enryō that frequently confused Christianity and modern Western civilization. Enryō schematizes this relation as follows:



5

<sup>5</sup> Inoue Enryō, "Shinri kinshin (Golden needle of truth)," in *Shinshū shiryō shūsei*, vol. 13 (Kyoto: Dōhō sha, 1977), 87.

Enryō frequently identifies "non-religious system of knowledge" with "science and philosophy (*rigaku tetsugaku*). Therefore, modern science and philosophy that was separated from religious knowledge was a common threat to both Buddhism and Christianity. Following this scheme, he compared Buddhism and Christianity in terms of their relation with modern science and philosophy and logically tried to show the supremacy of Buddhism over Christianity as a modern religion .<sup>6</sup>

Enryō is also well known as an enlightenment activist in the Meiji period. In order to spread modern scientific and philosophical thought to Japanese people, he passionately engaged in various activities. Soon after graduating from the university, Enryō established his own publication company, *Tetsugaku shoin*, and published his works. He also supervised the publication of *Tetsugakukai zasshi*(Journal of the association of philosophy) and inspired public debate on the issue of philosophy. Enryō also established a private school of philosophy, *Tetsugakukan* (the school of philosophy), in 1887.<sup>7</sup> This school was the first school in Japan that held lectures on the philosophy in Japanese. The only

---

<sup>6</sup> According to Enryō, Christianity has the following logical inconsistencies with modern scientific standards: 1) geocentrism (*chikyūchūshin setsu*), 2) the idea of man as the lord (*ningenshuchō setsu*), 3) the theory of free will (*jiyūshi setsu*), 4) the theory of good and evil, and misfortune and fortune (*zen'aku kafuku setsu*), 5) the unknowable power of God (*shinryokufusoku setsu*), 6) the beginning and the end of time and space (*jikūshūshi setsu*), 7) the existence of God beyond mind (*shingaiyūshin setsu*), 8) the existence of God beyond matter (*butsugaiyūshin setsu*), 9) the criterion of truth (*shinrihyōjun setsu*), 10) development of doctrine (*kyōgihensen setsu*), 11) the idea that the Eastern culture has no thought (*tōyōmukyō setsu*), and 12) the origin of humanbeing (*jinshukigen setsu*).

Enryō explains each topic in detail and criticizes the basic theories of Christianity using modern scientific and philosophical standards. For example, the first topic (geocentrism) is criticized in terms of the heliocentrism and the second and the twelfth topics are criticised as opposing the theory of evolution. Most of the other topics are criticized in their relation to the supernatural power and will of God. Enryō criticized these irrational phases of Christianity and insisted that Buddhism was a more rationalistic religion than Christianity by using the examples such as the fact that the pantheistic theory of Buddhism never conflicts with the theory of evolution and the modern mechanistic worldview. In short, Christianity was denied as an irrational and out-of-date religion and Buddhism was promoted as a religion better fitting modern rationalism. In this sense, Enryō's anti-Christianity theory was also a reconstruction of Buddhist thought as Buddhist philosophy, because his emplotment structure here, that is, the contradiction between irrational Christianity and rational Buddhism required a reconstruction of Buddhism in terms of modern scientific and philosophical discourse. Enryō also published two volumes as the sequels of *Shinrikinshin shohen* (*zokuhen* and *zokuzokuhen*). It is well known that he criticized the realities of Japanese Buddhism for focusing too much on funeral rituals and he advocated a systematic reorganization of Buddhism in the second volume. This second volume mainly dealt with the practical aspects of Buddhism and Christianity. In the third volume, Enryō developed a synthetic theory uniting the issues of theory (*shohen*) and practice (*zokuhen*) by focusing on the universality of the Buddhist thought.

<sup>7</sup> This school became the foundation of today's Tōyō University in Tokyo.

school that had a philosophy department in Japan at that time was Tokyo Imperial University, but the language of the lectures in this department was mainly English. Enryō thought that philosophy should be taught in Japanese in order to make modern philosophy accessible to Japanese people. This perspective that discussed modern Western philosophy in terms of Japanese culture also led to establishing his idea of Eastern philosophy (*tōyō tetsugaku*). In this context, the Buddhist thought was also reconstructed as Buddhist philosophy that was a part of Eastern civilization. In 1896, Enryō became the first doctor of literature (*bungaku hakase*) who received a degree by writing a dissertation. The title of this dissertation was *Gedō Tetsugaku: Bukkyō tetsugaku keitōron daiippen* (Philosophy of the outer way: the first volume of a genealogical survey of Buddhist philosophy). In this work, Enryō studied the philosophy of the six outer ways in India as the first part of a genealogical survey of Buddhist philosophy. In his later years, he built the dome named *Shiseidō* (the dome of the four sages) and enshrined the statues of the Buddha Shakamuni, Confucius, Socrates, and Kant as the four sages. This dome that enshrined his four sages seems to symbolize his perspective that regarded Buddhism as a philosophy.

One basic project of Enryō's various intellectual activities was to reconstruct Buddhist thought as a philosophy and to show how well Buddhism fit the rationalistic discourse of modern science and philosophy compared with other religions like Christianity. However, the actual teaching and practice of Buddhism included many folk religious and superstitious factors. In order to verify that Buddhism is a rationalistic religious thought, these superstitious elements must first be explained in a rationalistic way. So he created another unique intellectual field of study called *Yōkaigaku* (the study of the mystery)<sup>8</sup> that mainly aimed at eliminating the conventional superstitious notions of the people. By the fact that it was closely related to both the reconstruction of Buddhism as a philosophy and the rationalistic criticism of Christianity, Enryō's *Yōkaigaku* was a project fundamental to his

---

<sup>8</sup> Normal English translation of *yōkai* is ghost or apparition and the commonsensical Japanese meaning is also similar to them. But Enryō's *Yōkaigaku* is a broad field of study which includes wider issues beyond these words. Therefore, I chose the word, mystery, for the English translation of *yōkai* here.

entire intellectual activities. In this criticism of the superstitious mystery, Enryō dealt with broad mystical issues including the issue of traditional Buddhist worldview as well as ordinary superstitions, such as the belief in the existence of ghosts. Focusing on this unique study of mystery, I would like to consider Enryō's cosmographic discourse in comparison with that of Entsū Bonreki.

### *Establishment of Yōkaigaku*

In 1886, Enryō established the association for the study of mystery (*fushigi kenkyūkai*) in Tokyo University. In the introduction to the main work of the Yōkaigaku, *Yōkaigaku kōgi* (lecture on the study of mystery), Enryō explains this association as follows:

The beginning of my study of mystery (*yōkai*) started ten years ago, that is, in the summer of 1884. I proposed to establish an association for studying this issue in Tokyo University by appealing to the academic significance of this study. Then I invited comrades and established the association for the study of mystery. . . We had the first meeting on January 24, 1886 at a lecture room of the university. Though the number of members increased later, I had been sick in bed for a while and could not do office work. It finally went into recess. At that time, I also publicly asked people to send me letters containing factual examples (of mystery). The number of letters that I have received amount to four hundred sixty two to date.<sup>9</sup>

This association that gathered scientists and philosophers did not last for a long time as he mentions, but Enryō kept studying this subject. As mentioned above, Enryō inserted an advertisement in various periodicals for the purpose of collecting information on mysterious phenomena, and the number of letters already reached four hundred sixty at time of publishing *Yōkaigaku kōgi*. He classified these letters sent by people into scores of categories and actually examined these mysterious phenomena by making many field trips.

As an enlightenment activist, Enryō joined various activities and made a number of public lecture tours to spread modern philosophical and scientific thought to the Japanese

---

<sup>9</sup> Inoue Enryō, *Yōkaigaku kōgi*, vol. 1 (Tokyo: Kokusho kankōkai, 1979), 19-20.



people and to raise a fund in order to expand his Tetsugakukan school. The number of places that he visited already numbered two hundred fifty in fifty different regions throughout Japan at the time of the publication of *Yōkaigaku kōgi*. He conducted field research as a part of these tours and collected many examples of mysterious stories. Enryō also examined an enormous amount of humanities texts in the Japanese and Chinese traditions focusing on statements concerning the mysterious. In the introduction to his *Yōkaigaku kōgi*, Enryō mentions over five hundred texts in forty three categories. This bibliography includes works of various fields of study, such as Buddhist scriptures, Confucian scriptures, philosophy, history, travel writing (or ethnology), traditional astronomy (or astrology), medical texts, natural history, manuals of ritual, manuals of fortune telling, collections of folk tales, literature and so on. He studied these texts for over ten years and constructed his study of mystery. Since Enryō mentions that "I omitted resources from periodicals and newspapers, and Western texts,"<sup>10</sup> his textual resources were actually more than that.

Based on these dense field and textual researches, Enryō published many articles and books on the study of mystery. In 1896, he revised the transcript of his lectures at the Tetsugakukan school and published *Yōkaigaku kōgi* (lectures on the study of mystery). In this work, which consists of five volumes, Enryō clearly systematized his study of mystery and established a synthetic theory covering enormously various topics. Even though *Yōkaigaku kōgi* was a comprehensive compilation of his study of mystery, Enryō kept publishing works on the study of mystery in his later years. The collection of these works was later published as the *Yōkai sōsho* (Yōkai series, 8 volumes). The works on the Yōkaigaku occupied a significant part of an enormous number of Enryō's publications.

In order to make his *Yōkaigaku kōgi*, which was almost 2,500 pages, accessible to the general public, Enryō divided the six volumes into twenty four volumes and published it as a periodical titled *Yōkaigaku zasshi* (the periodical of the study of mystery) from 1900

---

<sup>10</sup> Inoue, *Yōkaigaku*, vol. 1, 27.

to 1901. The main purpose of his work was not to study this subject just for its research value, but to spread a rationalistic and scientific worldview to the people. Enryō explains this motivation as follows:

The study of mystery seems like a humble work, but it is actually related to a wider issue and has a significant meaning. Therefore, it is clear that the explanation of mystery is significant not only for an educator and religionist, but also for a doctor, writer, poet, artist, actor, historian, police man, soldier, politician, and lawyer. And it is also obvious that people who are engaged in farming, craft, and commerce, and women and girls all need to know the principle of this study.<sup>11</sup>

Through his life long activity, Inoue Enryō became a popular enlightenment activist in this period and was popularly known as "Doctor Ghost (*yōkai hakase*)."

#### *The Study of Mystery: Yōkaigaku*

In his *Yōkaigaku kōgi*, Inoue Enryō defines *yōkai* (mystery) as "things that are unusual and unthinkable."<sup>12</sup> This definition of *yōkai* was a wider concept than the ordinary meaning of this word. *Yōkai* normally means a supernatural being, such as transformed animals (*korī*), ghosts (*yūrei*) and demons (*kishin*). Although Enryō's *Yōkaigaku* included these notions too, his study of mystery covered incredibly various matters including those of the traditional worldview, such as: the dragon palace (*ryūgū*); Mt. Sumeru; the realm of divine being (*senkyō*); magic and religious healing; mental illusions and dreams; the idea of other worlds, such as the Pure-land and the hell; the idea of spirit; religious ritual and exorcism; and even the technique of memorization. Dividing these enormous number of matters into the seven categories, Enryō categorizes *yōkai* (mystery) in his *Yōkaigaku kōgi* with a huge classified list (Appendix 2). Following the categories listed in this table, Enryō analyzed an enormous amount of information based on textual critique, examination of the reports from people, and his own field researches.

---

<sup>11</sup> Inoue, *Yōkaigaku*, vol. 1, 30.

<sup>12</sup> *Ibid.*, 9.

According to Inoue Enryō, the standard for determining certain things as mysterious and unusual does not come from the mysterious things themselves, but is actually related to a subjective issue, that is, human perception and thought. Therefore, the things that used to be considered as an unthinkable mystery by primitive knowledge and superstitious understanding of experience could be explained as thinkable phenomena by the more developed knowledge and the scientific understanding of experience. Enryō basically divides "true mystery (*shinkai*)" from "delusive mystery (*kekai*)." Delusive mystery is an illusory mystery that is actually explainable at the level of human knowledge, but mistakenly considered a mystery (*yōkai*). True mystery is a real mystery that is truly unthinkable at the level of the human knowledge. Enryō also call this true mystery the "principle mystery (*rikai*)" or the "ideal (*risō*)," and explain it as follows:

Lao-tse named it (the true mystery) *mumei* and Confucius called it *ten* (heavenly will). It is called *taikyoku* in *eki*. Shaka called it *shinnyo* (ultimate reality), *hosshō* (dharma-nature), and Buddha. It is called *tentei* (ruler of heaven) in Christianity and called *kami* (god) in Japan.<sup>13</sup>

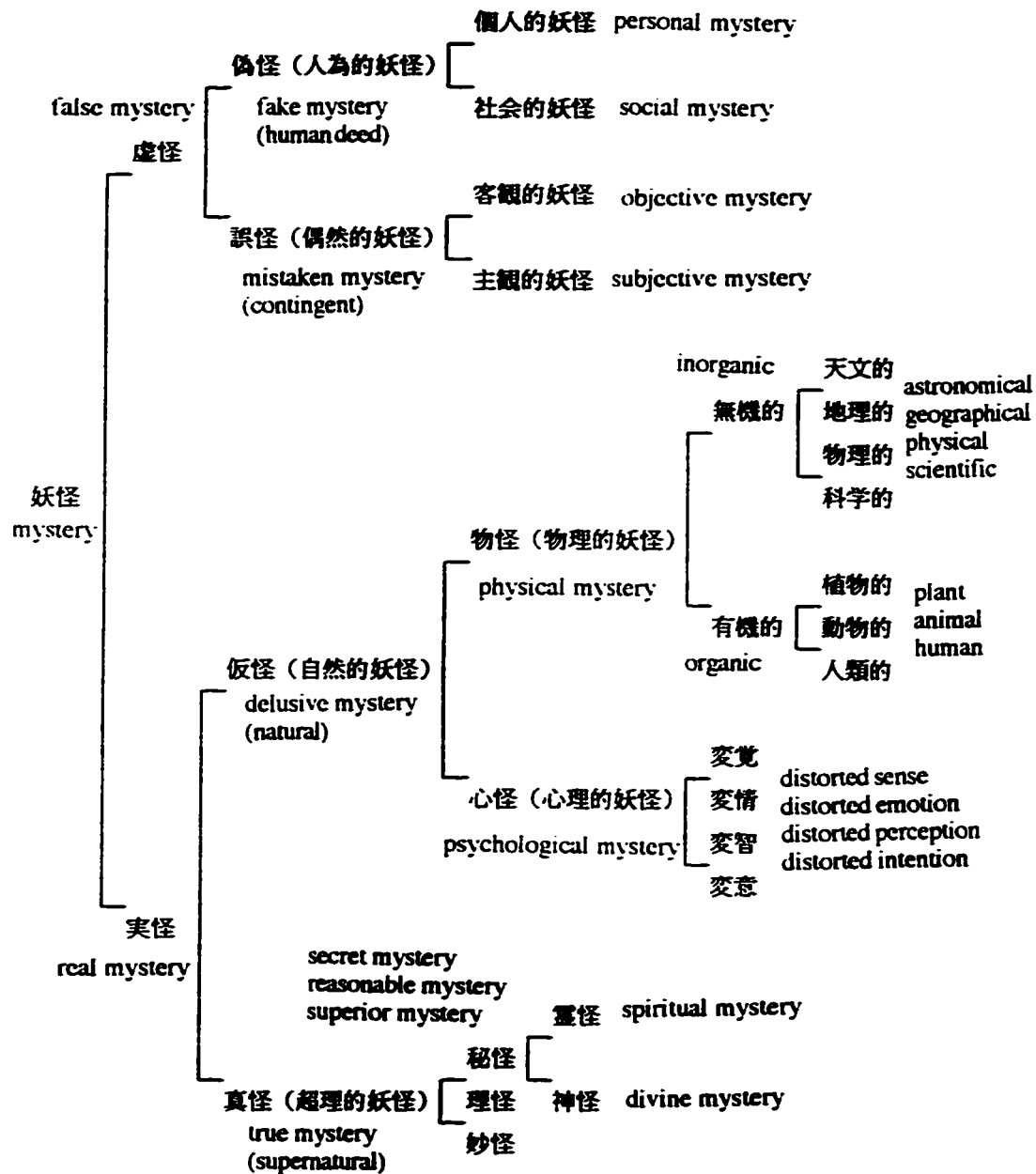
For Enryō, the true mystery was an ultimate religious truth that was far beyond human perception and knowledge. He also defines the mystery that has no psychological and physical basis as the "false mystery (*kyokai*)" and insists that most of the so-called *yōkai* belongs to this category. In the case of the "delusive mystery (*kekai*)," there still is an object of mistaken explanation. The primitive explanation of natural phenomena as an effect of supernatural beings is a typical example of this category. The delusive mystery is also divided into the physical mystery which has a physical source of delusion and the psychological mystery which has a mental source of delusion.

However, the false mystery is a complete fiction fabricated by the individual or the society. The false mystery is also divided into the "fake mystery (*ikai*)" that is produced

---

<sup>13</sup> Inoue, *Yokaigaku*, vol. 1, 9.

artificially and the "mistaken mystery (*gokai*)" that is based on contingency. Enryō schematizes these categories of mystery into the following diagram:



(*Yōkaigaku kōgi*, vol. 1: 267-268)

For Enryō, *yōkai* (mystery) was a broad concept that included various phenomena, such as an artificially created illusion, a mistaken identification of a towel hanging on a tree with a ghost, a primitive understanding of natural phenomena, mental disease, and the ultimate religious truth.

As Enryō says that "the purpose of the *Yōkaigaku* is to eliminate the fake mystery (*ikai*) and the delusive mystery (*kekai*) and reveal the true mystery (*shinkai*),"<sup>14</sup> the main purpose of Enryō's *Yōkaigaku* was to reveal the true mystery that was really unthinkable and also ultimate truth by rationalistically explaining away the false mystery and the delusive mystery. In other words, Enryō's project was to eliminate superstitions and folk religious belief from the everyday life of the people and to reveal modern religious values that could overcome rationalistic criticism. This perspective of Enryō was based on the evolutionary idea of history inspired by the theory of social evolution of Comte and Spencer.

Enryō aggressively utilized the theories of natural science and psychology and rationalistically explained phenomena that used to be considered mysterious and unexplainable. In his *Yōkaigaku kōgi*, Enryō explained various types of mystery in terms of the related scientific field of study. Of these scientific theories, Enryō attached most importance to psychological explanation, and most phenomena that could not be explained in terms of natural science were explicated in terms of the psychological condition of the witness. For example, Enryō explains a popular mystical practice of his period, *kokkuri* (nodding: according to Enryō, this is a variation of the table-turning brought by the crews of the Black ship), by pointing out three factors: 1) the outer and physical factor derived from the vulnerability of the equipment of the game, 2) the psycho-physical factor derived from the touch of the equipment by the hand, and 3) the inner and psychological factor derived from the mental function of people. Enryō considered the psychological factor the most significant of them and concluded that "the reason why *kokkuri* moves around just as if it has its own intention and answers people's questions is solely that it is a result of an

---

<sup>14</sup> Inoue, *Yokaigaku*, vol.1, 35.

anticipated motivation (*yokiikō*) and an unconscious movement of muscle (*fukakukindō*)."<sup>15</sup>

Moreover, Enryō actively made field researches of local mysterious phenomena. "The mysterious incident of Surugadai" that was published in the Buddhist journal, *Meikyō shinshi*, was a typical result of his research.<sup>16</sup> The basic presupposition of these field researches was that there should always be an artificial factor or psychological factor behind a mysterious incident. In the case of the Surugadai incident, the cause of the oracle of the fox in this incident was assumed to have been the doings of the maid and this assumption was later verified.

The basic presupposition of Enryō's *Yōkaigaku* was that every superstition and popular belief, which had been traditionally held by people, was not actually unthinkable, but rationalistically explainable in all cases. However, it should be noted that these superstitions and popular beliefs explained in Enryō's *Yōkaigaku* covered varying issues relating to every aspect of the people's lives. Enryō's *Yōkaigaku*, which tried to reinterpret these various issues in terms of modern rationalism, had a wide field of study beyond the narrow meaning of *yōkai*, which is normally translated as ghost.

#### *Yōkaigaku and Buddhist Worldview: Enryō's Buddhist Cosmography*

Basically, Enryō's *Yōkaigaku* dealt with general superstition and popular belief. However, reflecting his basic project, which was the reconstruction of Buddhism in terms of the modern scientific and philosophical discourse, he frequently attempted to reinterpret the popular Buddhist beliefs. These popular Buddhist beliefs included many topics related to Buddhist cosmology.

First of all, the Shumisen worldview is explained in detail in the section that deals with the land mystery (*chiyō*). Enryō introduced the basic theory of the Shumisen

---

<sup>15</sup> Inoue, *Yōkaigaku*, vol. 4, 282-320.

<sup>16</sup> *Meikyō shinshi*: 3041-3044.

worldview in the Buddhist scriptures and concluded that "compared with today's scientific theory, all of it cannot but be criticized as an ancient delusive theory."<sup>17</sup> For Enryō therefore, it was meaningless to literally preserve the Shumisen worldview against the modern scientific worldview and he criticized the works of Fumon Entsū and Sada Kaiseki as meaningless fundamentalist reaction to modernity. Enryō criticized the basic thesis of these works which presupposed an absolute value of divine vision. According to Enryō, the objective worldview (*kyakkanteki sekairon*) of the Shumisen worldview is a theory of Hinayana Buddhism. Mahayana Buddhism takes a subjective worldview (*shukanteki sekairon*) that regards the material world as a reflection of a subjective notion. Attaching importance to the subjective meaning of the Buddhist worldview, Enryō concludes as follows:

This objective worldview is a theory mainly discussed by Hinayana Buddhists and Mahayana Buddhists basically take the subjective worldview. Comparing the Mahayana and the Hinayana, it is obvious for anybody that the former is superior to the later. If so, the Shumisen worldview is just a branch theory of Buddhism, and whether it can be verified or not has nothing to do with the life of Buddhism.<sup>18</sup>

Moreover, Enryō insists that the results of sensitive studies (*kankakujō no kenkyū*), such as astronomy, geology, and physics, are qualitatively different from religious truth and concludes as follows:

We would have no reason to be suspicious, even if Buddha adopted the theory, which is inconsistent with today's experiments, three thousand years ago. This is rather a natural thing. . . Since the Buddha Shakamuni took an astronomical theory of his time, therefore, we should just follow this theory. I suppose that the idea that Buddha has a divine vision and divine faculty does not mean his physical power, but explains his mental faculty. This is a subjective issue and it is not an objective issue.<sup>19</sup>

On the existence of the Pure-land and the Buddhist hell, Enryō first indicates that there are two types of arguments that discuss this issue: the subjective and the objective.

---

<sup>17</sup> Inoue, *Yōkaigaku*, vol. 2, 115.

<sup>18</sup> *Ibid.*, 117.

<sup>19</sup> *Ibid.*, 121-122.

However, it is almost impossible for people who receive today's education to literally believe in the objective existence of the Pure-land and the hell. Enryō considered that "it is a highly urgent business to find a satisfactory explanation for today's people,"<sup>20</sup> and reinterpreted the meaning of the Pure-land and the hell as follows:

The fact of life after death cannot be fully explained by letter and language. . . . If we dare to describe them, this description naturally has a sensitive characteristic. The language and letter are finite, but human thought is infinite. It is no wonder that infinite thought that is described by the finite letter directly turns into the finite description. Therefore, it is an inevitable thing to describe the figure of the Pure-land and the hell in today's sense. However, we cannot completely eliminate them as an illusion. If people are able to know a part of truth by using these ideas as a step to reach to the truth, these expedients (*hōben*) will turn into the truth (*shinjitsu*). People who read the Buddhist scriptures have to understand this well. Never stick to only the surface of the letter. We should look for the truth that is hidden under the surface of the letter.<sup>21</sup>

Here, Enryō seems to be trying a symbolic reinterpretation of the meaning of the Pure-land and the hell.

Moreover, Enryō explains the theory of transmigration within the six lower states of existence (*rokudōrinne*) as follows:

The true theory of transmigration is the idea that there should be results of suffering or pleasure corresponding to the various kinds of or various degrees of causes in this vast universe and the uncountable worlds. This is to broadly explain cause and effect at a spiritual level. Therefore, even if it is a theory of rebirth, the true theory of transmigration never explains the narrow local fact that someone died in a certain village and was reborn in another village as is popularly believed.<sup>22</sup>

Here too, the meaning of the popular idea of transmigration is reconstructed as a philosophical explanation. Enryō also explains the idea of the permanence of soul. He utilizes the ideas of modern physics, such as the principle of the permanence of materials (transmutation) and the permanence of energy, and develops his unique theory of the

---

<sup>20</sup> Inoue, *Yōkaigaku*, vol. 4, 206.

<sup>21</sup> *Ibid.*, 220.

<sup>22</sup> Inoue, *Yōkaigaku*, vol.5, 166-167.



permanence of soul.<sup>23</sup> According to Enryō, just as any material remains to exist through the process of transmutation in a natural cycle, the soul of sentient being keeps existing. However, the soul has two phases of existence: the latent and the apparent. The soul of the living being is on the apparent side and the soul of the dead is on the latent side. They are just two sides of existence and therefore the death does not mean the disappearance of the soul. By creating a rationalistic explanation that utilized the modern scientific discourse, Enryō reinterpreted the conventional idea of the soul and insisted that "the so-called ghost in popular belief and the soul of this theory of the permanence of the soul were completely different idea."<sup>24</sup> Here again, Enryō reinterpreted popular belief in terms of modern scientific and philosophical discourse. The Buddhist idea of the permanence of the soul was refigured as a theory that had nothing to do with the popular idea of the soul.

The common perspective of these theories of Enryō was that he denied the popular interpretation of Buddhist thought and the fundamentalistic interpretation of the Buddhist scriptures and tried to reinterpret the basic theories of Buddhist worldview in terms of rationalistic explanation. Through these reinterpretations, Enryō tried to find a religious truth in Buddhist thought, which had a philosophical basis that could overcome a rationalistic criticism. Therefore, the popular religious factors of Buddhism had to be eliminated as unessential factors and reinterpreted in terms of the modern scientific and philosophical discourse. In this sense, Enryō's *Yōkaigaku* was also an attempt to reconstruct the traditional Buddhist worldview as a rationalistically explainable theory.

### *Religious Truth and Scientific Knowledge*

The fundamental project of Inoue Enryō's *Yōkaigaku* was to criticize various traditional values from a rationalistic perspective and to reinterpret them in terms of modern scientific and philosophical discourse. Especially concerning superstitions and popular

---

<sup>23</sup> On Enryō's theory of the permanence of soul, see Kawamura Kōshō, "*Inoue Enryō no reikon humetsuron nitsuite*," *Tokyōgaku kenkyū* 9 (1975).

<sup>24</sup> Inoue, *Yōkaigaku*, vol.5, 46.

believes that have a close relationship with Buddhism, he did not only deny them, but also provided a careful reinterpretation featuring a rationalistic explanation. In this context, Entsu's and Kaiseki's Bonreki studies were severely criticized as an improper fundamentalistic reaction to modern scientific theory. However, while Enryō was critical of the theory that fundamentally insisted on the substantial existence of the Shumisen world, he showed a strong interest in a scientific explanation of the meaning of the Shumisen worldview. In an article entitled *Shumisen kenkyū no hitsuyō wo ronzu* (Discussion of the need of studying the Shumisen worldview), Enryō indicated the significance of studying the Shumisen worldview in two ways. First of all, the study of the Shumisen worldview is significant for Buddhist studies, because it can be a key issue in considering the relationship between Indian culture at the time of Buddha and Buddhism. According to Enryō, however, this is not the only reason. The study of the Shumisen worldview is also significant for various scientific fields of study. As an ancient explanation of the world system, the Shumisen worldview includes many interesting topics for anthropology, mythology, ethnology, and sociology. It is also meaningful for the future development of natural sciences, especially astronomy, because today's scientific theory is not completely perfect and is constantly changing. Therefore, as a theory that can provide a different perspective and a possibility of future change, the Buddhist worldview is still meaningful for today's scientific theories.

Enryō explains the relation between the Shumisen worldview and the idea of the spherical earth as follows:

Everybody considers that these two theories cannot be unified. The most obvious difference of them is that while the idea of the spherical earth explains the earth as a rotating spherical body, the Shumisen worldview explains the earth as a motionless flat body. However, considering the principle of these theories more deeply, we can see how these two theories are similar to one another.<sup>25</sup>

---

<sup>25</sup> Inoue Enryō, "Shumisetsu kenkyū no hitsuyō wo ronzu," *Tōyō tetsugaku* 3-2 (1896): 61.

Briefly explaining the structure of the Shumisen world system, Enryō shows the possibility of unifying the modern scientific worldview and the Shumisen worldview as follows:

If we suppose that the wind disc (one of the foundations of the Shumisen world system made of air) is a gas surrounding the earth, that is, the air, and the idea of the empty space (of the Shumisen worldview) is the space of the universe, it (the Shumisen worldview) can be identified with today's scientific explanation. The motion of the earth is the only remaining difference here. However, if we suppose that all heavenly bodies, such as the earth, the sun, and the moon, are aimlessly floating in the infinite and boundless space, there will be only a tiny difference at a level of comparison between the idea insisting that the earth is moving and the sun is motionless and the idea insisting that the earth is motionless and the sun is moving. If we presuppose that the sun is motionless, the earth will be a moving body. If we presuppose that the earth is motionless, the sun will be a moving body. If we see them as a part of the infinite and boundless space, there is no difference between the moving and the motionless. It is only because we consider the relationship between the sun and the earth in terms of a relative comparison between them that we have this (notion of difference). It is like the fact that even though we notice the difference of the four directions and up and down on the earth, these differences do not exist in the universe. If so, we can say that the ideas of the spherical earth and the Shumisen worldview are not very different theories.<sup>26</sup>

Following this perspective, the Shumisen worldview can be reconstructed as a theory somehow related to modern scientific theory. This reinterpretation of the Buddhist worldview in terms of modern scientific discourse is basically a similar project to that of Entsū's Bonreki theory. Even though Enryō criticizes Entsū and Kaiseki in his *Yōkaigaku kōgi*, the focus of his criticism was only on the fundamentalistic remarks of Entsū and Kaiseki and he never refers to the astronomical and cosmographical theory of the Bonreki. As we mentioned in the previous chapter, the Bonreki theory was developed not only as a fundamentalistic dharma preservation theory, but also as a scientific theory. Comparing this phase of the Bonreki theory as a Buddhist astronomy with Enryō's scientific reinterpretation of the Shumisen worldview, they are similar at the level of their discourse in that they tried to reconstruct the Buddhist worldview in terms of a modern scientific explanation. If we put the focus of our argument on an aspect of the Bonreki as a fundamental dharma preservation theory, Entsū's Bonreki and Enryō's *Yōkaigaku* will be

---

<sup>26</sup> Inoue Enryō, "Shumisetsu kenkyū no hitsuyō," 62.

considered a completely different project. But if we shift the focus of the argument on the phase of the Bonreki as a scientific theory, they are similar projects at the level of their ways of describing the Shumisen worldview, that is, at the level of their cosmographic discourse.

Another discursive similarity between Entsū's Bonreki theory and Enryō's Yōkaigaku is the distinction between religious wisdom and scientific knowledge. In his Yōkaigaku, Enryō distinguishes the true mystery (*shinkai*) that is an ultimate religious truth from the delusive mystery (*kekai*) that is a scientifically explainable phenomenon. This basic distinction of the two types of knowledge corresponds to Fumon Entsū's distinction between religious wisdom and scientific knowledge that we examined in the second chapter. According to Entsū, religious wisdom is an absolute truth that is captured only through the divine vision and scientific knowledge is a partial knowledge that is held by the human vision. The human knowledge has a limitation and the truth beyond this limitation can be reached only through a divine wisdom. This idea of the distinction between the limited human knowledge and the infinite religious truth is also a basic idea of Enryō's various intellectual activities. Even in Enryō's Buddhist philosophy, which was a radical criticism of the Bonreki theory, we can find a similarity to the Bonreki theory at the level of their discourse.

### **The World within Text: Kimura Taiken's Buddhist Cosmography**

#### *Kimura Taiken and "Original Buddhism"*

Kimura Taiken was born in 1881. After graduating from the elementary school, he was ordained at a temple of the Sōtō sect. He graduated from the educational institution of the Sōtō sect in 1903 and became a student at Tokyo Imperial University. Kimura studied under the direction of Inoue Tetsujirō, Murakami Senshō, Takakusu Junjirō, and Anezaki Masaharu, and majored in Indian philosophy. He became a lecturer at Tokyo Imperial University in 1912. He became a full professor in 1923 and lectured at Tokyo Imperial

University until his death in 1930. Kimura was a modern Buddhist philosopher who belonged to the generation following Inoue Enryō. While they inherited many issues raised by Enryō's generation, Kimura's generation, which was strongly affected by the Western study of Indian philosophy, developed the Buddhist philosophy in a slightly different way. For example, the title of Inoue Enryō's doctoral dissertation was *Gedōtetsugaku* (philosophy of the outer way). As a first step in his systematic study of Buddhist philosophy, Inoue Enryō studied the Indian thought at the time of the Buddha. In 1915, Kimura Taiken published a study of Indian thought entitled *Indo rokuha tetsugaku* (philosophy of the six sects in India). This work, which was presented an award by the Japanese Imperial academy, is normally considered a work that overarches Inoue Enryō's study of Indian thought.

While Enryō's study of Buddhist philosophy was based on the idea that Mahayana Buddhism was the developed and supreme form of Buddhism, Kimura took an idea that Mahayana Buddhism was a development of "original Buddhism" (*genshi Bukkyō*) at the time of the Buddha. By this perspective, there is no qualitative distinction between the superior Mahayana (great vessel) and the inferior Hinayana (small vessel). This idea of original Buddhism had its roots in the works of his teachers who considered Indian Buddhism at the time of the Buddha to be an original Buddhism and regarded Mahayana Buddhism not as a development, but as a diffusion. For example, one of Kimura's teacher, Anezaki Masaharu, published *Konpon Bukkyō* (Foundational Buddhism) in 1911. In this book, Anezaki explained the meaning of studying "foundational Buddhism" as follows:

The Buddhism of the eastern region is a flower and the Buddhism of the southern region is a branch and leaf. Forgetting the foundational issue dazzled by the beauty of the flower and staying away from the stem because of a clueless breeding of the branch and leaf is the present condition of Buddhism. . . Describing foundational Buddhism (*konpon Bukkyō*) here comes from my conviction that I can reach the true form of the Buddha's propagation of Buddhism as a religion by comparing the Pali Buddhist scriptures with the Chinese Buddhist scriptures that I have studied.<sup>27</sup>

---

<sup>27</sup> Anezaki Masaharu, *Konpon Bukkyō* (Tokyo: Hakubunkan, 1911), 1.

Anezaki's project was to overcome the distinction between the Mahayana and the Hinayana by reaching the original form of Buddhism before its development. Kimura's other teacher, Murakami Senshō, was also famous for his historical criticism of Mahayana Buddhism which insisted that Mahayana Buddhism was not the teaching of the Buddha (*diajō hibussetsu*). Critically inheriting their ideas, Kimura published *Genshi Bukkyō shisō ron* (Study of the thought of the original Buddhism) in 1921 and advocated his "original Buddhism" (*genshi Bukkyō shugi*). Compared with the works of his teachers, Kimura's position was more synthetic. He explains his basic perspective as follows:

My understanding is that the position of the Buddha himself was neither the pure Mahayana nor the pure Hinayana. It simultaneously included a direction that can be both Mahayana and Hinayana. When we study the thought of the Agama sutras that tell a relatively faithful teaching and activity of the Buddha, therefore, it is extremely necessary to search for the origin of the later development of the Mahayana and Hinayana thoughts (especially the Mahayana thought) in these scriptures. . . The traditional scholars in Japan just categorize the Agama sutras as the Hinayana sutra and had no perspective which considers them as the historical origin of the entire Buddhism. The modern Buddhologists who mainly studied the Pali texts simply treated the Mahayana Buddhism as a supplement and never noticed that it is a logical development of the internal thought of original Buddhism. In other words, I could say that both parties almost completely neglected the internal relation between the Agama thought and the Mahayana thought. This book (*Genshibukkyō shisō ron*) is an attempt to clarify the position of the Buddha himself toward the Mahayana and the Hinayana in order to complement these shortcomings.<sup>28</sup>

The basic perspective of Kimura's original Buddhism was to pursue the internal relationship of both the Mahayana and Hinayana teachings to the original Buddhism of the Buddha. Unlike his teachers who basically considered Mahayana Buddhism as a supplement, therefore, Kimura supposed that Mahayana Buddhism was a development of the internal factors that already existed in the original teaching of the Buddha.

Just like the works of Inoue Enryō and other modern Buddhist thinkers (including Entsu), Kimura's original Buddhism was also derived from a critical concern which pursued a way to solve the contradiction between religion and modernity, especially the

---

<sup>28</sup> Kimura Taiken, *Genshi Bukkyō shisō ron*, vol.3 of *Kimura Taiken zenshū* (Tokyo: Daihōrinkaku, 1968), 9-10.

contradiction between religious faith and scientific knowledge. In the article that he wrote as an answer to the scientific criticism of Buddhism made by a Japanese scientist, Kimura explains the relation between Buddhism and science as follows:

It is obvious in the case of Tibetan Lamaism. However, it is also known that even the Chinese and Japanese Buddhist faiths include phenomena that are not so different from the malicious religion (*inshi*), at least at the level of popular practice. This is a reason why Buddhism was severely criticized by Christianity as idolatry. Since all of them nominally belong to Mahayana Buddhism, we cannot deny the criticism that Buddhism became unscientific at the time of the development of Mahayana Buddhism. . . Just because it (Buddhism) has no metaphysical and doctrinal foundation, Buddhism can be the most philosophical religion. However, we have to frankly admit that it includes many unscientific factors at the level of actual practice. Therefore, we have to sincerely accept the criticism of scientists and investigate these issues. Of course we have to decisively reject their arrogation and misunderstanding, but at least on the issues that belong to the realm of scientific argument, we should try to wash out the unscientific factors as much as possible. This is solely a way to fit Buddhism to the ideas of modern people.<sup>29</sup>

In order to "wash out" unscientific factors from Mahayana Buddhism, Kimura studied original Buddhism that supposedly did not include these factors and tried to purify the unscientific factors of the Mahayana Buddhism by comparing it with the original form of Buddhism. Therefore, Kimura's original Buddhism was also an attempt to rationalize Buddhism in terms of modern scientific and philosophical discourse. For Kimura, the original Buddhism at the time of the Buddha was "a criterion for washing out the turbid Mahayana Buddhism" and therefore, the study of original Buddhism can be a basis for reconstructing Buddhism as a modern religion. Kimura calls this attitude for the study of Buddhism *Genshi Bukkyō shugi* (original Buddhism).

Kimura also calls the thought movement that purifies Mahayana Buddhism using original Buddhism as a "refrigerant (*seiryōzai*)" the Neo-Mahayana Buddhist movement (*shin daijō undō*). For Kimura, going back to original Buddhism was also going back to the pure form of Mahayana Buddhism that was in Buddha's original and pure teaching.

---

<sup>29</sup> Kimura Taiken, "Genshi Bukkyō shugi no teishō: kagaku to shūkyō no shōtotsu mondai yori," *Chūō kōron* (1923, April): 186-187.

Kimura explains the significance of the study of original Buddhism for the Neo-Mahayana Buddhist movement in the following five propositions:

- 1) Original Buddhism has to be a standard and driving force of this purification movement.
- 2) It (original Buddhism) has to hold a scientific and critical attitude.
- 3) When original Buddhism is truly understood, the need for purification of its diffused form naturally appears.
- 4) This is not a revision against the will of the founder, but an attempt to follow the true intention of the founder.
- 5) Therefore, we insist that the purification of Mahayana Buddhism is the return to original Buddhism, that is, to return to the Buddha.<sup>30</sup>

In this sense, Kimura's original Buddhism was also a reconstruction of the traditional Buddhist teaching in terms of modern scientific and philosophical discourse. On this point, Kimura's original Buddhism shares a similar motivation and discourse with the works of Inoue Enryō and Fumon Entsu.

#### *Kimura Taiken's Buddhist Cosmography*

Of the various problems of traditional Buddhist teachings raised by modern science, the issue of the Shumisen worldview was one of the most serious for the modern Buddhist. Kimura Taiken also dealt with the issue of the Buddhist worldview in his *Shōjō Bukkyō shisō ron* (Study of the Hinayana Buddhist thought), which was a philosophical reconstruction of the Buddhist thought in the Abhidharma texts.<sup>31</sup> Kimura titled the third chapter of this work "the worldview (*sekaikan*)" and explained the worldview of the Abhidharma teaching in detail in comparison with the worldview of the Brahmanic teaching. First of all, Kimura defines "worldview" not as cosmology (*Weltanschauung*), but as cosmography (*seki genshō ron*). In other words, his object of study here was not a subjective meaning of the world, but an objective description of the material world in the Abidharma sutras. As frequently mentioned in this dissertation, the material world system

---

<sup>30</sup> Kimura, "Genshi Bukkyō shugi no teishō," 200.

<sup>31</sup> Kimura Taiken, *Shōjō Bukkyō shisōron*, vol. 5 of *Kimura Taiken zenshū* (Tokyo: Daihōrinkaku, 1968), 269-363.



described in the Buddhist scriptures is the flat world locating Mt. Sumeru at the center of the world. We have been calling this world system the Shumisen world (*shumikai*) following the term used by the Bonreki scholars. Kimura systematically explains this Shumisen world mainly based on *Abhidharma-kośa-bhāṣya*.

According to Kimura, the description of the Shumisen world system in *Abhidharma-kośa-bhāṣya* represents the peak of the development of the Abhidharma teaching, and was the basic model of the later development of the Mahayana Buddhist worldview. Therefore, the description of the Shumisen world system in *Abhidharma-kośa-bhāṣya* represents the material worldview of all of Buddhism. Following this idea, Kimura describes the Shumisen world system in *Abhidharma-kośa-bhāṣya* as representative Buddhist cosmography shared by all Buddhist thought.

For Kimura who presupposes the philosophical purity of the original teaching of the Buddha, however, the description of the flat world system which is not acceptable by modern scientific standards cannot be ascribed to the Buddha. He explains the meaning of the factual worldview of Buddhism as follows:

When Buddha revealed the meaning of the world, he sometimes had to mention the issue of the factual world, though it was not his purpose, because it was impossible to discuss only the meaning of the world without mentioning factual phenomenon. Therefore, Buddha occasionally mentioned factual issues referring to his contemporaneous worldview. . . This is the origin of the observation of the factual world in Buddhism. . . Anyway, it is not doubted that Buddha adopted the worldview which was popular in a certain region of his time for the convenience of explanation. Since it is not Buddha's purpose to explain it (the factual worldview), there is no particular reason to ascribe its origin to the Buddha. . . The factual worldview of primeval Buddhism was undoubtedly based on the common scientific knowledge at that time.<sup>32</sup>

If the Shumisen worldview is not an original idea of the Buddha, there will be no reason to criticize the teaching of the Buddha because of it. If he were born in the modern period, the material worldview of Buddhism should have been described in terms of modern scientific

---

<sup>32</sup> Kimura, *Shōjō Bukkyō shisōron*, 270-271.

standard.<sup>33</sup> In order to make this point clear, Kimura describes the mythical worldview of the Brahmanic teaching and explain the Shumisen worldview in comparison with the traditional Indian worldview.

The material worldview described in *Abhidharma-kośa-bhāṣya* is divided into three different realms (*sangai*): the realm of desire, the realm of form, and the realm of non-form. Kimura starts with the description of the realm of desire. Using the information about the components of the Shumisen world as a data base, Kimura describes the flat world system of Buddhism. First of all, the nine mountains and eight seas that are the main components of the Shumisen world are described one by one with information about the size and location. Kimura explains the arrangement of these mountains and seas using a section view of the Shumisen world (Figure 86). Moreover, he explains the entire system of the Shumisen world using a pictorial explication (Figure 87). In this image of the Shumisen world titled *Kusenhakkai shishū no zu* (the picture of the nine mountains, eight seas, and four islands), Kimura seems to be trying to produce a faithful representation of the information about the Shumisen world system given in *Abhidharama-kośa-bhāṣya*. The distance and the width of the mountains are each reduced by half. The shape of each component of the Shumisen world is described as corresponding to the information in *Abhidharma-kośa-bhāṣya*. Unlike Entsū's model of the Shumisen world, it is not depicted as a geographical model with a calculated reduced scale. However, Kimura's picture of the Shumisen world is highly similar to Entsū's model in many ways.

Kimura also explains the four islands in the outermost sea in detail and shows the construction of Mt. Sumeru with the section view (Figure 88). Then he explicates the movement of the sun and the moon and the system of seasonal changes using a pictorial explanation derived from the astronomical information in *Abhidharma-kośa-bhāṣya* (Figure 89). He explains the calendar system in *Abhidharma-kośa-bhāṣya* by frequently referring

---

<sup>33</sup> This is a representative case of the tricky logic of the modern Buddhists. They always take the Buddha and the founders of the Buddhist sects away to the modern period, inspite of the fact that they never lived in or even imagined to live in the modern period.

to modern astronomy and calendar system. This description of the movement of the heavenly bodies is similar to that of Entsū's Bonreki theory. In the following sections, Kimura also explains the realm of hell (*jigoku*), the realm of heaven (*ten*), and the cycle of the four cosmic aeon (the *kalpas* of creation, existence, destruction, and annihilation). Presupposing that there is no cosmogony featuring the will of supernatural beings in Buddhism, he explains the Buddhist idea of the vast cosmic aeon as a natural cycle of the emergence and destruction of the universe.

The description of these factual world systems can be found in early Buddhist texts, even in the Agama sutras. For Kimura's original Buddhism, however, these unscientific explanations of the world system could not have been original thoughts of the Buddha who was supposed to be a pure philosopher. Therefore, the Shumisen worldview of Buddhism "is not necessarily an original Buddhist thought, but a simple remodeling of the conventional idea in a Buddhist way."<sup>34</sup> In the process of this denial of the "unscientific" factors, the meaning of the Buddhist worldview which had a significant meaning for popular Buddhist faith (for example, the realm of the hell) was turned into a simple model of ethical explanation. Kimura concludes that "this worldview mainly seems primitive from today's point-of-view as long as we consider it as an issue of existence (*Sein*). But if we deal with this worldview as an issue of oughtness (*Sollen*), it seems to include a significant lesson."<sup>35</sup> The description of the factual world system in the Buddhist scriptures was now turned into the explanation of the world that exists only within the text.

#### *Kimura's Buddhist Cosmography and Bonreki*

Kimura's perspective that considered the Shumisen world as the world within the text is different from that of Entsū who tried to verify the accuracy of the description of the Shumisen world system in the Buddhist scripture as a scientific explanation of the real

---

<sup>34</sup> Kimura, *Shōjō Bukkyō shisō ron*, 362.

<sup>35</sup> *Ibid.*, 363.

world. However, at the level of their ways of describing the Shumisen world (or cosmographic discourse), there are many similarities between them. For example, Kimura's pictorial explanation of the system of the Shumisen world is almost identical with Entsū's model of the Shumisen world (Figure 62). Even though this picture on the hanging scroll is depicted from an oblique angle, if we see this model from the top, it looks just like Kimura's picture. One of Entsū's disciple, Ankei, explained the Shumisen worldview with a picture of the Shumisen world in his work published in 1858. This picture titled *Shumikusen hakkai no zu* (Picture of the nine mountains and the eight seas in the Shumisen world) is extremely similar to Kimura's picture, although Ankei's picture locates the southern Enbudai island at the top of the picture while Kimura locates it at the bottom (Figure 90).

As we examined in Chapter 4, Entsū's model of the Shumisen world was depicted by converting the information in the Buddhist scripture to a geographical (or cosmographical) data base. This adoption of modern scientific discourse for writing the world (or the universe) made Entsū's cosmography different from the previous Buddhist cosmographies. Kimura's picture of the Shumisen world shares many discursive modes with this model of Entsū. For example, the world of desire that mainly consists of the nine mountains and the eight seas is separated from the realms of form and non-form. Just like Entsū's model of the Shumisen world that we examined in Chapter 4, the Shumisen world system is depicted as an independent world system that is separated from the wider ideal worldview. It should be noted that Kimura followed the style of Buddhist cosmography which was produced as a reaction to the modern scientific worldview. While Entsū's model of the Shumisen world was the Buddhist cosmography constructed through modern scientific discourse, Kimura's picture of the Shumisen world was also a cosmography depicted through modern scientific discourse. To reject and to accept the modern scientific worldview are not so different considering that both attempts are based on comparison with the modern scientific worldview. Without the concept of the real world, we can neither preserve the Shumisen

worldview as a representation of the real world nor reject it as a representation of the unreal world.

Another stylistic similarity between Entsū's model and Kimura's picture of the Shumisen world is the faithful representation of the information in the Buddhist scripture. Both of them are a pictorial explanation of the Shumisen world system regarding the information about the Shumisen world as an ancient scientific knowledge, although being "ancient" has a positive value for Entsū, but it has a negative value for Kimura. As long as we follow this style of depicting the Shumisen world, there is no room for a metaphorical representation of the Buddhist worldview. Mt. Sumeru is supposed to be a mountain that exists as an extension of everyday life experience and it cannot be depicted in this context as a metaphorical symbol, such as a cosmic tree or a cosmic pillar (Figures 81 and 91). Mt. Sumeru has to be a mountain that has a specific size and form. This mountain was preserved as a real mountain in Entsū's model and rejected as an unreal mountain in Kimura's model. Even though their basic presuppositions on the plausibility of the ancient science are different, Entsū's cosmography and Kimura's cosmography are the same on the point that they can never metaphorically depict Mt. Sumeru, as long as they use the information in the Buddhist scriptures as a scientific data base. Because of the fact that we cannot find any pictorial explanation of the Shumisen world system like Entsū's and Kimura's models before the early modern period, their cosmographic discourse provides us with an interesting insight into considering the characteristics of modern Buddhism. Moreover, the ideas of Indian origin and generalization of the Buddhist worldview are the discursive modes shared by both Entsū's and Kimura's models of the Shumisen world.

It is an interesting fact that the Bonreki scholars who tried to preserve the Shumisen worldview as a true and original teaching of the Buddha, and Kimura Taiken who tried to eliminate this unscientific factor as an unessential teaching of the Buddha share a similar cosmographic discourse. To verify the existence of the Shumisen world in terms of the modern scientific discourse and to eliminate the Shumisen worldview in comparison with

the modern scientific worldview are two sides of the same coin. In the same discursive mode, Entsu reconstructed the ancient science and Kimura denied the ancient science. If the Shumisen worldview in the Buddhist scriptures is an ancient scientific knowledge and it has nothing to do with the original religious truth revealed by the Buddha, there will be no reason to preserve it as an essential teaching of Buddhism. Kimura's proposal to consider the Shumisen worldview not as an issue of existence (*Sein*), but as an issue of oughtness (*Sollen*), is following this idea.

This distinction between this worldly knowledge and the religious truth already existed before the modern period as a difference between the popular practice and the elite teaching. Just as *Abhidharma-kośa-bhāṣya* describes the Shumisen world as a product of the mental creative power of the sentient beings, it is possible to insist that the factual worldview of Buddhism was an illusory world only described for ethical explanation, even in the premodern period. However, there is a significant difference between the premodern interpretation of the Shumisen worldview as an illusion and the denial of the Shumisen worldview in terms of modern scientific discourse. While the Shumisen world was interpreted as an illusion because it was so real in the former case, the Shumisen worldview was denied as unreal in the latter case. In the case of Kimura's understanding of Buddhism, the worldview that is denied as an illusion is the modern scientific worldview that has nothing to do with transmigration, that is, with human action. While Kimura considers that replacing the ancient scientific worldview with the modern scientific worldview causes no change in the original teaching of the Buddha, the meaning of the world interpreted in terms of the former is significantly different from the meaning of the world in the context of the latter. Referring to the existence including both "oughtness" and "existence" and referring to the existence only as "existence" are a completely different things. Here the issue of the oughtness becomes a purely inner issue that is separated from the outer world, because the Shumisen world is no longer the real world and it has nothing to do with the subjectivity of people. The Shumisen world now exists only within the text.

## **The World within Mind: Modern Landscape and Subjective Faith**

### *Kiyozawa Manshi and Seishin shugi*

Kiyozawa Manshi was born in 1863 as a son of an ex-warrior of the Owari clan. In 1874, he entered a foreign language school and later studied at a medical school. Then he entered the private school of the East Honganji in 1878 and he was ordained in the same year. Just like Inoue Enryō, Kiyozawa was sent to Tokyo in 1881 to study at Tokyo Imperial University and became a matriculated student of the philosophy department in 1883. After graduating from the university in 1887, he entered the graduate school and studied philosophy of religion. Unlike Inoue Enryō who worked outside of the East Honganji sect (later the Shinshū Otani sect), Kiyozawa spent the rest of his life as a sectarian activist and thinker. He was married with Kiyozawa Yasu in 1888 and became a resident priest of Saihōji in the Mikawa region. Kiyozawa became a principal of Kyoto Junior High School in the same year and actively worked for the reformation of the educational system of the Otani sect. In 1896, he started a reformation movement of the Otani sect with other members, such as Imagawa Kakushin and Inaba Masumaru. They published a private periodical and organized a nationwide association for the reformation movement. However, this reformation movement collapsed within one year.

After the failure of this movement which requested the organizational and institutional reform of the traditional sectarian system and the introduction of a parliamentary system, Kiyozawa changed his direction from systematic reformation to the reformation of the faith of individual believers. After a few years of suspension, he was invited by Shinshū University, which was moved to Tokyo in 1899, and became its president. He lived with his students, who became significant members of the Otani sects later, and named their lodging *Kōkōdō*. They started publishing the periodical titled *Seishinkai* (Spiritual world) from this lodging. The intellectual activities which emerged from this community and the

periodical are often called *Seishinshugi undō* (Spiritualism movement), and this movement is generally considered a representative modern religious thought movement in Japan.

Kiyozawa Manshi published an article titled "*Seishinshugi* (Spiritualism)" in the first issue of *Seishinkai*. and published many articles relating to this subject. He also frequently made public lectures titled "*Seishinshugi*" and "*Seishin kōwa* (lecture on spirit)". The Spiritualism (*seishinshugi*) was a thought movement inspired by Kiyozawa's faith that was revealed in these articles and lectures. In "*Seishinshugi* (in the first issue of *Seishinkai*)," Kiyozawa defines his Spiritualism as follows:

In order for us to live in the world, there should be a perfect standpoint. . . If so, how can we gain the perfect standpoint for life. There is no other way than relying on the absolute and infinite being. . . The path of the development of the spirit that gained this standpoint is therefore called *Seishinshugi* (Spiritualism).<sup>36</sup>

Kiyozawa's Spiritualism was first based on the establishment of subjective religious faith. Since it was based only on subjectivity, it was free and never deluded by outer existence.

Kiyozawa learned to rely on *nyorai* (*tathagata*) as the absolute and infinite being through the failure of the reformation movement and his incurable medical condition (he had been suffering from tuberculosis since 1894). He studied the spirit of renouncing the world from the Agama sutras and revealed this spirit in his conviction which attached the most significance to the establishment of individual faith. He also learned to gain freedom by believing in the limitation between "the things that can be changed by the will" and "the things that cannot be changed by the will" from the book of the Roman stoic, Epictetus (*Discourse of Epictetus*). Following this idea, he constructed a subjectivist religious faith (in the sense that the objective beings too become a subjective matter in front of the light of *nyorai*).<sup>37</sup>

Kiyozawa also discussed Spiritualism in relation to practical issues as follows:

---

<sup>36</sup> Akegarasu Haya and Nishimura Kengyō, eds., *Kiyozawa Manshi zenshū*, vol. 6 (Kyoto: Hōzōkan, 1955), 2.

<sup>37</sup> Kiyozawa Manishi often called *Tannishō*, Agama sutras, and *Discourse of Epictetus* his three fundamental scriptures (*sanbukyō*).



- 1) Spiritualism has completely nothing to do with objective matter (for example, the development of material civilization). It is to prevent the harm of struggle and competition and to solve the problem of luxury.<sup>38</sup>
- 2) Spiritualism is a practical thought and it is not a system of contemplative theory (it should be distinguished from idealism and other theories of philosophy)<sup>39</sup>
- 3) Spiritualism has nothing to do with a doctrine. It never disturbs the ideas of people at the level of doctrine and it also never objectively judges good and evil or right and wrong at the level of actual practice.<sup>40</sup>
- 4) Spiritualism is a principle in which the relative is mingled with the absolute and the limited is united with the unlimited (therefore it relies on the other).<sup>41</sup>
- 5) Spiritualism is a resignation (*akirame shugi*) toward the past, a principle of peaceful living (*anjū shugi*) for the present, and a principle of efforts (*funrei shugi*) toward the future.<sup>42</sup>

For Kiyozawa, the Spiritualism was a principle based on religious truth that transcended cultural and social values. Kiyozawa's Spiritualism was an ism that revealed his practical faith as a believer of Pure-land Buddhism, and therefore it was different from the dharma preservation theory or the anti-Christianity theory in his period that explained Buddhist thought as ethical value in terms of modern philosophy and science.

Kiyozawa severely criticizes theories evaluating religion in terms of modern scientific and philosophical discourse and opinions featuring ethical values of religion. For Kiyozawa, the essence of religion is an eternal and unchangeable value that has nothing to do with cultural and social change. To explain absolute religious truth in terms of relative knowledge is to restrict the true meaning of religion. This elimination of the explanation of religion using modern scientific and philosophical framework seems to represent his basic attitude that tried to discuss religious issues at the level of individual religious experience. Spiritualism was an expression of Kiyozawa's practical religious faith which he established through his own individual experience.

In May of 1902, Kiyozawa's eldest son, Shinichi, passed away at the Kōkōdō. Kiyozawa's wife, Yasu, also passed away in October of the same year. Because of

---

<sup>38</sup> Akegarasu and Nishimura, eds., *Kiyozawa zenshū*, vol.6, 17-20.

<sup>39</sup> *Ibid.*, 29-32.

<sup>40</sup> *Ibid.*, 61-65.

<sup>41</sup> *Ibid.*, 32-35.

<sup>42</sup> *Ibid.*, 39-42

administrative problem of the university, he resigned as president of Shinshū University in the same month and went back to his temple in the Mikawa region in November for the medical treatment of tuberculosis. He confessed his feelings at this time as follows:

Everything was broken down this year. The school was broken down. The wife and the son were broken down. Next it will be my turn to be broken down.<sup>+3</sup>

However, these disasters never undermined his religious conviction revealed as Spiritualism. In his diary recorded of December 3, 1902, he expressed his feeling as follows:

Following Spiritualism, we can find the light of grace in any situation. The decision to do something solely depends on individual intention. But after carrying out that decision, we should be satisfied with the result of that decision.<sup>+4</sup>

Because of the consecutive disasters, the death of his family members, the failure of educational reform, and the worsening of his medical condition, he rather deepened his religious conviction. His medical condition did not become better even after his return to his temple and he passed away in 1903 at the age of forty one.

Kiyozawa Manshi's religious faith was deeply rooted in his activity and experience as a member of a certain religious group. In this sense, Kiyozawa's Spiritualism was to refigure the meaning of the Buddhist faith for the people who live in modern society in a different way than the philosophical and scientific signification of Buddhist thought which was popular in his period. Through the struggle with his severe living conditions, he established his thought as an individual religious conviction of the person living in modern Japanese society. Therefore, Kiyozawa's Spiritualism did not exist to logically explain the meaning of Buddhist thought in terms of modern science and philosophy. He just tried to show how the Pure-land faith that he believed in had significant meaning for solving the problems that emerged from the life of modern people, referring to his own experience as a

---

<sup>+3</sup> Akegarasu and Nishimura, eds., *Kiyozawa zenshū*, vol. 8, 565.

<sup>+4</sup> Akegarasu and Nishimura, eds., *Kiyozawa zenshū*, vol. 7, 478.

modern religious believer. This religious conviction, which attached the most significance to the establishment of individual faith, paved the way for the transition from practice or form to faith, the separation of the Buddhist faith from popular belief, and the transition from the faith of the household to the individual faith. In this way, Kiyozawa's Spiritualism had a strong influence on the later development of the Otani sect.<sup>45</sup> Moreover, Kiyozawa's religious conviction as a "modern Buddhist (not as a scholar, but as a believer)" has generally been considered one of the first cases of the establishment of "modern religious faith" in Japan.<sup>46</sup>

### *Spiritualism and Buddhist Worldview*

The basic project of Kiyozawa's Spiritualism was to reinterpret the meaning of the Pure-land Buddhist faith through his own religious experience and activity. In this context, therefore, the meaning of Buddhist thought can never be reduced to philosophy nor ethics. In one of the series of lectures titled *Seishin kōwa* (lectures on spirit), Kiyozawa clearly distinguishes objective explanation of religious thought from subjective faith as follows:

The person who seeks for religion often asks for an explanation of the object of faith and the existence of Amida Buddha as a primary issue. Of course it is fine to have an explanation. But even if the object of faith is contingently given and the existence on Amida Buddha is certain, it has no meaning without believing it. And when it is certainly believed, there is no need of various arguments and explanations. The absolute and infinite object and the unthinkable *nyorai* (in this case Amida Buddha) cannot be fully argued and explained. Therefore, it is a delusive idea to objectively study it and rely on (the objective explanation). We cannot prove the objective existence of the infinite *nyorai*, but it is impossible for us to perceive the appearance of the great mercy of *nyorai* within nothing other than our religious faith. For us, there is no *nyorai* other than the single mind of faith. That is why we call our faith the Spiritualism.<sup>47</sup>

---

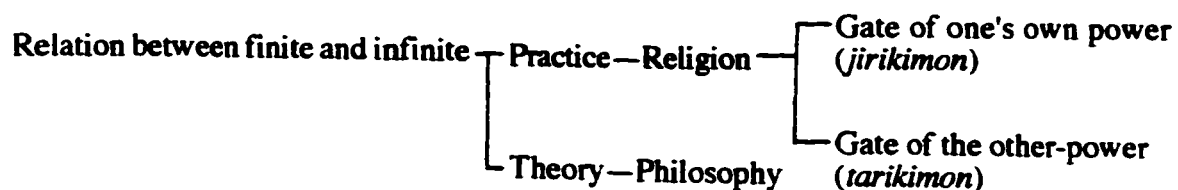
<sup>45</sup> For the influence of Kiyozawa's Spiritualism on the institutional reform of the Otani sect, see Okada Masahiko, "Kindaini okeru shūkyō dentō no henyō," *Shūkyō kenkyū* 286 (1990) and "Kiyozawa Manshi to Otaniha," *Taishōdaigaku kenkyū kiyō* 15 (1991).

<sup>46</sup> Wakimoto Tsuneya, *Hyōden Kiyozawa Manshi* (Kyoto: Hōzōkan, 1972) is the representative work which takes this point of view.

<sup>47</sup> Matsubara Yūzen and Terakawa Shunshō, eds., *Teihon Kiyozawa Manshi bunshū* (Kyto: Hōzōkan, 1979), 139-140.

Objective explanation is always relative and it can never reach transcendent religious truth. The absolute and infinite being can never be fully explained. It is captured only through subjective faith. For Kiyozawa, scientific and philosophical signification of Buddhist thought is always a partial explanation and the real meaning of religious thought is located in a different place. In this sense, Kiyozawa tried to solve the common issue of the modern Buddhist, that is, the conflict between modern science or rationalism and religion, in a way different than Inoue's and Kimura's reinterpretation of Buddhist thought. In the case of Inoue, it was emphasized that Buddhism was the most rationalistic religion in terms of modern scientific and philosophical discourse, while he held a distinction between absolute religious truth and relative scientific knowledge. In Kimura's case, the ancient science of the Buddhist scriptures was considered an unessential teaching that could be replaced by the modern and more advanced science. Kiyozawa takes a more radical attitude to this issue.

In his philosophical study of religion, Kiyozawa explains the relation between religion, philosophy, and science. For example, in the article titled *Truth and religion*, Kiyozawa says that there is no fundamental principle to judge the true or untrue, because none of the relative human beings has this fundamental principle. And this fundamental principle can never be determined by empirical judgment either, because every empirical knowledge is basically relative. Following this idea, Kiyozawa insists that any scholarly explanation cannot fully cover religious truth.<sup>48</sup> On the relation between philosophy and religion, Kiyozawa schematizes their relationship as follows:



<sup>48</sup> Terakawa and Matsubara, eds., *Kiyozawa bunshū*, 190-200.

<sup>49</sup> *Ibid.*, 205

For Kiyozawa, religious truth should be captured at a practical level and it is qualitatively different from philosophical knowledge that theoretically pursues the truth. In the article titled *Religion and Civilization*, Kiyozawa explains the relation between religion and science proposing the opinion that religion is destined to disappear in the process of the development of modern science:

The principle of science is study and the principle of religion is faith. Study and faith can be harmonized and they never contradict one another. Just as the attraction between things in the universe is never changed despite the discovery of the law of gravitation. Just as our mental activity itself is never changed before and after the construction of psychology and physiology. With or without scientific knowledge, the religious needs and the satisfaction of these needs can sufficiently exist. . . In ancient times, the ancient scholarly knowledge carried religious faith. In the present time, today's scientific knowledge should be able to carry religious faith. . . It is a completely different issue from the theory of the ruin of religion whether we should take either the old knowledge or the new knowledge. Whichever knowledge we take, it already presupposes the coexistence of "knowledge" and "faith."<sup>50</sup>

In this article, Kiyozawa clearly separates scientific knowledge from religious faith. For Kiyozawa, the development of civilization is a transition from the old knowledge to the new knowledge and it has nothing to do with the judgment of religious truth. The problem of Buddhist worldview is also explained in the same context:

Scientific knowledge seems to attack the unessential part without paying attention to the truly fundamental issue. The idea of hell in various religious traditions is an example. Examining this idea in terms of scientific knowledge, the idea of the hell should be instantly destroyed. However, the idea of the hell at the level of religious explanation is based on another fundamental principle, that is, the principle of causality. Since this fundamental principle cannot be fully explained, (the idea of the hell) was forged as an explanation and (the idea of causality itself) has no need of such an unessential explanation. Just because people featuring scientific knowledge directly criticize the existence of the hell, they mistakenly think that the simple elimination and destruction of it is enough for the criticism. However, once those scientists know the fundamental principle behind that idea, they should notice the need to replace the old idea of hell with the new idea of hell (or the complementary theory that corresponds to the old idea).<sup>51</sup>

---

<sup>50</sup> Terakawa and Matsubara, eds., *Kiyozawa bunshū*, 212-213.

<sup>51</sup> *Ibid.*, 213-214.

For Kiyozawa, every cosmographical explanation in the Buddhist scriptures is an unessential explication for the fundamental principle. Therefore, the fact that the Buddhist worldview constructed within the ancient culture cannot compete with the modern scientific worldview has no meaning for the Buddhist faith. For Kiyozawa, religion is not an objective fact, but a subjective fact. The Buddhist worldview conflicts with the modern scientific worldview only when subjective religious faith is confused with objective knowledge. For Kiyozawa, "We do not believe in the Pure-land and hell because they exist. When we believe in the Pure-land and hell, they exist for us." This subjective reinterpretation of the Buddhist worldview had a strong influence on the later development of the modern Buddhist discourse. Even though Kiyozawa was not the first person who introduced this idea, his Spiritualism was the most clear case of the subjective interpretation of the Buddhist worldview.

In this context, the Shumisen worldview as the old scientific knowledge is no longer an essential teaching of Buddhism. It can be replaced by the new knowledge without any problem. Kiyozawa explains this issue as follows:

In a period like today in which science and ethics are highly developed, to correct the mistakes of knowledge in the previous period and to complement the shortage of ethics in the previous period is a necessary procedure as a correction based on the development of science and ethics. However, no matter how the corrections and complements like these have been done, the true essence of religion (*shūkō no honryō*) can never be changed and complemented. For example, the geocentric astronomy of the ancient religion has to be changed to the heliocentric today. Even if a correction like this is made in the realms of astronomy and ethics, the true essence of religion cannot be changed because of this correction. Even in the case of scientific and ethical factors that appeared in the religious teaching, we can say this. Therefore, it is obvious that we can freely change rituals and manners that have nothing to do with scientific and ethical issues.<sup>52</sup>

For Kiyozawa, the traditional Buddhist worldview is nonessential factor that can be replaced by new theory, and in spite of the transformation of the appearance of religion, the true essence of religion can never be changed. Therefore, we can take any cosmographic

---

<sup>52</sup> Matsubara and Terakawa, eds., *Kiyozawa bunshū*, 218-219.

explanation without changing the essence of the Buddhist thought. In his subjective interpretation of religious faith, the world became an outer world that has nothing to do with inner religious faith. Now cosmography (description of the world system) and cosmology (the meaning of the world) are completely divided and the world becomes a place located outside of the inner subject. In this context, the Shumisen world no longer exists even within the text. For Kiyozawa, the Shumisen worldview as an ancient scientific explanation of the world system has no relation with Buddhist faith, just as the modern scientific explanation of the world system has no relationship with religious faith.

#### *Outside World and Inner Faith*

For Kiyozawa Manshi's subjective interpretation, whether it is the Buddhist worldview or the modern scientific worldview, the description of the objective world has no relationship with religious faith which is a purely subjective issue. The world is now described as an outer system that has nothing to do with the inner subject. In this context, the Shumisen worldview becomes a nonessential and supplemental teaching derived from the ancient scientific description of the objective world system. Kiyozawa explains this status of the Buddhist worldview as follows:

The essential teaching of the Buddha Śākya-muni can never be changed according to the shift in the time and context. But in the case of the supplemental explanation of this essence, if the Buddha was born in Greece or he was born in today's world that is three thousand years later, he should have surely taught a different explanation than the teaching in the transmitted Buddhist scriptures.<sup>53</sup>

In Kiyozawa Manshi's Spiritualism, Buddhist worldview completely lost meaning as a Buddhist teaching. On this point, it is different from Entsū's Bonreki, which tried to preserve the Shumisen worldview as an essential teaching of the Buddha. However, Kiyozawa's understanding of the Shumisen worldview as an ancient science is similar to Entsū's model of the Shumisen world. Entsū also regarded the Shumisen worldview as an

---

<sup>53</sup> Matsubara and Terakawa, eds., *Kiyozawa bunshū*, 199.

ancient scientific description of the world and constructed a model of the Shumisen world as an objectively existing system. For example, in Entsu's model of the Shumisen world, the movement of the heavenly bodies was explained as a system that has nothing to do with the fate of people and the far distant realms of the world were described as places that can be seen through a telescope.

Kiyozawa denied the objective verification of the Buddhist worldview and explained issues closely related to religious faith, such as the Pure-land and the hell, as subjective existence. Entsu's model of the Shumisen world also never discussed the existence of realms beyond empirical explanation. In Entsu's Bonreki theory, the Buddhist worldview was constructed as an objectively described system at the level of modern scientific discourse. Therefore, the world is described as an "extended substance" that has no relation with human action and intention. This cosmographic discourse (the way of writing the universe), derived from modern scientific discourse, is also a precondition of Kiyozawa's subjective interpretation of the Buddhist worldview. Because Entsu's model of the Shumisen world was the first Buddhist cosmography that described the Buddhist worldview not as a meaning of the world (*Weltanschauung*), but as a figure of the world (*Weltbild*), and this was also a basic perspective of Kiyozawa Manshi who regarded the Shumisen worldview as an ancient scientific figure of the world and denied it as a theory that had nothing to do with the meaning of the Buddhist faith. Without the concept of the world as extended substance that is separated from the inner subject, there will be no subjective religious faith that has nothing to do with the external world. In this sense, Kiyozawa's Spiritualism was also a product of the encounter with modern scientific discourse.<sup>54</sup>

---

<sup>54</sup> Karatani Kōjin, *Origins of Modern Japanese Literature* (Durham and London: Duke University Press, 1993) indicates a correspondence between the emergence of modern landscape and the emergence of the idea of inner subjectivity. Kiyozawa's establishment of the inner faith could be explained as a similar phenomenon



## Modern Buddhism and Bonreki: The First Modern Buddhism

Kiyozawa Manshi outlines the conflicts between modern science and Buddhist thought in the development of the modern Buddhism after the Meiji restoration as follows:

At the time of the Meiji restoration, religion was almost forgotten due to the great political confusion. When the religious issues started to be discussed again due to the tranquility of society, the Shumisen worldview and the creation of the universe became a focus of discussion. It is well known that people like Sada Kaiseki and Toku Ankei actively worked for defending the Shumisen worldview in the Buddhist scriptures. . . In the situation at the time, people did not understand the fact that even though the system of the world and the organization of things have to be studied at the level of scholarly theory, any theory was fine for religion. However, it was naturally changed, and the attempts to evaluate Buddhism and Christianity in terms of the discussion of astronomy and theory of creation gradually disappeared. Instead of that, there emerged the attempts to evaluate religion in terms of philosophical issues, such as the eternity of soul, monotheism, and *shohō jissō* (all things are the ultimate reality). . . However, the evaluation of religion based on the interpretation of philosophical issues is gradually declining nowadays. Instead of that, there emerged the tendency to evaluate religion in terms of the social benefit and the ethical value. It is claimed that the religion not producing a social benefit is meaningless and harmful and the religion not inspiring an ethical value is meaningless and harmful. . . These attempts are the misunderstanding of religion. Because only if we enter through the gate of religion and realize that religion has a different world than social benefit and ethical value, we will have no need to criticize religion from the outside of the gate. This is exactly the standpoint of Spiritualism. Therefore, Spiritualism never sets the standard outside of the gate, but sets the standard inside of the gate. It never pays attention to the objective construction and focuses on the subjective mind.<sup>55</sup>

These four types of response to modern science correspond to the works of Sada Kaiseki, Inoue Enryō, Kimura Taiken, and Kiyozawa Manshi that we examined in this chapter. In an article entitled "Modern development of the idea of the Pure-land," Kashiwara Yūsen regards this statements of Kiyozawa as a historical description of the development of modern Buddhist thought.<sup>56</sup> However, to attach importance to subjective faith does not necessarily require these preceding arguments. Kiyozawa's four types of interpretation of religion that was inspired by the confrontation with modernity (the scientific verification, the philosophical explanation, the ethical evaluation, and the subjective transcendence) are

---

<sup>55</sup> Matsubara and Terakawa, eds., *Kiyozawa bunshū*, 21-22. Kiyozawa takes up the work of Inoue Enryō as an example of the philosophical evaluation of Buddhist thought.

<sup>56</sup> Kashiwara Yūsen, "Kindai niokeru jidokan no sui," in vol. 8 of *Ronshū Nohon Bukkyōshi* (Tokyo: Yūzankaku, 1987).

synchronously emerging arguments. In fact, Kashiwara tried to set a historical order in the above mentioned article, but he obviously admits that it is impossible to do it, because there is no particular time period in which a particular type of argument became dominant.<sup>57</sup> Only the argument of the Bonreki scholars seems to disappear in the later period, but the scientific verification of Buddhist thought itself has never disappeared. If they were not able to be arranged in a historical order, we should rather focus on the common discourse of these arguments than set a historical order and emphasize their difference. Without the encounter with modern scientific discourse, all of them could not have existed. On the point that they struggled with similar modern issues and they were restricted by these modern issues, all of these theories were modern religious discourse, at least when taken at the level of their cosmographic discourse. If so, we cannot consider the Bonreki theory as a simple reaction of the Buddhist traditionalism to modernity that had nothing to do with modern Buddhism. As the first attempt that problematized the Buddhist worldview at the level of the modern scientific discourse, the Bonreki theory has a significant meaning for considering the modern Buddhist thoughts.

#### *Bonreki as the First Modern Buddhism*

In Chapter 5, we examined the modern characteristics of the Bonreki movement focusing on the historical development of the Bonreki theory, and in this chapter, we considered the discursive similarity between the Bonreki theory and modern Buddhism examining the cosmographic discourse of modern Buddhist thinkers. As a result of this examination, we could find some archetypal discursive modes of the later development of modern Buddhism in Entsu's Bonreki theory, at least on the issue of the struggle between religion and science. Entsu's Bonreki theory was one of the first Buddhist thoughts in

---

<sup>57</sup> Kashiwara Yūsen, "*Kindai niokeru jōdōkan no suii*." His historical order of the development of the modern idea of the Pure-land and the hell corresponds to the historical order of the development of the modern Buddhist in the general text of the history of modern Buddhism. In this sense, his failure to set a historical order in this article provides us with an interesting insight in considering the general historical order of the development of modern Buddhism.

Japanese history that directly dealt with the issue of the contradiction between modern science and religious faith. However, this fact does not mean that Entsu's Bonreki theory had a direct influence on the later development of modern Buddhism. In this chapter, we just tried to show that Bonreki and modern Buddhism shared a common discursive foundation for considering new common issues, such as the contradiction between science and religion. As long as their cosmographic discourse is concerned, this common discursive foundation was a production of the specific historical conditions that required a contradiction between modern science and religion. In the process of answering the questions raised by the modern scientific worldview, a new perspective and a new word were produced and the new discourse was born.

The eminent new discourse of modern Buddhism that was produced at the level of cosmography was "the replacement of the world as a knowledge with the world as a fact." This replacement was common to the works of the Bonreki scholars and modern Buddhist thinkers. In Entsu's Bonreki theory, the Buddhist worldview as a knowledge was converted to a scientific description of reality, and in the case of Inoue Enryō, this attempt of factualization was set on an endless orbit. In Kimura's Buddhist cosmography, this factualized Buddhist worldview is considered a mistaken perception of the world that was derived from ancient science, but the presupposition of this idea was that the Buddhist worldview was the description of fact in ancient India. In the case of Kiyozawa too, the Buddhist worldview was regarded as an ancient science (old science) that could be replaced by the modern scientific worldview. This perspective that divided cosmography (*Weltbild*) from cosmology (*Weltanschauung*) started with Entsu's Bonreki theory which tried to describe the Shumisen world as a reality at the level of modern scientific discourse.

Moreover, Entsu's qualitative distinction between "religious truth" and "scientific knowledge" was also a common discursive mode of all modern Buddhist thinkers whose theories we examined in this chapter. Inoue Enryō's *Yōkaigaku* was an attempt to explain the meaning of Buddhist thought at the level of the relative knowledge, while he

presupposed the transcendental status of "true mystery" that is not explainable. Since the relative knowledge can explain only a part of the absolute truth in any case, the relative scientific worldview can be endlessly refigured within the framework of Buddhist teaching as a religious truth. For example, because Entsu's style of Buddhist astronomy had already been outdated in Enryō's period, he discussed a new possibility of scientific explanation, such as the equality of the Buddhist idea of the empty space and the modern scientific idea of space. This discursive mode of Enryō was basically the same as that of Entsu. In Kimura Taiken's understanding of the Buddhist worldview, this discursive mode that distinguished religious truth from scientific knowledge was a presupposition to regard the Shumisen worldview as nonessential teachings of Buddhism. Kimura's basic attitude toward the Shumisen worldview was contrary to that of Entsu. While Entsu regarded the Shumisen worldview as an ancient science that represented true reality, Kimura considered it as an outdated ancient science. However, their points of view, which evaluated the Shumisen worldview as an ancient science in comparison with the modern science, were basically the same. This fact was well represented by an extreme similarity between their model of the Shumisen world. In Kiyozawa Mashi's *Spiritualism*, religious truth (meaning of faith), which was practically comprehended, and scientific knowledge, which was empirically acquired, were completely distinguished. This discursive mode was a precondition of his idea of totally inner subjective faith.

In this chapter, we indicated that there was a certain common discursive foundation in the modern Buddhist discourse since Entsu's *Bonreki* and tried to show the fact that the modern Buddhist discourse has always been discussed through a historically regulated eye or medium (the historicity of the modern Buddhist discourse). If the replacement of the world as a knowledge with the world as a fact and the distinction between religious truth and scientific knowledge were a common discursive mode of the modern Buddhist discourse, Fumon Entsu's *Bonreki* theory which was a starting point of these discursive mode could be called "the first modern Buddhism." However, this does not mean that

**Entsū was the founder of modern Buddhism. Not in the sense that he produced the new conditions, but in the sense that he first responded to the new conditions, Entsū was the first modern Buddhist in Japan.**

## CHAPTER 7

### CONCLUSION

#### Modern Japanese Intellectual History and Buddhism

In order to think of the contemporary study of early modern and modern Japanese intellectual history, we cannot pass by a series of Maruyama Masao's works. Even before the second World War when Imperial historiography had ideological authority, there were many great studies of intellectual history, such as Tsuda Sōkichi's study of the life consciousness (*seikatsu ishiki*) and Muraoka Noritsugu's philological study of Nativist thought.<sup>1</sup> However, the person who established Japanese intellectual history as an independent field of study and paved the way for the development of contemporary Japanese intellectual history was Maruyama Masao.

In a short article that discussed methodology of intellectual history, Maruyama roughly divided the history of thought into the three categories determined by the object of study: 1) History of doctrine, 2) History of ideas, and 3) History of *Zeitgeist* or ideology.<sup>2</sup> According to Maruyama, the history of religious doctrine and the scholarly discipline that presupposes the presence of a certain institution behind these intellectual activities cannot be

---

<sup>1</sup> Tsuda Sōkichi, *Bungaku ni arawaretaru waga kokumin shisō no kenkyū*, 5 vols (Tokyo: Iwanami, 1951). Muraoka Noritsugu, *Nihon shisōshi kenkyū*, 4 vols (Tokyo: Iwanami, 1939-49).

<sup>2</sup> Maruyama Masao, *Chūsei to hangyaku* (Tokyo: Chikuma shobō, 1992), 357-361. According to Maruyama, the object of the first type of the history of thought is a highly intentional and abstract system and doctrine. And to trace the historical development of the systematic doctrine is the project of this type. He takes up the history of religious thought, such as Christianity, Buddhism, and Confucianism, the history of Marxism, and the history of scholarly doctrines, such as political science, economics, and ethics. The subject of the second type is the general idea that was used in a particular culture and period in a certain way (for example, the idea of evolution). Maruyama takes up Kuki Shūzō's study of the idea of *iki* as a typical example. The object of the third type is the whole spiritual structure of the period that manifests in various fields, such as politics, society, ethics, literature, art, and so on, and appears in the interaction between them. Even though Maruyama uses Dilthey's word, *Zeitgeist* (spirit of the period), he says that this type of history of thought covers an even wider project. Tsuda Sōkichi's study of *kokuminshisō* (national thought) was taken up as a classical example of this type.

the foundation of an intellectual history.<sup>3</sup> In order to establish intellectual history as an individual field of study, we have to shift our attention from the first type of the history of thought to the second and the third types of the history of thought which are based on an interdisciplinary project.<sup>4</sup> Following this perspective, Maruyama studied Japanese intellectual history in its relation with the synthetic cultural and social background and subsequently published many works on early modern and modern Japanese intellectual history. Of these works, his *Studies in the Intellectual History of Tokugawa Japan* (*Nihon seijishisōshi kenkyū*) had the most eminent influence on the contemporary study of the early modern and modern Japanese intellectual history.

Hongō Takamori indicates the significance of Maruyama Masao's *Studies in the Intellectual History of Tokugawa Japan* as follows:

- 1) He demonstrated in terms of intellectual history that there existed the "foundational law of world history," that is, the shift "from the feudal to the modern" in the Japanese society also.
- 2) He clearly established a methodological criteria to study the above issue, and this criteria became a basic standard of the study of early modern and modern Japanese intellectual history after Maruyama's work.
- 3) Maruyama's model of modern thinking (*kindaiteki shii*) and modern human beings became a theoretical principle of the contemporary works of intellectual history that tried to show the ideal figure of post-War Japanese society.<sup>5</sup>

Maruyama's work, which presented an ideal model of modern thinking, tried to find this model within the early modern Japanese thought and on the other hand, criticized the

---

<sup>3</sup> Maruyama's history of doctrine is a wide concept that, for example, includes not only the history of the doctrine of the particular Buddhist sect, but also the general history of Buddhist thought. In his *Nihon no shisō* (the thoughts of Japan), for instance, Maruyama evaluates Watsuji Tetsurō's *Nihon seishinshi kenkyū* (study of the history of Japanese spirit) as a history of ethical thought and indicates that his project of intellectual history is based on a wider interdisciplinary study (Maruyama Masao, *Nihon no shisō* (Tokyo: Iwanami, 1961), 2-3).

<sup>4</sup> Maruyama takes up American intellectual history founded by Arthur O. Lovejoy, and Friedrich Meinecke's *Ideengeschichte* (history of idea) and Karl Mannheim and Max Scheler's sociology of knowledge that are derived from Wilhelm Dilthey's *Geistesgeschichte* as a representative case of this project (Maruyama, *Chūsei to hangyaku*, 366-369).

<sup>5</sup> Hongō Takamori, *Kinsei shisōron* (study of early modern Japanese thought) (Tokyo: Yūhikaku, 1981), 5-6. As Maruyama's methodological standards which brought these achievements, he also points out 1) the internal analysis of the thinking method, 2) the recognition of the fact that the turn from feudal thinking to modern thinking corresponds to the social and institutional shift from *Gemeinschaft* (organic community) to *Gesellschaft* (mechanical society), and 3) the clarification of the methodological standard for the analysis of Japanese nationalism.

intellectual condition of modern Japanese society that did not let truly modern thinking develop. These ideas of Maruyama produced the works of people who studied early modern and modern Japanese intellectual history from the perspective of the so-called "modernism (*kindai shugi*).<sup>6</sup> These people, such as Naramoto Tatsuya and Kinugasa Yasuyoshi, asked for the reason why modern Japanese society could not establish truly modern thinking by studying the germination of modern thinking in early modern Japanese thought from a perspective that regarded "modernity" as an absolute value.<sup>6</sup>

During the high growth of the Japanese economy in the 1960s, however, the point of view of the modernists, who attached an absolute value to Western modernity and pointed out a structural backwardness of Japanese thought, started to be criticized by people who tried to find positive factors even within the premodern feudal social system.<sup>7</sup> These people whose perspective is often called "contemporary modernization theory" positively evaluated the social and cultural conditions of modern Japanese society which used to be criticized by modernists as obstacles to modern thinking. Robert Bellah's positive evaluation of the traditional value system (religious ethics) and Minamoto Ryōen's study of *jitsugaku* (practical learning) are representative cases of the contemporary modernization theory.<sup>8</sup> In this context, any form of thinking that promoted (or could promote) the modernization of Japanese society as a social and economical change started to be positively evaluated as a factor that contributed to the economic success of contemporary Japan.

However, considering the fact that these works tried to find a certain type of thinking in the works of the representative intellectuals in the early modern period, all of them just

---

<sup>6</sup> Naramoto Tatsuya, *Nihon kinsei no shisō to bunka* (thoughts and culture of the early modern Japan) (Tokyo: Iwanami, 1987) and Kinugasa Yasuyoshi, *Kinsei jugaku shisōshi no kenkyū* (the study of early modern Confucian thought) (Tokyo: Hōseidaigaku shuppan, 1976) are representative works written from this perspective.

<sup>7</sup> Besides the criticism from contemporary modernization theory, Maruyama's standpoint was criticized from the perspective that attached a significance to the relation between the thought and its institutional background. The works focusing on the analysis of the doctrines of Chu-tzū, such as Morimoto Junichirō, *Toyō seijishisōshi kenkyū* (study of Eastern political thought) (Tokyo: Miraisha, 1967), Tahara Tsuguo, *Tokugawa shisōshi kenkyū* (Tokyo: Miraisha, 1967) and Bitō Masahide, *Nihon hōken shisōshi kenkyū* (study of Japanese feudal thought) (Tokyo: Aoki shoten, 1961) are representative cases.

<sup>8</sup> Robert Bellah, *Tokugawa religion* (New York: Free Press, 1957). Minamoto Ryōen, *Kinsei jitsugaku shisōshi no kenkyū* (study of early modern Japanese practical learnings) (Tokyo: Sōbunsha, 1980).



followed Maruyama's methodology. The issue of the relation between modern thinking and modernization started to be given a new direction by people who sought for a wider provider of thought in popular thought movements. One of the representative intellectual historians taking the perspective of "popular intellectual history (*minshū shisōshi*)," Yasumaru Yoshio, criticizes Maruyama's *Studies in the Intellectual History of Tokugawa Japan* as follows:

When we presuppose the standard of the modern model of thinking, the radical thought found in the thought of the ruling class is inclined to be a point of evaluation, and on the contrary, the construction of the popular thought cannot be evaluated positively. . . To put it concretely, the lines of Sorai, Norinaga, and Fukuzawa are evaluated much positively. Therefore, the popular thought, the peasant's movement, and the democratic rights movement in the Meiji period are evaluated only negatively, and the ruling ideology cannot be an object of the study."<sup>9</sup>

Developing his critical concerns here, such as the question about "the standard of the modern model of thinking" and "the popular thought," Yasumaru has produced works that problematized the relation between the modernization of Japanese society and popular thought.<sup>10</sup> Even though there are some difference at the level of their methodology, the questions raised by Yasumaru were shared by intellectual, cultural, and social historians, such as Shikano Masanao and Irokawa Daikichi, and there emerged a number of people who studied the "history of popular thought (*minshū shisō shi*)."

The works from this perspective which described the varieties of living existence in various social levels and included the living feelings and emotions of people as the objects of study were to deepen Maruyama's project of interdisciplinary and holistic intellectual history. For these people pursuing the archetypal structure of thought (*shisō no genkōzō*) or the form of possibility (*kanōtai*) which holds the possibility of the development toward various directions, the model of thinking that appears in the works of the representative

---

<sup>9</sup> Yasumaru Yoshio, *Hōhō toshiteno shisōshi* (intellectual history as a method) (Tokyo: Azekura shobō, 1996), 106.

<sup>10</sup> Yasumaru Yoshio, *Nihon no kindai shakai to minshū shisō* (modern Japanese society and popular thought) is the representative work.

intellectuals is no longer the only index for thinking about the issue of modernization in terms of intellectual history. The new fields of modern Japanese intellectual history, such as the popular democratic rights movements, new religions, and popular ethics, were developed by them.

The history of Buddhist thought was also developed within the context of these studies of early modern and modern Japanese thought. While there are some works considering Buddhist thought in terms of intellectual history in the study of the medieval Buddhist thought, early modern and modern Buddhist thought is mostly studied at the level of the history of doctrine (in the sense of Maruyama's term).<sup>11</sup> There are some works under the influence of Max Weber's work that tried to find a substitute for the Protestant ethic in early modern Japanese society.<sup>12</sup> Starting with Naitō Kanji's famous study of the Pure-land Buddhist working ethics of the Omi merchants, there emerged a series of works following the same path.<sup>13</sup> However, compared with the works that studied the same issue presupposing a wider object of study, such as religious ethics as a traditional value system seen in Robert Bellah's *Tokugawa Religion* and the popular thought and ethics in Yasumaru Yoshio's *Nihon no kindai to minshūshisō* (modernization of Japanese society and popular thought), these studies of the Buddhist thought were partial and complementary, and it is hard to mention any impact of these studies on general Japanese intellectual history.

---

<sup>11</sup> Watsuji Tetsurō's study of Dōgen in his *Nihon seishinshi kenkyū* (study of the history of Japanese spirit) (Tokyo Iwanami, 1992) and Suzuki Daisetsu's study of the Kamakura Buddhist thought in his *Nihonteki reisei* (Japanese spirituality) (Tokyo: Iwanami, 1972) are the representative cases. In American study of Japanese intellectual history, William R. LaFluer, *The Karma of Words: Buddhism and Literary Arts in Medieval Japan* (California: University of California Press, 1983) could be a good example.

<sup>12</sup> Especially, Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London: Allen and Unwin, 1930).

<sup>13</sup> Naitō Kanji, "Shūkyō to keizai rinri: Jōdo shinshū to Omi shōnin (religion and economic ethics: Jōdo shinshū and Omi merchants)" *Nihon shakaigaku nenpo* 8 (1941). Suzuki Munekane, *Nihon no kindai to On no shisō* (modernization of Japanese society and the idea of *on*) (Tokyo: Hōritsu bunka sha, 1964), Nakamura Hajime, *Nihon shūkyō no kindaisei* (modernity of Japanese religion) (Tokyo: Shunjū sha, 1964), and Kashiwara Yūsen, *Kinsei shomin Bukkyō no kenkyū* (study of early modern popular religion) ((Kyoto: Hōzōkan, 1971) are the representative works following the same critical concern.

Some scholars like Okuwa Hitoshi nowadays produce an ambitious work that describes early modern Japanese society as a Buddhist world (*bukkyōteki sekai*).<sup>14</sup> Okuwa describes the conventional study of early modern Buddhist thought as follows:

The conventional history of early modern Japanese thought studied the early modern in comparison with the "modern" that was constructed as a non-religious world and tried to find a non-religious world as a germination of the "modern" in the early modern. Therefore, it had no point of view to problematize the religiosity of the early modern. In the same way, the study of early modern Buddhist intellectual history tried to evaluate the religiosity of the early modern without problematizing that point of view and attempted to do an impossible headstand. Even if a religiosity is found in this context, this religiosity can be evaluated only as a complementary factor of the early modern world because the point of view to look for it itself is within a paradigm that rejects to perceive the religiosity as an essential factor. Now we have to attempt a radical paradigm shift. Let us presuppose that the early modern was a religious world and it was also a Buddhist world.<sup>15</sup>

It is not my concern here to determine whether Okuwa's paradigm shift can be a new mode of early modern Japanese intellectual history or not. But, at least it is true that unless we change our point of view, it is hard to study early modern and modern Buddhist thought in terms of broad intellectual history. The study of Entsu's Bonreki theory in this dissertation was also a small attempt to change our perspective.

### **Semiological Approach to Intellectual History and Modern Japanese Intellectual History**

Generally speaking, the history of the Buddhist thought always had only a marginal position in early modern and modern intellectual history. In fact, none of the above mentioned studies of modern Japanese intellectual history focused on the study of Buddhist thought. Okuwa calls this tendency "Maruyama paradigm" and appeals to people to change

---

<sup>14</sup> Okuwa Hitoshi, "Bukkyōteki sekai toshitenō Kinsei (the early modern Japan as a Buddhist world)," *Nihon shisōshi* 48 (1996) and Kurozumi Makoto, "Kinsei nihon shisōshi niokeru Bukkyō no ichi (the position of Buddhism in the history of early modern Japanese thought)," in *Nihon no Bukkyō*, vol. 1 (Kyoto: Hōzōkan, 1994) are the eminent example. In the American studies of the early modern Japanese history, Herman Ooms, *Tokugawa Ideology* (Princeton: Princeton University Press, 1985) proposes a similar point of view at least in his analysis of the early Tokugawa ideology.

<sup>15</sup> Okuwa Hitoshi, "Bukkyōteki sekai toshitenō Kinsei," *Nihon shisōshi* 48 (1996): 3.

perspective from the Maruyama paradigm, which regards the teachings of Chu-tzū as a representative model of early modern thinking, to a new paradigm, which considers Buddhism as a dominant model of early modern thinking.<sup>16</sup> However, the Buddhism that was identified with the foundation of early modern thinking in Okuwa's work is a model of thinking that could be called the popular religious value of the people, and it is hard to find the necessity to place the Buddhist thought at the center of the study of early modern intellectual history.<sup>17</sup> In this sense, it has a similar limitation to the previous works that tried to find a substitute for the Protestant ethic in the Japanese Buddhist thought. And his perspective which tries to reveal a Buddhist characteristic of early modern thinking directly succeeds Maruyama's method of intellectual history.

In this dissertation, adopting a new perspective called "a semiological approach to intellectual history," we sought for the possibility to study early modern and modern Buddhist thoughts in terms of broad intellectual history. The reason why we featured the Bonreki movement which had been neglected even in the history of Buddhist thought was that I wanted to clearly show the possibility of the new perspective by reconsidering a forgotten intellectual movement from a perspective different than the conventional one.

As long as we consider Entsu's Bonreki theory at the level of the subjective meaning of the world for him, it is hard to find modern thinking in his thought. The basic understanding of the world conceptualized by Entsu himself was always traditional. By adopting the modern scientific discourse, however, Entsu reconsidered Buddhist thought in terms of a new framework (Buddhist astronomy) and reconstructed the Buddhist worldview in a form that corresponded to the new conceptualization of the universe of the modern scientific worldview. In this dissertation, we discussed the relation between the Bonreki movement and the modern religious or scientific thought at the level of their

---

<sup>16</sup> Okuwa Hitoshi, "*Bukkyōteki sekai toshūteno Kinsei*," *Nihon shisōshi* 48 (1996): 4-8.

<sup>17</sup> In his "*Bukkyōtekiseaki toshūteno Kinsei*," Okuwa tried to reveal the process by which Buddhist thought settled in (*sumitsuku*) various thoughts and produced a typical early modern intellectual discourse: "discourse of mind (*kokoro no gensetsu*) or "thought of mind (*kokorono shisō*)." But the Buddhist thought in this context is an ambiguous mode of thought that can be named in various ways.

discourse. However, the "modern" factors in Entsū's Bonreki theory were generally derived from its form of discourse. For example, the conceptualization of the world as a mechanical system in Entsū's model of the Shumisen world was not a product of his intention, but a result of his style of writing the world (or cosmographic discourse) which he adopted from modern scientific discourse.

This shift in the cosmographic discourse represented by Entsū's model of the Shumisen world represents a shift in a precondition for producing a thought rather than an emergence of a new thought that has a new model of thinking. However, this shift in the precondition of meaning production was hardly problematized within the framework of the intellectual history that attached significance to the subjective meaning of the produced text and the worldview behind that meaning.

In his *The Birth of the Clinic: An Archaeology of Medical Perception*, Michel Foucault analyzed a historical shift in the medical scientific discourse and revealed the historicity of modern medical science. Foucault indicated that an a priori condition is required for the establishment of a certain type of science (here medical science). For Foucault, this a priori condition is brought by the shift in the gaze to see things and the change of speech to express things seen by the new gaze. Focusing on the emergence of the new medical discourse, he revealed the fact that there always exists a historical precondition for the establishment of a new empirical knowledge.<sup>18</sup> Following a similar perspective here, I attempted to reveal an example of a historical condition, in which a certain type of thought is constructed, by examining the modern Buddhist cosmography that started with Entsū's Bonreki theory. In fact, the only thing I could do was to indicate a discursive similarity between the Bonreki theory and modern Buddhism. But if this discursive similarity represents a common discursive ground that worked as a historical condition of the modern intellectual discourse (at least at the level of the cosmographic discourse), it could be a new

---

<sup>18</sup> Michel Foucault, *The Birth of the Clinic: an Archaeology of Medical Perception* (New York: Vintage Books, 1973).

offering to early modern and modern Japanese intellectual history. Because here it becomes possible to study a thought not only at the level of the subjective meaning of the produced text, but also at the level of the process of meaning production that is not clearly conceptualized by the thinker.

The basic discursive characteristics of Entsu's Bonreki theory that we discussed in relation to the modern scientific and religious discourse in this dissertation could be summarized as follows:

- 1) It discussed the thought of "Buddhism" in general by using a discursive framework inspired by the modern scientific discourse, such as "Buddhist astronomy." (conversion of a polyvocal system to a univocal system)
- 2) It indicated a qualitative difference between religious truth and scientific knowledge and tried to reconsider the meaning of the religious worldview in terms of the modern scientific discourse. (conversion of a symbolic cosmography to a modern scientific cosmography)
- 3) It divided the seen and the unseen worlds and reconstructed the Shumisen world as a realm of the seen world that existed outside of the inner subject. (transition from the conceptualization of the world as known to the world as seen)

As we examined in some chapters in detail, these discursive characteristics of the Bonreki theory, which appeared in Entsu's period for the first time, were succeeded by the later development of modern Buddhist discourse. Moreover, Entsu's cosmographic discourse also corresponded to those of his contemporaneous cosmographies as we examined in Chapter 2.

The Buddhist worldview depicted by Entsu had existed for a long time. For the first time in Entsu's period, however, a new word like "the Shumisen world (*shumikai*)" was produced by refiguring the Buddhist worldview through the new gaze, and these changes produced a new discourse that evaluated the religious truth in comparison with the scientific knowledge. In this sense, Entsu's Bonreki theory has significant value for our project which considers a shift in the form of the intellectual discourse in the modern period and a historical condition of this discursive shift, just as Ogyū Sorai's political thought, which was based on the teachings of Chu-tzū, was significant for Maruyama's study of early modern Japanese intellectual history that focused on the model of thinking.

The rich archives that could help to reveal the discursive shift in Japanese thought are stored in the history of the Buddhist thought that has been developed and formed as a main intellectual tradition of Japanese culture for over 1300 years. Especially for pursuing a historical condition that preconditioned the shift in the intellectual discourse in the modern period, the study of the Buddhist thought has a significant meaning. Because Japanese Buddhism was already organized as an intellectual tradition before the modern period and produced a new discourse confronting Western modernity. In this dissertation, we mainly focused on the cosmographic discourse (how the cosmic system was described). However, this perspective, which focuses on the form of discourse (not the model of thinking) and which considers the transition of the way of meaning production, can also be expanded to the analysis of the other types of discourse. Following this approach to intellectual history, therefore, the study of Buddhist thought is no longer supplemental. It could be placed at the center of the study of early modern and modern Japanese intellectual history as an intellectual history that is beyond the boundary of the history of doctrine.<sup>19</sup>

The study of modern Japanese intellectual history has always discussed what kind of basic model of thinking produced a subjective meaning for individual thought. Using the word of Hayden White cited in the Introduction, it has presupposed "a natural relation between language and the world it represents." In this context, the process of meaning production and the medium used in this process of the meaning production cannot be a

---

<sup>19</sup> In the development of Japanese Buddhist thought from the early modern to the modern periods, for example, there are many materials by which we can clarify a discursive shift that represents a transition of the basic notion of people, such as the historical consciousness, the perception of the world, the idea of nation, and so forth. Therefore, when we consider a shift in a certain type of discourse, such as those of the historiography and the image of nation (not the idea of history and the idea of nation), we could more clearly reveal a transition of the period eye from one period to another by working on the Buddhist thought that has produced various styles of discourse on these subjects for a long time. In this sense, we can consider a historical shift in various types of discourse (or various ways of meaning production) through a discursive analysis of the Buddhist thought. This approach to the study of Buddhist thought could be a direction to elevate the history of early modern and modern Japanese Buddhist thought to the level of Maruyama's intellectual history, that is, beyond the boundary of the history of doctrine.

Even in the case of this approach, of course, there is no necessity to feature only Buddhist thought. However, by dealing not with the discourse that discussed the new topics through a new gaze, but with the discourse that reconsidered the old topics through a new gaze, we could consider a more synthetic figure of the discursive shift including the movement in the traditional thought beyond the schematic contradiction between "old and new." On this point, there is a significant meaning to focusing on the development of Buddhist thought.

subject of study. In this dissertation, we tried to feature this neglected aspect of the intellectual history by studying the Bonreki theory that simultaneously has an anti-modern "intention" and a modern "discourse" from a perspective of the semiological approach to intellectual history that reveals the ideology of the form of discourse.<sup>20</sup>

### **Telling Another Allegory**

In this dissertation, we also examined some issues of the history of modern Buddhist thought in a narrow sense featuring Entsu's Bonreki theory, along with the broad issue of intellectual history. First of all, by introducing a forgotten intellectual movement, the Bonreki movement, in detail, we tried to provide new material with the study of early modern and modern Japanese intellectual history. In Chapters 3, 4, and 5, we introduced Entsu's works and reconstructed a whole picture of the Bonreki movement as faithful as possible to the collected materials. There is no full-scale study of this unique intellectual movement, even in Japan. I hope that this dissertation could be a starting point of further argument.

Secondly, I tried to reconsider the scheme of the traditional/modern opposition that is behind the ordinary evaluation of the Bonreki movement, featuring a discursive similarity between the Bonreki and its contemporaneous astronomical theories. As we examined in some chapters, the relation between the Bonreki theory and its contemporaneous astronomical theories was not a contradiction between the traditional (old) and the modern

---

<sup>20</sup> However, the semiological approach to intellectual history that we mention here never rejects the conventional history of ideas. The object of the semiological approach to the text is "the 'empty meanings' which support a variety of full meanings, but which do not permit the work to be given just any meaning" (Jonathan Culler, *Structuralist Poetics* (New York: Cornell University Press, 1975), 119)." Therefore, pursuing the history of the form of discourse is to clarify a historicity of any form of knowledge by revealing a convention or condition that are normally concealed at the unconscious level of the author. In this sense, this attempt is not to discuss a different subject, but to change a point of view. Moreover, the semiological approach to intellectual history here is not equal to the structuralist approach to intellectual history. Just like the recent theory of narratology (or poetics) that keeps focusing not on the content of text, but on the discourse starts featuring a historically and culturally conditioned enunciation situation, our perspective that attempts a poetics of modern Japanese religious discourse is not restricted to the structuralist analysis in a narrow sense (for the general overview of the development of the narratology, see Martin Wallace, *Recent Theory of Narrative*. New York: Cornell University Press, 1986). Our approach here is to step back and to take a distant point of view of text, and there are various ways to take a distant point of view.



(new), but a competition between the different scientific theories. If we were able to think of the Bonreki theory, which is normally considered as a typical dharma preservation theory, in this way, it would also be possible to reconsider early modern Buddhist thought, which was mainly considered in terms of the contradiction between the persecution of Buddhism and the dharma preservation theory, from a different perspective.

Thirdly, we reevaluated Entsu's Bonreki theory as "the first modern Buddhism" focusing on the discursive analysis of the Bonreki theory. By featuring the issue of the encounter with modern scientific discourse which has been a common issue in Buddhist thought since the nineteenth century, we tried to problematize a developmental periodization of the history of modern Buddhist thought. The history of modern Buddhist thought normally starts with the dharma preservation theory as a reaction to the persecution of Buddhism. It is followed by the period of the Buddhist modernists who accepted the modern scientific and philosophical discourse and reaches the establishment of the modern Buddhist faith.<sup>21</sup> If we think of the typical mode of thinking focusing on the works of the representative thinkers in each period, this developmental periodization is also effective. However, if we think of the Buddhist thought after the nineteenth century by focusing on a specific issue, such as modern scientific worldview, and by examining the response to that issue, the actual situation will be that various types of responses coexist in each period. In this dissertation, we tried to disclose the contemporaneity of modern Buddhist thought, which had seemed like a gradual development, by examining the discursive relation between the Bonreki, which was one of the earliest response of Buddhist thought to the modern scientific discourse and also a new discourse constructed corresponding to the new intellectual condition, and modern Buddhism.<sup>22</sup>

---

<sup>21</sup> Tamamuro Taijō, ed., *Nihon Bukkyōshi* (history of Japanese Buddhism), vol. 3 (Kyto: Hōzōkan, 1967) is a typical example of this periodization.

<sup>22</sup> In this dissertation, we focused on the discourse on the Shumisen worldview. But by taking up other crucial topics for modern Buddhist discourse, such as the existence of the Pure-land and the hell, the theory of the denial of Mahayana Buddhism (*daijō hibussetsu*), and the meaning of prayer and ritual, we could more clearly indicate the ambiguity of this periodization. In his *Kinsei niokeru Jōdōkan no suii* (transformation of the idea of the Pure-land in the early modern Japan, 1987), Kashiwara Yūsen unintentionally discloses the fact that a certain type of understanding cannot be located in a certain period as a dominant idea. He

Featuring these points, we reevaluated the Bonreki movement in terms of early modern and modern Japanese intellectual history. By reconsidering this unique Buddhist thought movement in relation to the later development of modern Japanese Buddhism, we tried to present a perspective that makes it possible to study a marginal movement from a different point of view. However, proposing a different point of view is not to deny other point of views. In an article discussing the method and perspective of intellectual history, Maruyama Masao says "We cannot talk about the academic standard of the method, objects, and field in terms of intellectual history. . . According to the object of study, there are various types of intellectual history and therefore, the method also varies in accordance with them (types of intellectual history). It is hard to compare their value at an abstract level, and there is no reason to do it."<sup>23</sup> Our attempt here was also to narrate an intellectual history producing a method through the object and regulating an object through the method. In this sense, writing an intellectual history is to write an allegory.

According to the traditional definition of "allegory" as a rhetorical device, allegory is a rhetoric that starts with the first foundational metaphor and repeats the consecutive metaphors.<sup>24</sup> Following this idea, the reevaluation of the Bonreki theory in this dissertation is also an allegory that started with the first presupposition that we can regard the Bonreki theory as a modern thought at the level of its discourse. Especially in the case of the Bonreki theory which simultaneously has an aspect of the fundamentalistic rejection of modern science (the Shumisen theory) and an aspect of scientific discourse (Buddhist astronomy), the narrative on this subject naturally changes according to the focus of discussion. As Michel Foucault categorized the story of Don Quixote, which was close to the works in his Renaissance period at the level of its content, as the first work of his

---

seems to be confused by the fact that the transformation of the idea of the Pure-land never corresponds to the developmental periodization of modern Buddhist thought. But from our perspective that features not a development, but a rupture, it is rather normal. I hope that this dissertation could be a starting point to think of this issue also.

<sup>23</sup> Maruyama Masao, *Chūsei to hangyaku* (Tokyo: Chikuma shobō, 1992), 356-7.

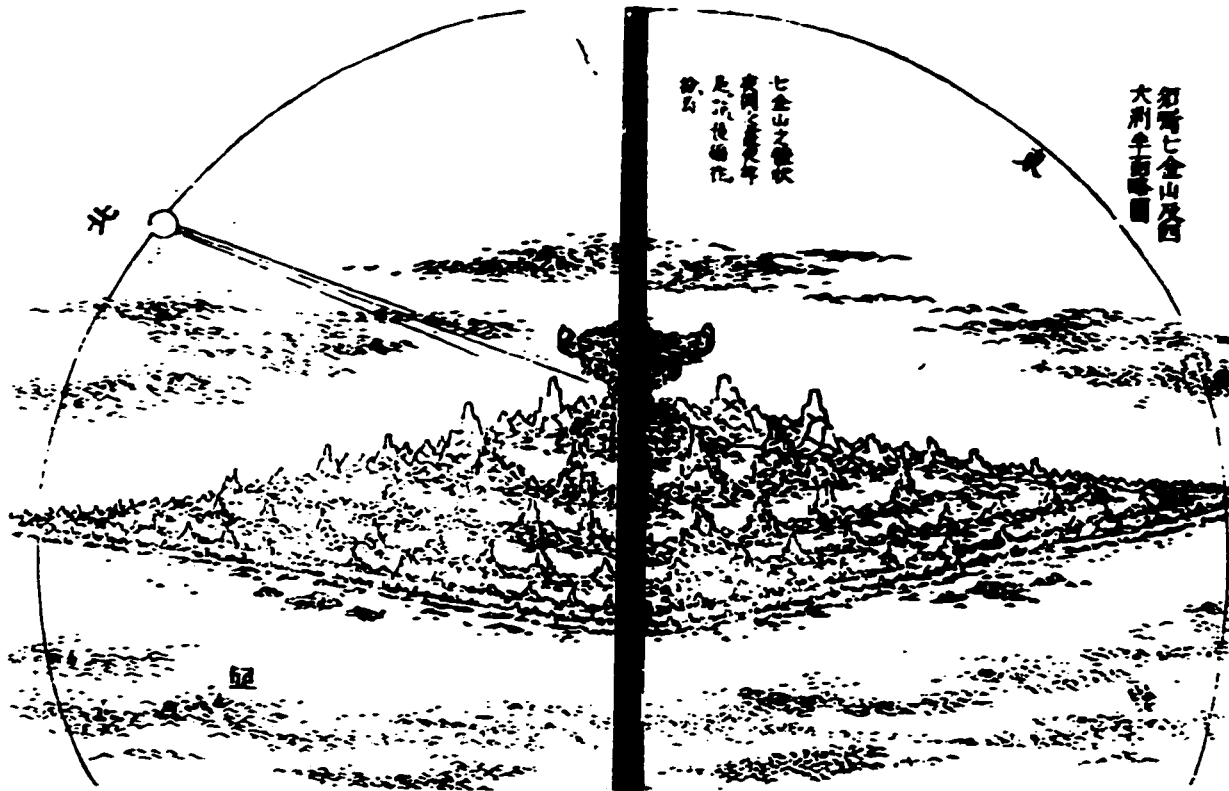
<sup>24</sup> Satō Nobuo, *Retorikku ninshiki* (rhetorical perception) (Tokyo: Kōdansha, 1992), 195-218. Citing from various traditional texts of rhetoric, Satō also defines "allegory" as "'continuation of metaphor" or "structured metaphor."

Classical period focusing on its discursive form, Fumon Entsu's *Bonreki* also had a dual characteristic at the middle between the premodern and the modern.<sup>25</sup> In this dissertation, as a case study, we studied the *Bonreki* movement focusing on the form of its discourse and tried to show that we can look at a different issue by taking a different perspective. If changing a perspective sometimes leads to finding an opportunity to reconsider a conventionally neglected issue, telling another allegory will also be meaningful for expanding the object of intellectual history.

---

<sup>25</sup> Michel Foucault, *Order of Things* (New York: Vintage Books, 1970), 46-77. Unlike the ordinary reading of this story that features the content, Foucault pays more attention to the structure of text. In the second part of the story, there appears the character who read the first part of the story. He attaches significance to this plot structure that makes this story a story that exists only within the story. In this sense, the story of *Don Quixote* becomes the first work of the Classical age, in which only the pure representation exists as a form of knowledge.

## **ILLUSTRATIONS**



**Figure 1**

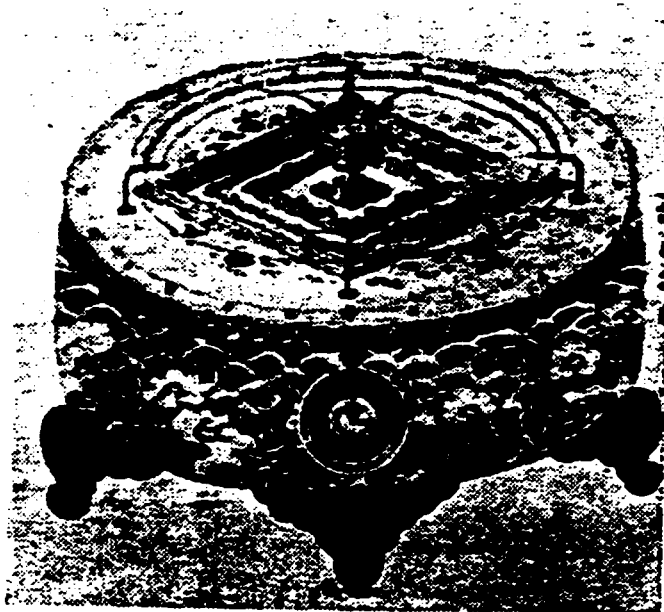
A Bird's Eye view of the Shumisen world. An enormous mountain at the center of the world, Mt. Sumeru is surrounded by the mountain ranges and seas.

Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 16-17.

**Figure 2**

Entsū's miniature mechanical model of the Shumisen world. It is said that the models of the sun and the moon of this model could move as corresponding to Entsū's Buddhist calendar system.

Ono Genmyō, "*Bukkyō tenmongaku*," no. 8, *Gendai Bukkyō* 4-33 (1927), 123.



解図之極北南道赤

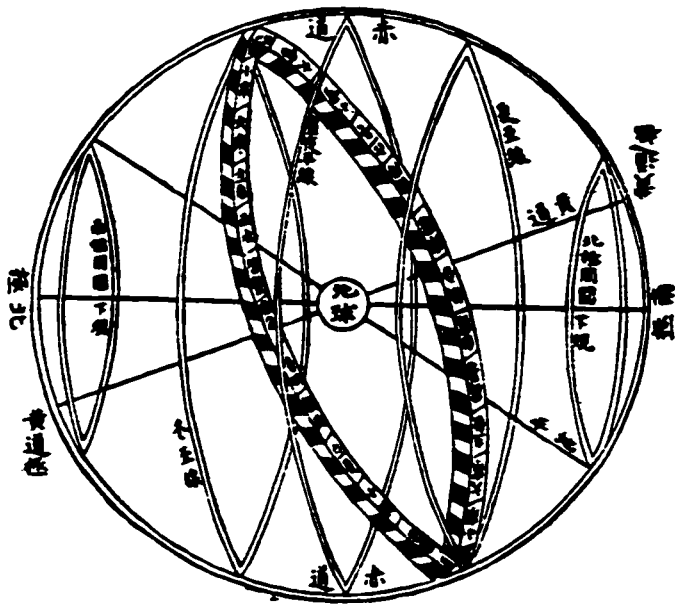
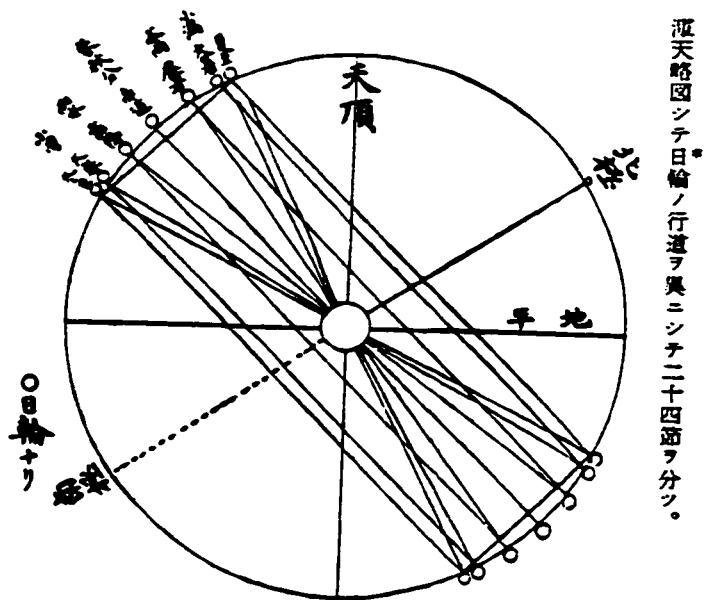
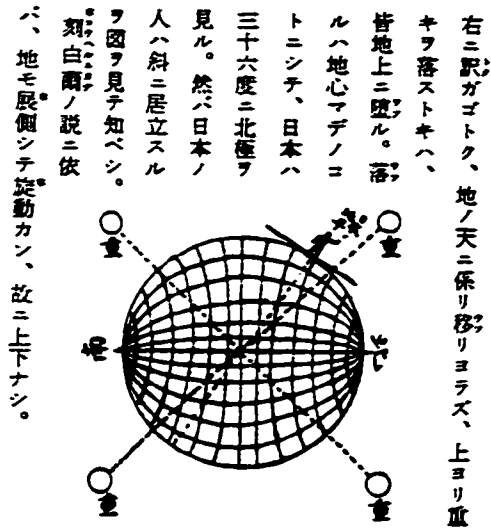


Figure 3  
Pictorial explication of the movement of the sun.  
Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami,  
1976), 451.

Figure 4  
Movement of the sun seen from the earth.  
Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami,  
1976), 454.

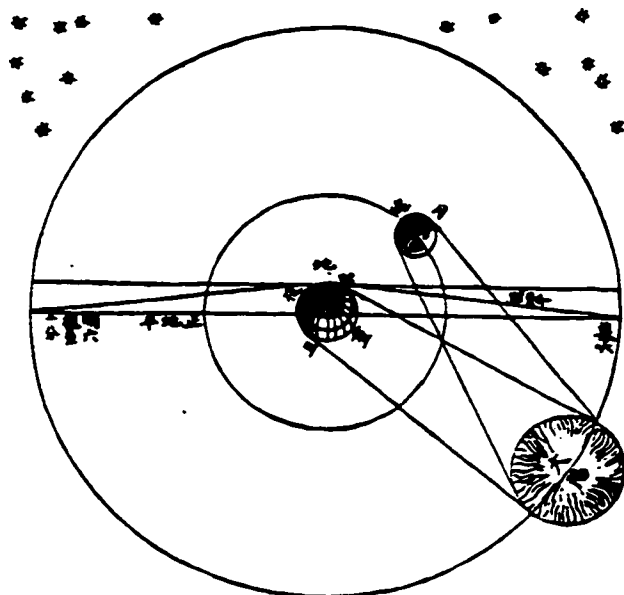


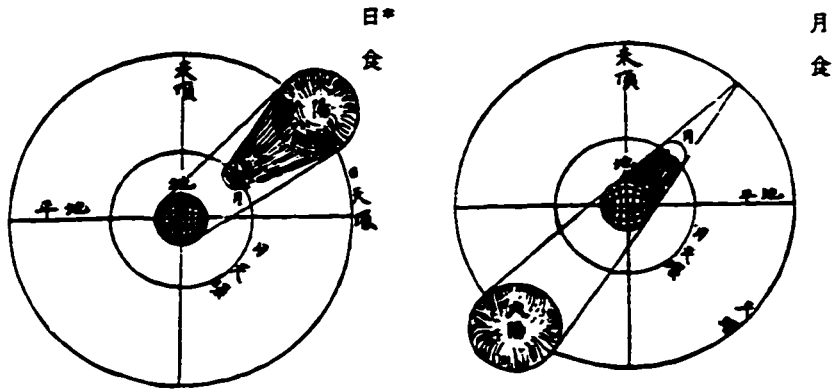
渾天略圖シテ日輪ノ行道ヲ異ニシテ二十四節ヲ分ツ。



**Figure 5**  
 Pictorial explication of the law of gravity. A human figure on the upper right represent people in Japan.  
 Matsumura Akira and others, eds., *Yōgaku jō. Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami, 1976), 456.

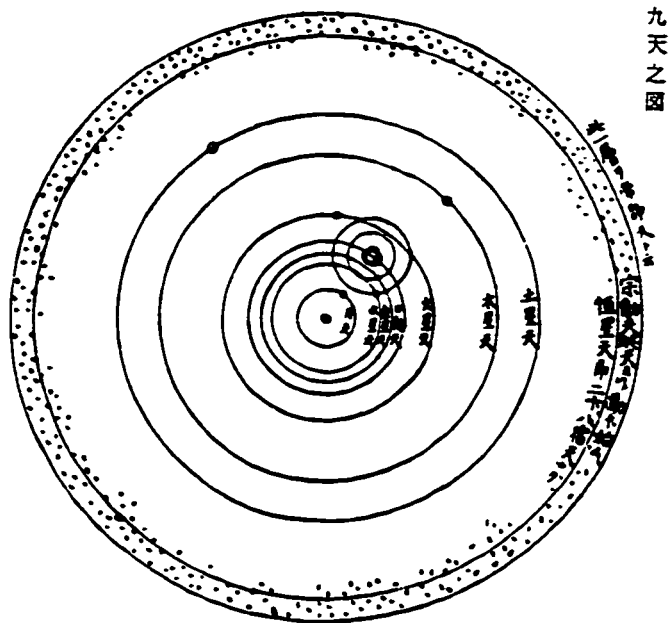
**Figure 6**  
 Relation between the sun, the moon and the earth. The earth is located at the center of the world.  
 Matsumura Akira and others, eds., *Yōgaku jō. Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami, 1976), 457.





**Figure 7**  
 Pictorial explication of the solar and lunar eclipse based on the geocentric theory.  
 Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami, 1976), 456.

**Figure 8**  
 Picture of the world based on the geocentric theory.  
 Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami, 1976), 456.





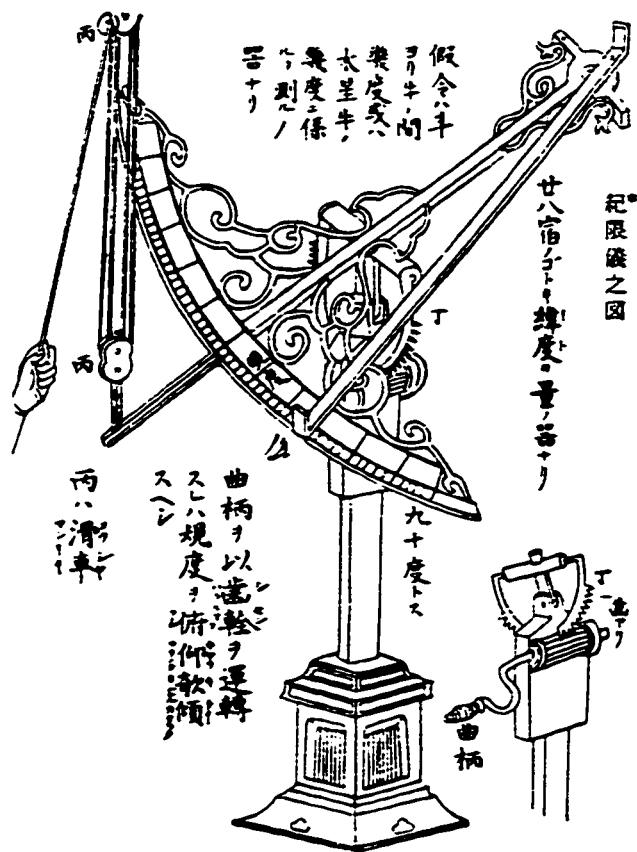
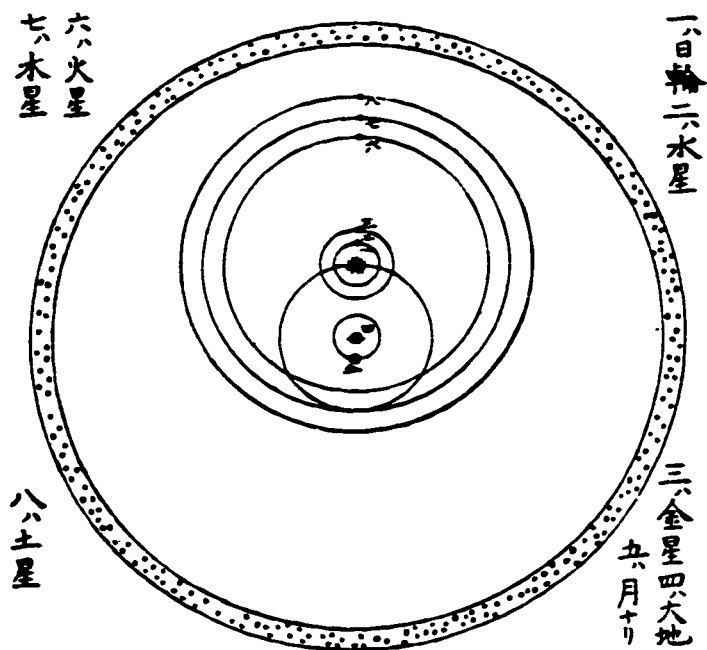


Figure 9  
Precision Gauge to measure one sixth of the sky.  
Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami,  
1976), 462.

Figure 10  
Theory of Tycho Brahe from Shiba Kōkan's  
*Oranda tensetsu*.  
Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami,  
1976), 467.



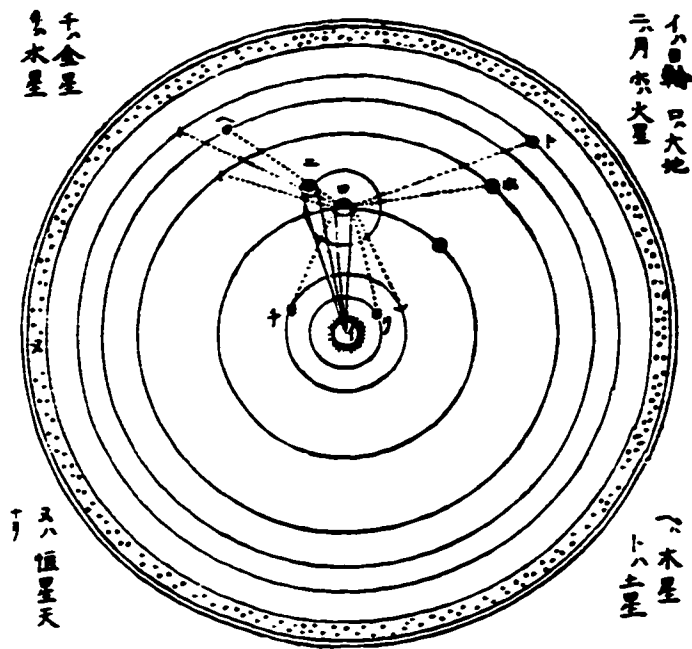
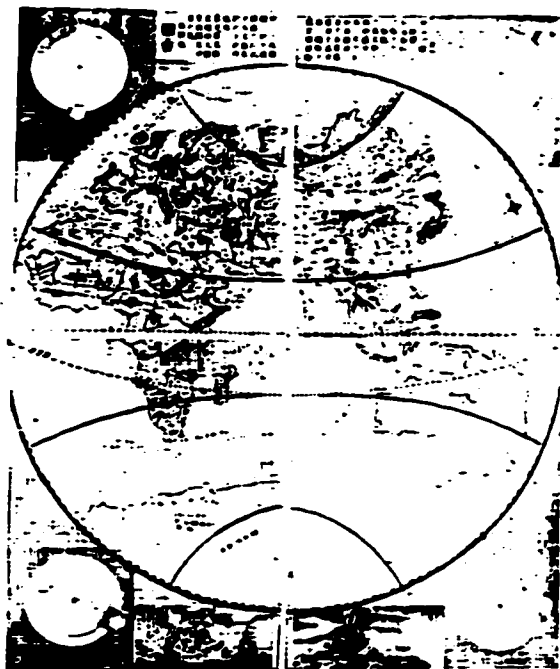
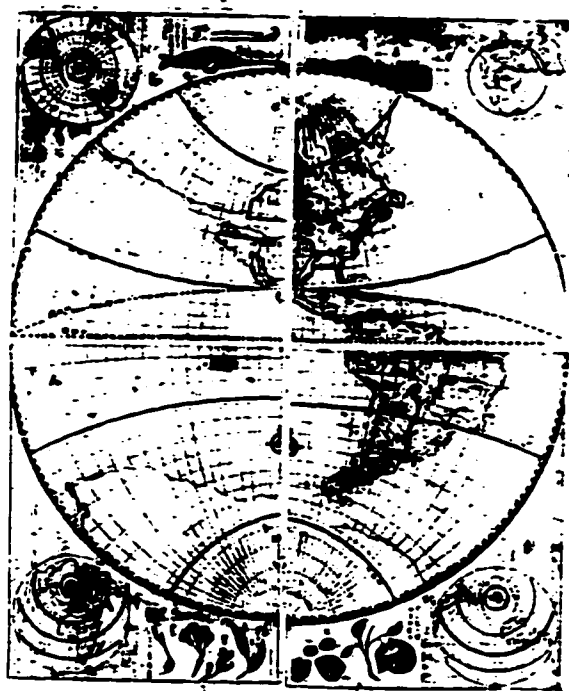


Figure 11  
Theory of Nicholas Copernicus from Shiba  
Kōkan's *Oranda tensetsu*.  
Matsumura Akira and others, eds., *Yōgaku jō*.  
*Nihon shisōtakikei*, vol. 64 (Tokyo: Iwanami,  
1976), 467

Figure 12  
Shiba Kōkan's world map published around  
1794.  
*Kokushi daijiten*, vol. 8 (Tokyo: Yoshikawa  
kōbunkan, 1987), Figure 7.



廿五日	廿四日	廿三日	廿二日	廿一日	二十日	十九日	十八日	十七日	十六日	十五日	十四日	十三日	十二日	十一日	十日	九日	八日	七日	六日	五日	四日	三日	二日	元日
己亥	戊戌	丁酉	丙申	乙未	甲午	癸巳	壬辰	辛卯	庚寅	己丑	戊子	丁亥	丙戌	乙酉	甲申	癸未	壬午	辛巳	庚辰	己卯	戊寅	丁丑	丙子	乙亥
								雨水																正月小
								中實正三期																正月小
廿七日	廿六日	廿五日	廿四日	廿三日	廿二日	廿一日	二十日	十九日	十八日	十七日	十六日	十五日	十四日	十三日	十二日	十一日	十日	九日	八日	七日	六日	五日	四日	三日
																								三

立春正月節大  
今夜三初二期  
壬寅  
辰四十二期  
辰夜五十七期  
「寅(可也) 壬(無用ノモノ也)」

Figure 13  
*Kyōwa ninen reki* (calendar of 1802). This is the calendar of January.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 156.

廿一日	三十日	廿九日	廿八日	廿七日	廿六日
乙巳	甲辰	癸卯	壬寅	辛丑	庚子
			二月朔	未初四期大朔日	
				廿九日	廿八日
四日	三日	二日			

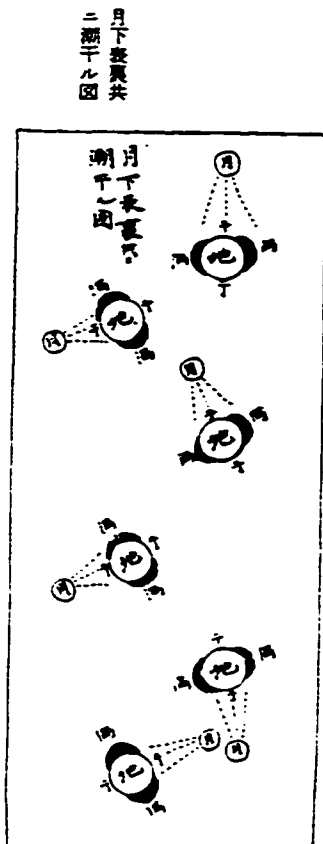
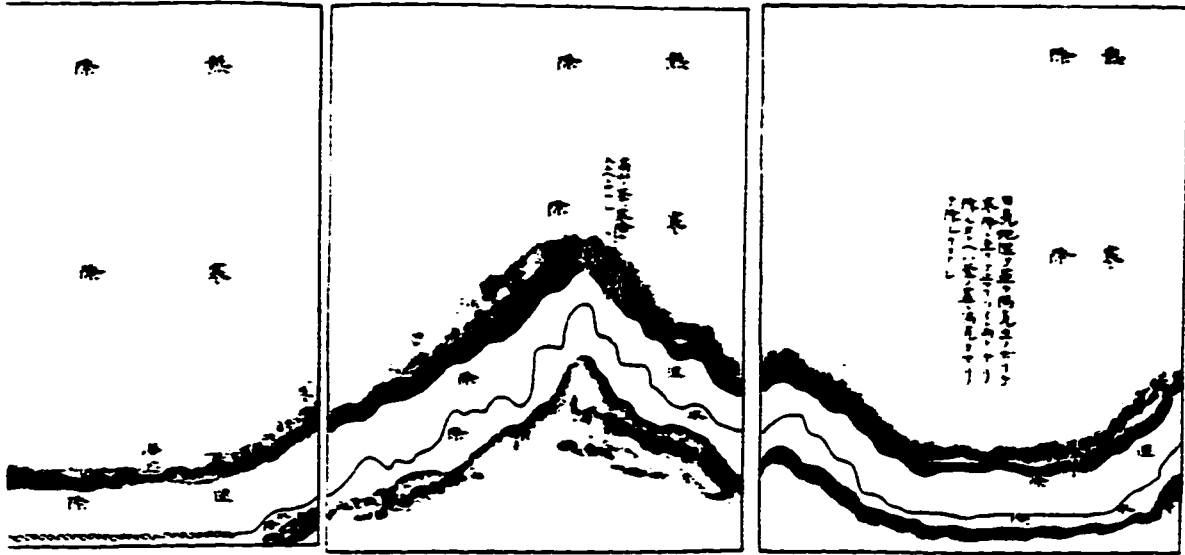
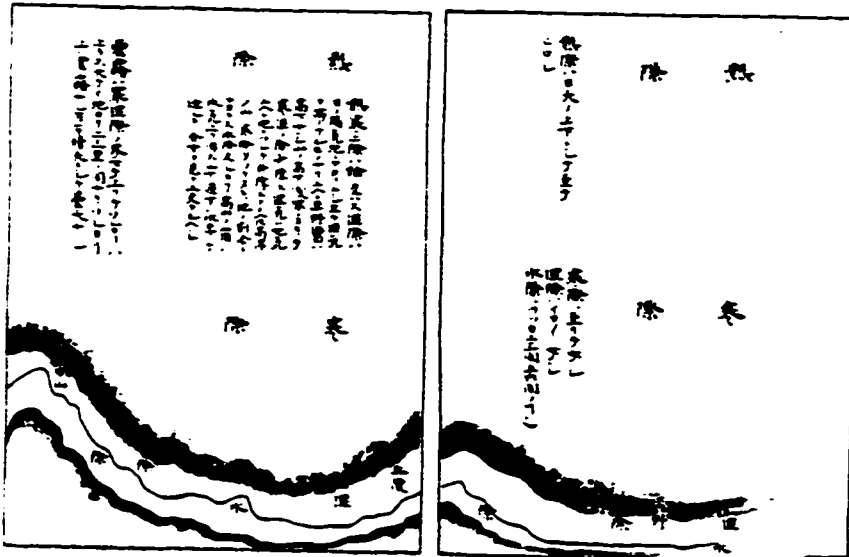


Figure 14  
 Pictorial explication of the ebb and flow.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 181.



日氣、地盤ヲ蒸テ陽氣立ノボリテ、寒際ニ至リテ止マリ、ツイニ雨トナリ降ル。タトヘハ釜ノ蓋ニ湯氣タマリテ降ルガゴトシ。  
高山ノ峰ハ寒際ニ入。ユヘニサムシ。



寒際ハ日天ノ上下ニシテ至テヒロシ。  
寒際ハ至リテ少シ。  
寒際ハイヨク少シ。  
水際ハワツカニ三間・五六間ノコト也。

熱寒ニ際ハ嶺ニ及バズ。濕際ハ日ノ出ル地ニアタリ、ムシ立テ濕氣ヲ帯ブルモノナリ。ユヘニ平野海面ハ高下ナシ。山ノ高下浅深ニヨリテ、寒濕ノ際升降ス。湿氣ハ地氣ニヘニ、地ニツレテ升降ストイヘドモ、高深ノ山ハ寒際ヲツラヌキ、地ノ割合ニアタラズ。水際又シカリ。高山ノ山頂ハ水気上リ得ズ。山下涯下ハ水至リテ近シ。コノ分寸ヲ見テ工夫アルベシ。  
雲霧ハ寒濕際ノ界マデ上リテ、ソレヨリハ上ラズ。大テイ地ヨリ二三里ノ間ナリ。ソレヨリ上ハ空曠ナシ。万古晴天ニシテ曇天ナシ。

Figure 15  
Pictorial explication of the meteorological phenomena caused by the geographic conditions. Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 185.

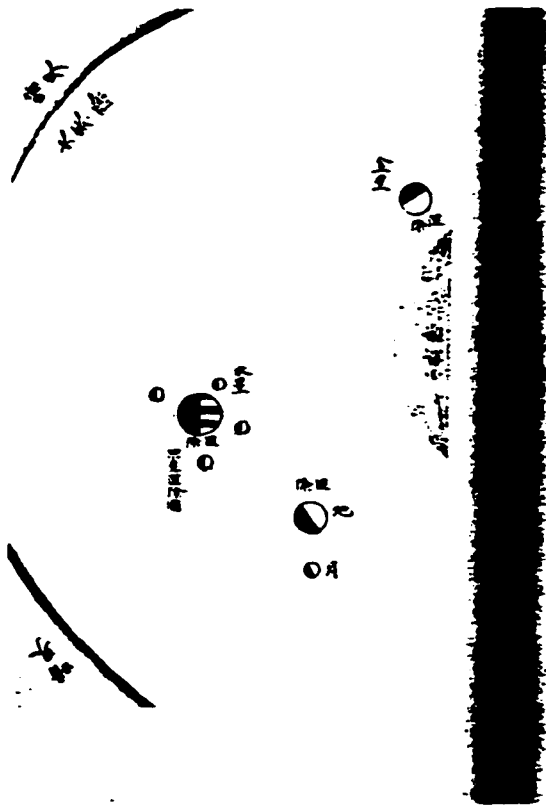


Figure 16  
Pictorial explication of the solar system.  
Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 189.

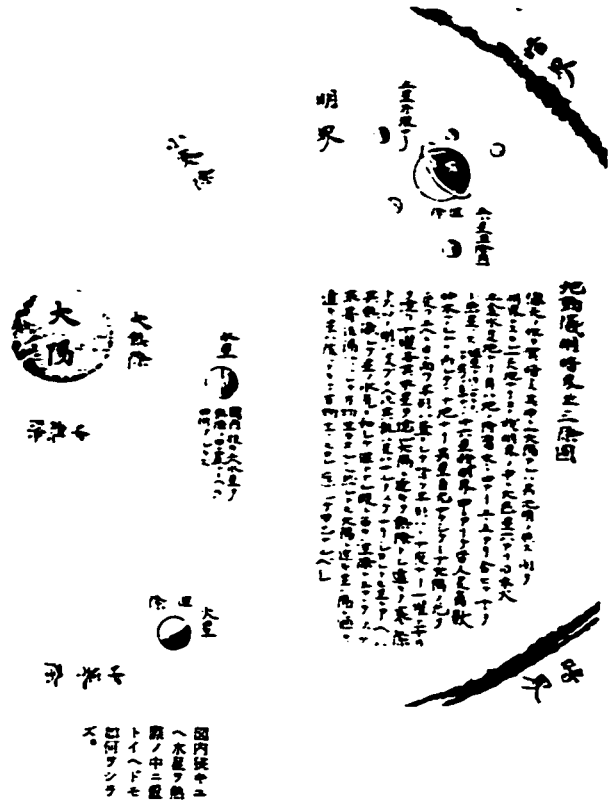


Figure 17  
Traditional calendar of a local area.  
Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 191.

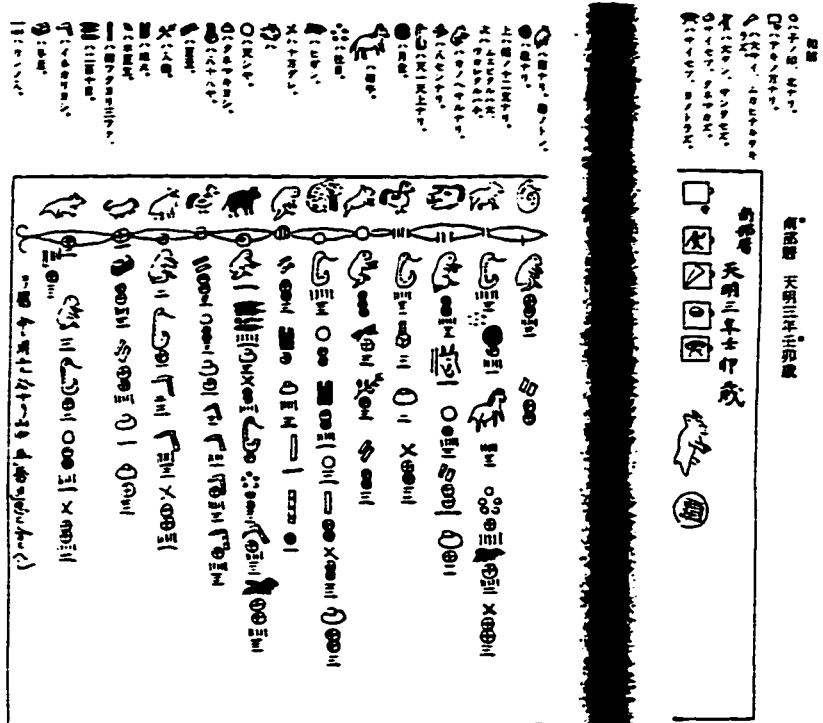
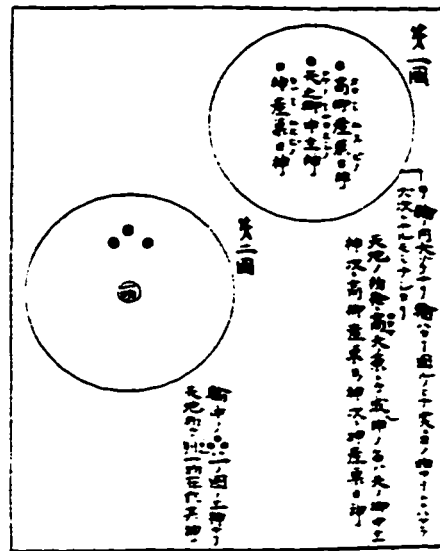
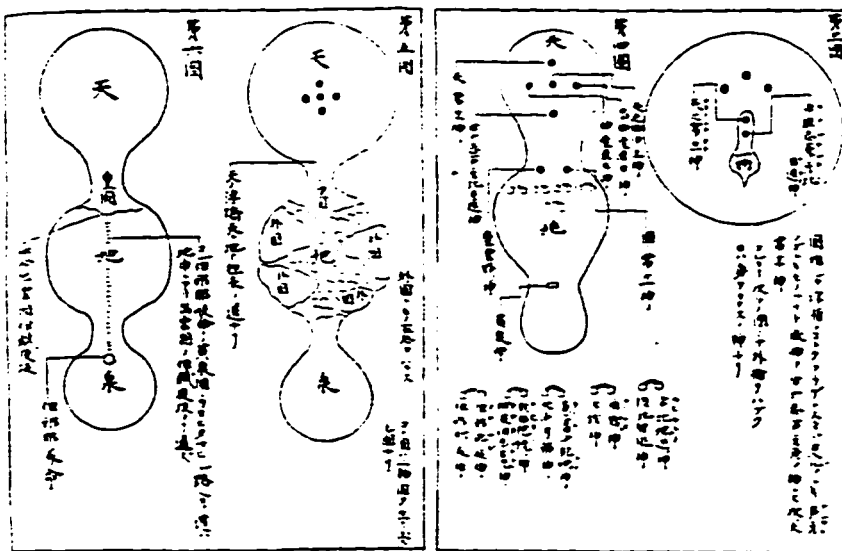


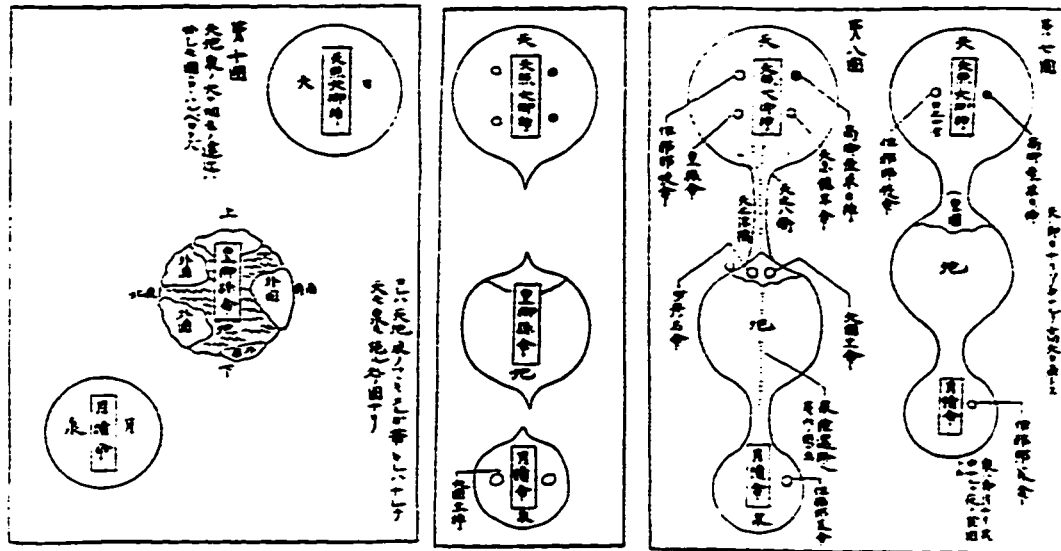
Figure 18  
 Pictorial explication of the creation of the world  
 in Hattori Nakatsune's *Sandaikō*.  
 Arisaka Takamichi and others, eds., *Tominaga  
 Nakamoto Yamagata Bantō. Nihon shisōtaikei*,  
 vol. 43 (Tokyo: Iwanami, 1973), 193-196.



コノ輪ノ内大ノ輪ナリ。輪ハカリニ四ルノミ  
 ノ。実ニコノ物アリトニハアラズ。次々ナル  
 モミナンカリ。  
 天地ノ初発ニ、高天ノ原ニテ、成、神ノ名ハ、  
 天ノ御中主神、次ニ高御産巣日神、次ニ神産  
 巢日神。  
 輪中ノ二ハ、一ノ図ノ三神ナリ。天地初テ判  
 一物、在ニ於其中。



外圍ドモノ在処カ、ハラズ。  
 ニノ図ハ二神ヲ生ミ玉ヒシ図ナリ。  
 天ノ浮橋、天ト地下往來ノ道ナリ。  
 ニレ伊弉諾命ノ黄泉國ニカヨヒタマヒシ路  
 也。コノ道ハ地中ニアリ。出雲國ノ伊賦夜坂  
 ヨリ通ス。  
 此處、出雲國伊賦夜坂。  
 國能シテ浮橋ノゴトク、クラゲナスタマヒヨ  
 ルノトキ、高天ノゴトキモノアリテ、成神ヲ  
 宇麻志彦牙彦ノ神トス。次ニ天常立ノ神。  
 コレヨリ次々ノ圖、ミナ外輪ヲハブク。  
 ・ハ身ヲカクスノ神ナリ。

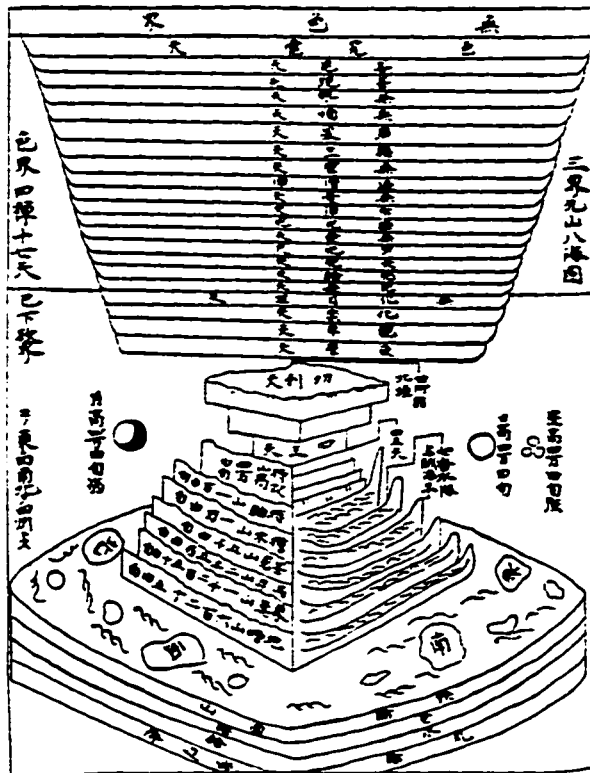


天ハ即日ナリ、ソノ中ナルヲ高天ガ原トス。  
 泉ハ即月ナリ、其中ナルヲ夜ノ衣底ト云。  
 泉ニ往還路也。第六ノ図ニ出。

ニレハ天地泉ノフミキタルガ、併キレハナレ  
 ナ、天モ泉モ、旋ル処ノ図ナリ。

天地成ノ大ナ、相去ノ遠近ハ必シモ図ニカ、  
 ハルベカラズ。

**Figure 18**  
 Pictorial explication of the creation of the world in Hattori Nakatsune's *Sandaikō*.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*,  
 vol. 43 (Tokyo: Iwanami, 1973), 193-196.



**Figure 19**  
 Pictorial explication of Buddhist worldview in Monnō's *Kusenhakkai kaichōron*.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*,  
 vol. 43 (Tokyo: Iwanami, 1973), 197.

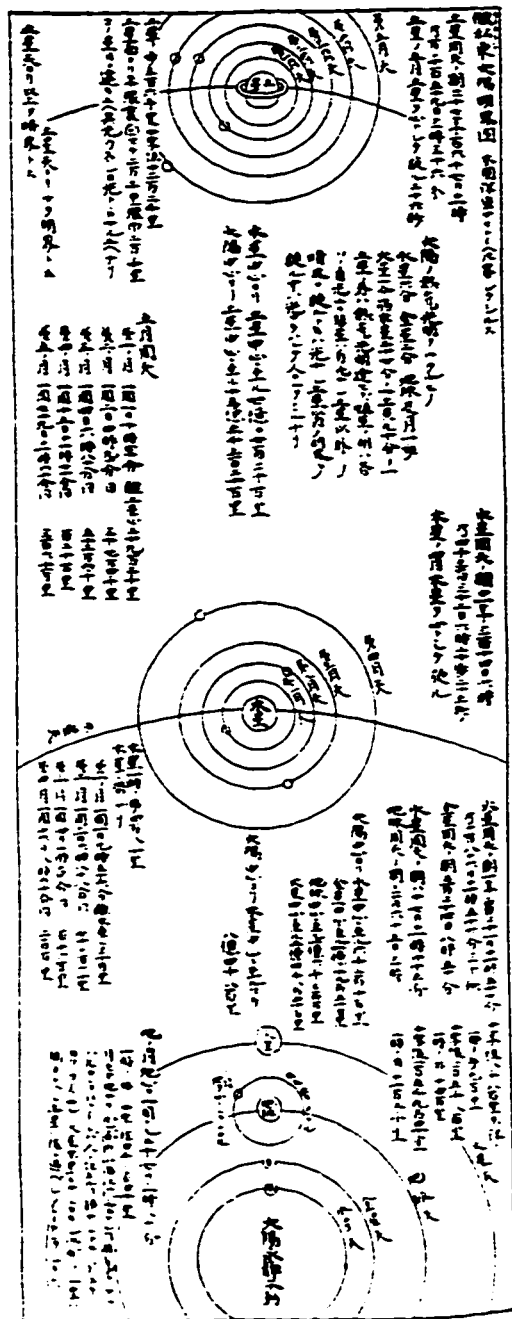
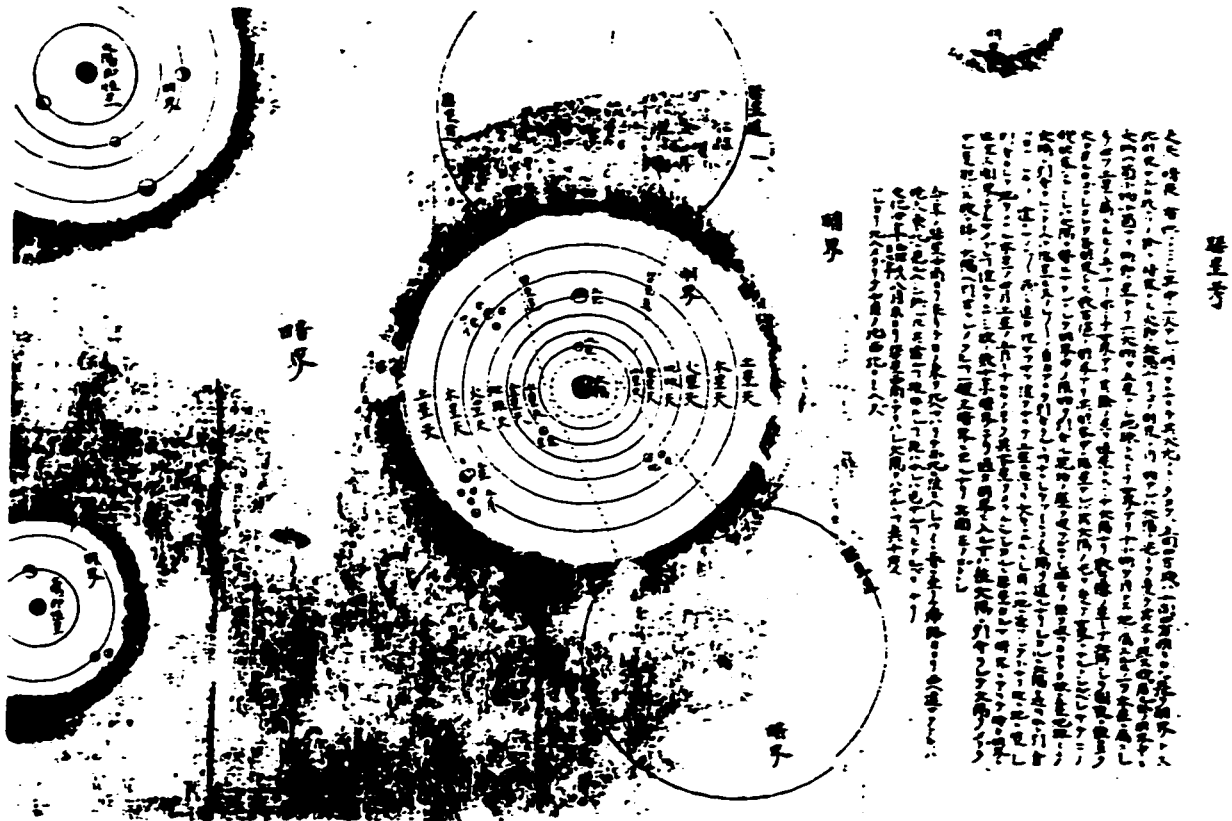
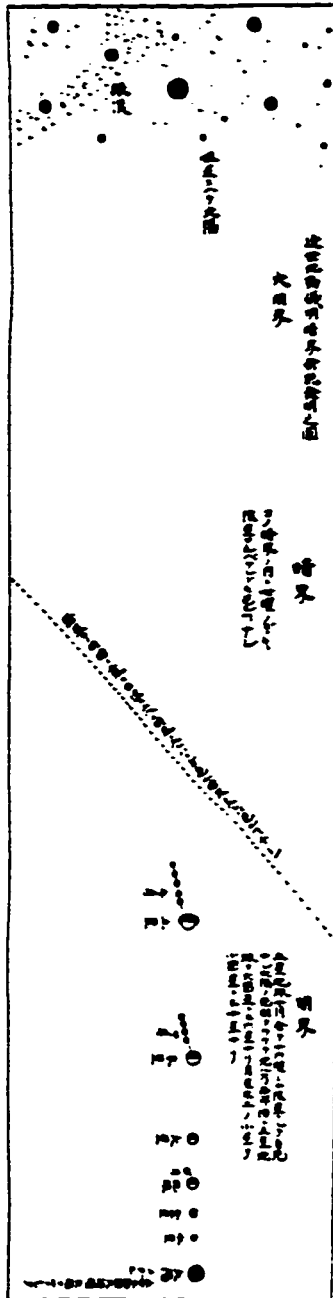


Figure 20  
 Pictorial explication of the heliocentric theory.  
 This is based on the theory of Newton's student,  
 Winston.  
 Arisaka Takamichi and others, eds., *Tominaga  
 Nakamoto Yamagata Bantō. Nihon shisōtaikei*,  
 vol. 43 (Tokyo: Iwanami, 1973), 199.

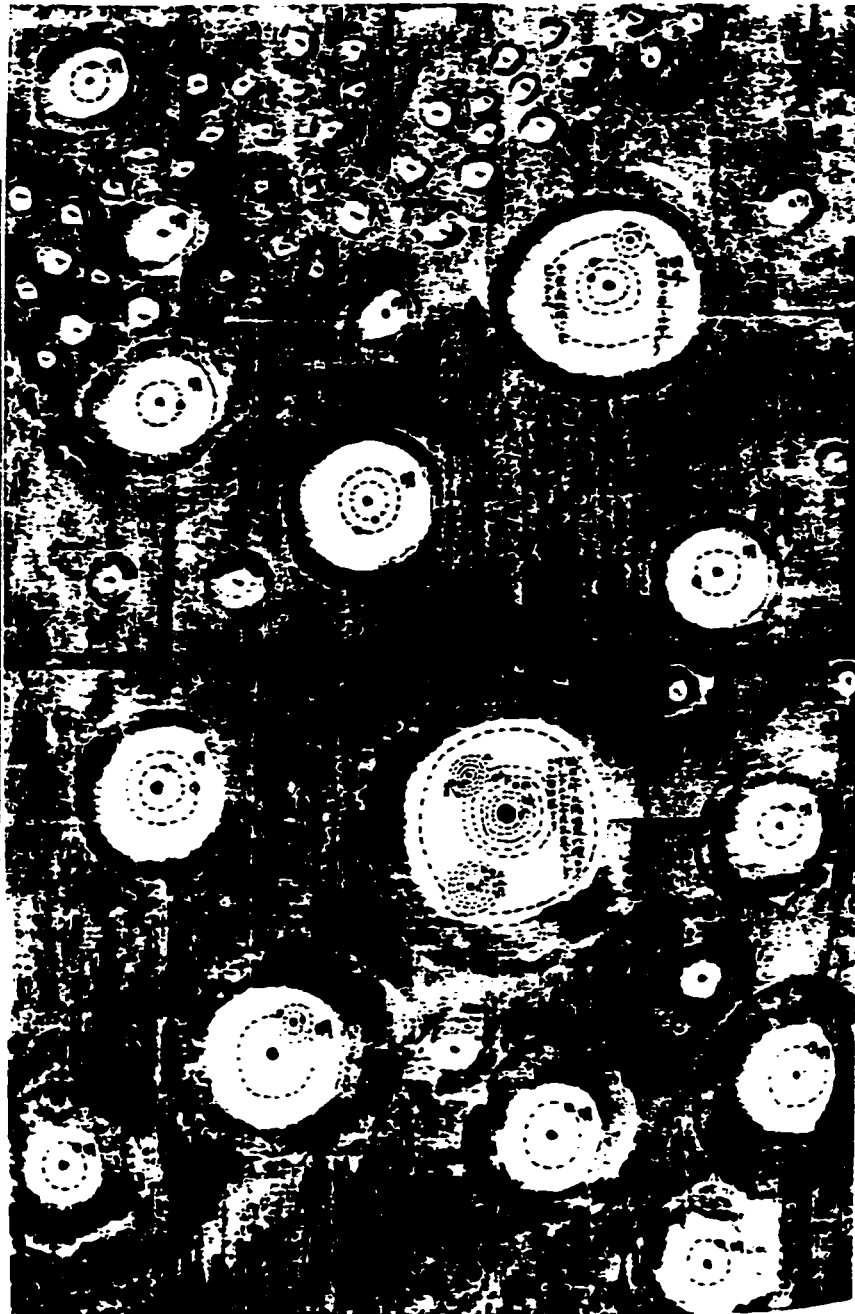




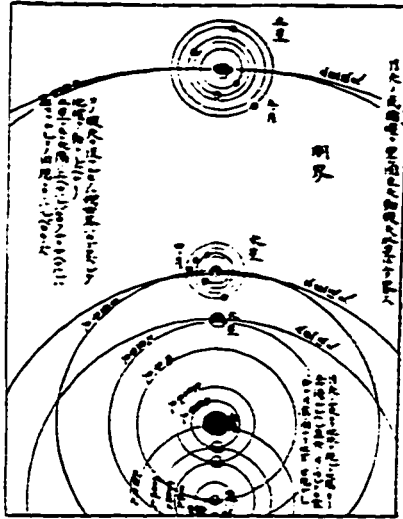
**Figure 21**  
 Pictorial explication of the solar system and its relation with other systems. The dotted lines explicate the movement of comet.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 203.



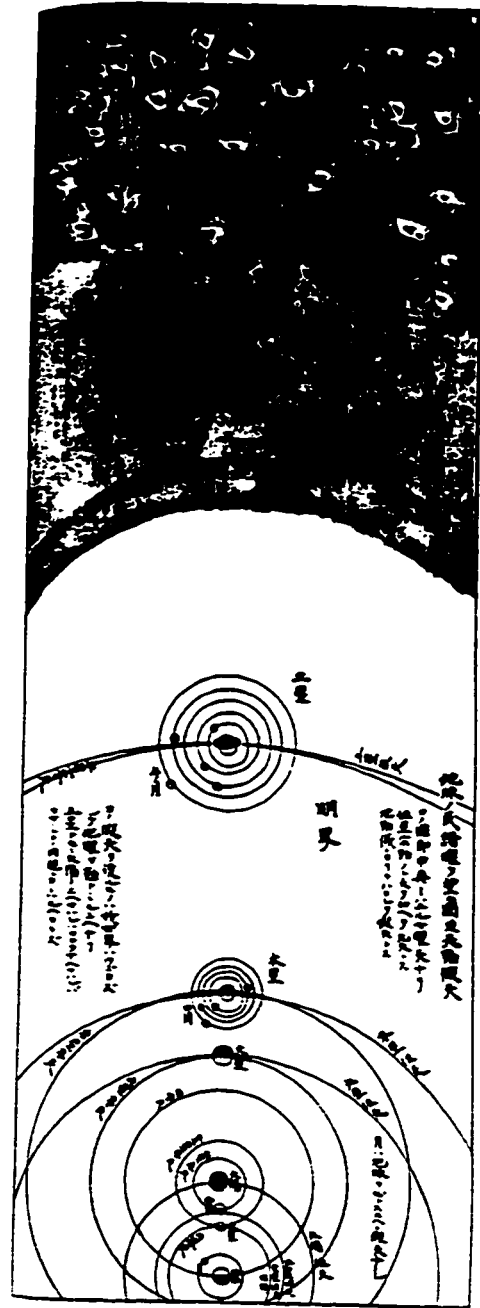
**Figure 22**  
 A horizontal explication of the relation between the solar system and the rest of the universe.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 215.



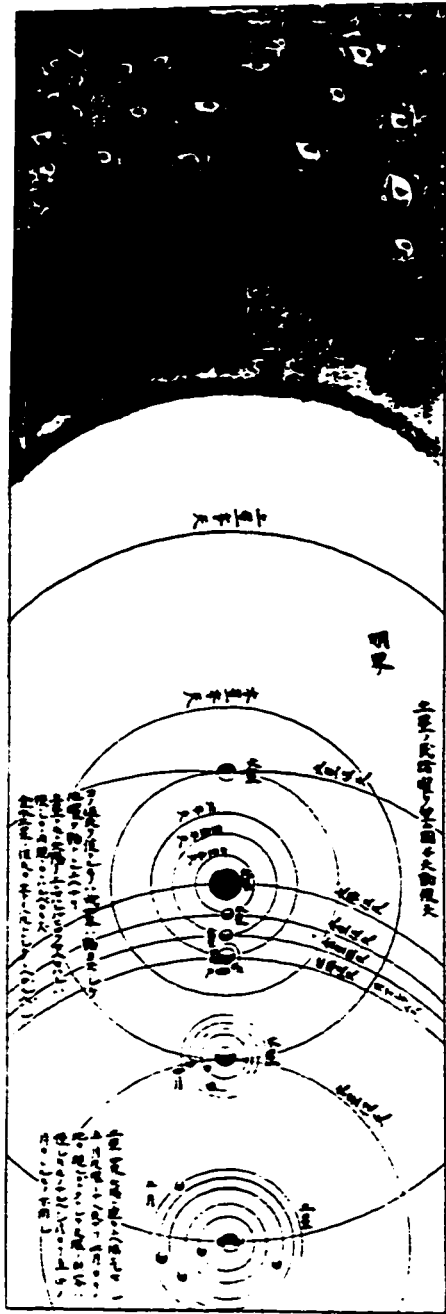
**Figure 23**  
 A bird's-eye view of the systems scattered around the universe.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 217.



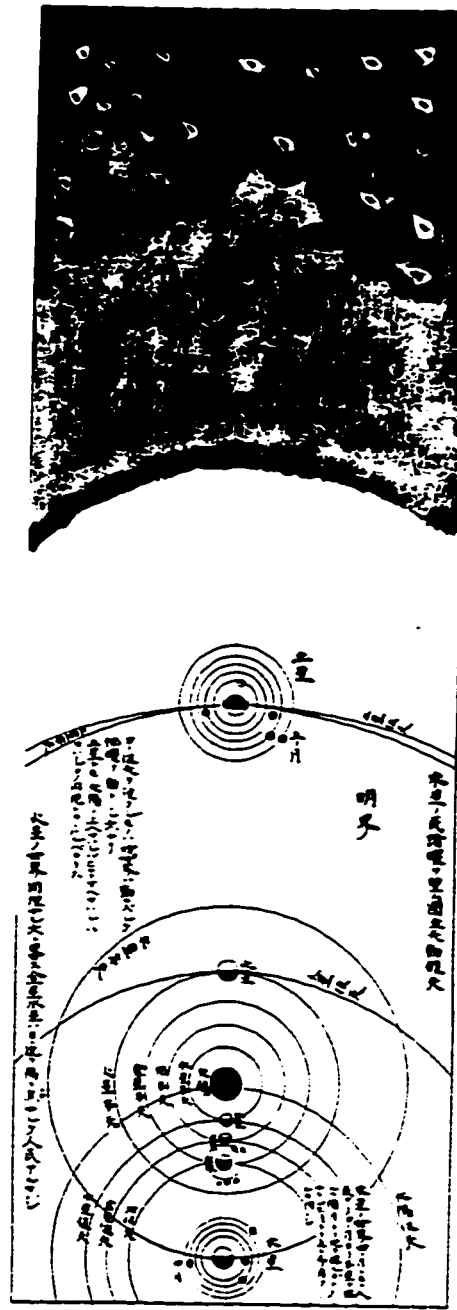
**Figure 24**  
 Pictorial explication of the movement of the heavenly body seen from the surface of the moon.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 220.



**Figure 25**  
 Pictorial explication of the movement of the heavenly bodies seen from the surface of the earth.  
 Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 220



**Figure 26**  
 Pictorial explication of the movement of the heavenly bodies seen from the surface of Saturn. Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 221.



**Figure 27**  
 Pictorial explication of the movement of the heavenly bodies seen from the surface of Jupiter. Arisaka Takamichi and others, eds., *Tominaga Nakamoto Yamagata Bantō. Nihon shisōtaikei*, vol. 43 (Tokyo: Iwanami, 1973), 222.

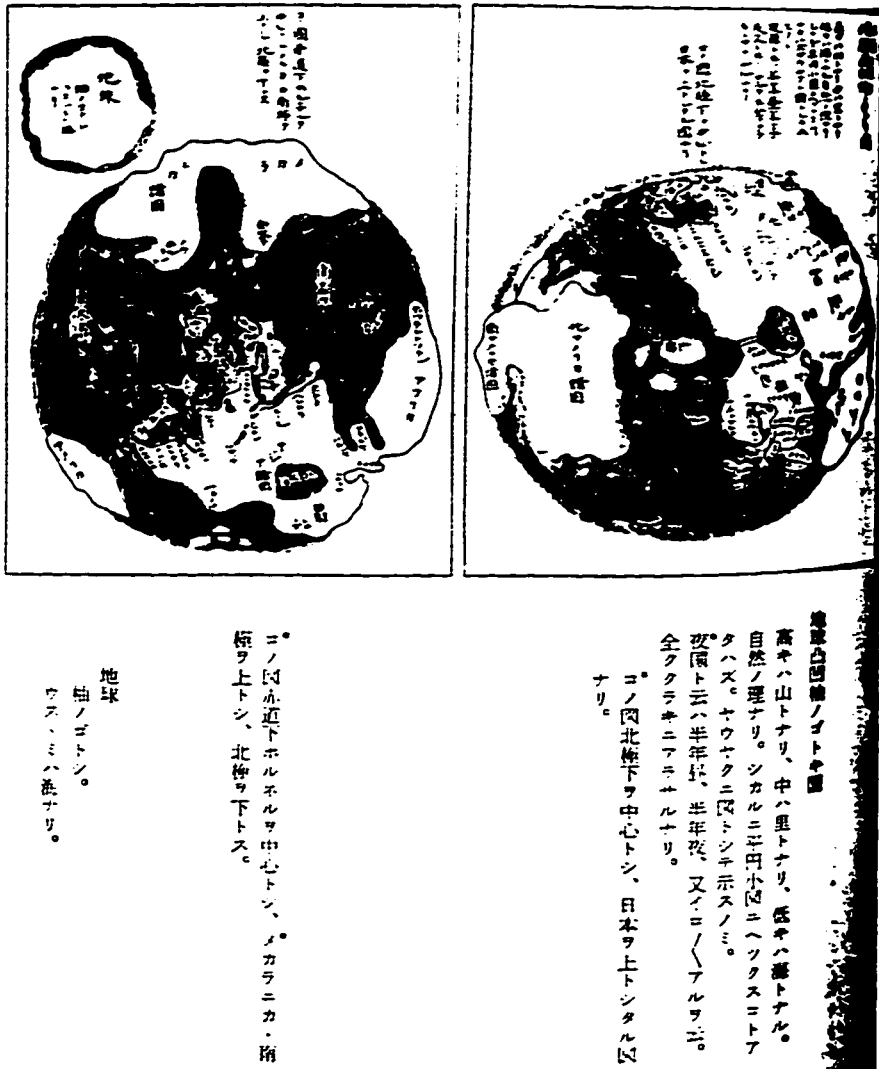
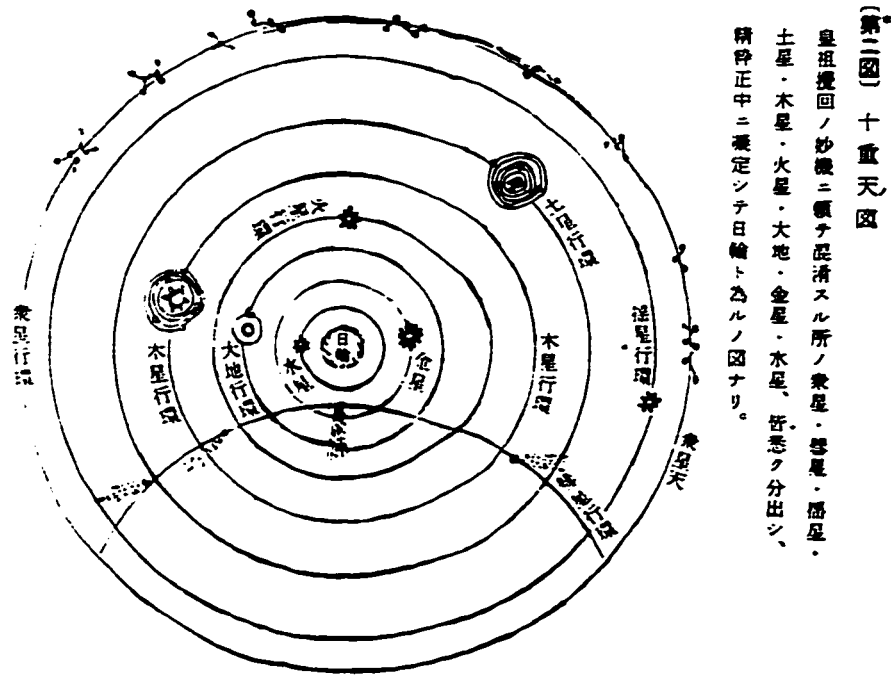


Figure 28  
 Yamagata's picture of the earth.  
 Arisaka Takamichi and others, eds., *Tominaga  
 Nakamoto Yamagata Bantō. Nihon shisōtaikei*,  
 vol. 43 (Tokyo: Iwanami, 1973), 245.



**Figure 29**  
Figure of the world before the divine force created the universe.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikēi*, vol. 45 (Tokyo: Iwanami, 1977), 375.



**Figure 30**  
The solar system in Satō's *Tenchūki*. The sun is located at the center of the system.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikēi*, vol. 45 (Tokyo: Iwanami, 1977), 375.



第三圖 日輪全形

Figure 31  
Figure of the sun seen through a telescope with sun glasses.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45 (Tokyo: Iwanami, 1977), 385.

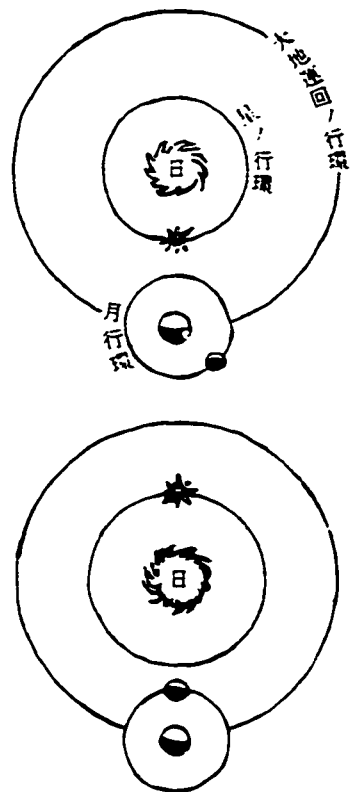
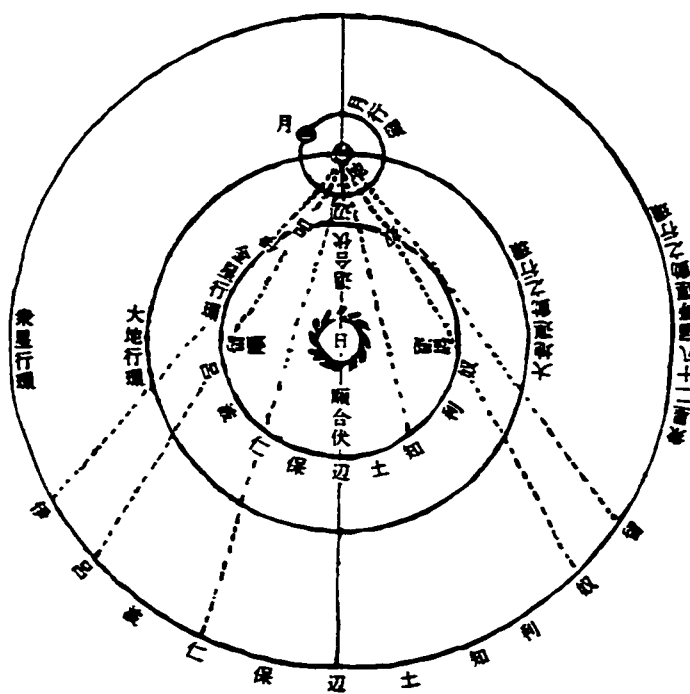
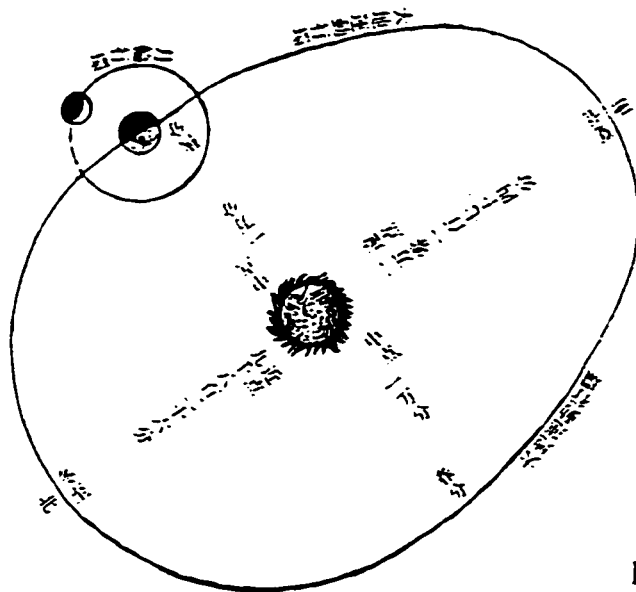


Figure 32  
Orbit of the planet revolving inside of the orbit of the earth.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45 (Tokyo: Iwanami, 1977), 389.



第五圖 金水二星順行・逆行・合伏・順留・返留圖

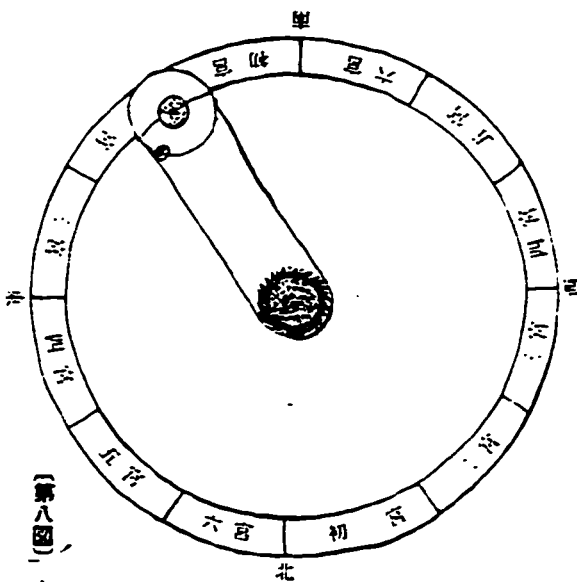
Figure 33  
Pictorial explication of the revolution of Mercury and Venus.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45 (Tokyo: Iwanami, 1977), 391.



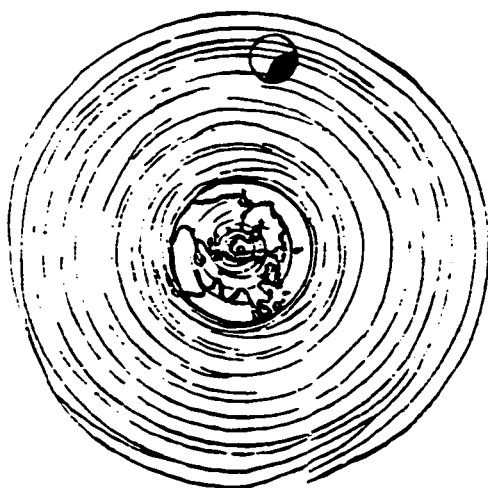
**Figure 34**  
 Pictorial explication of the revolution of the earth and the moon.  
 Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
 (Tokyo: Iwanami, 1977), 393.

(第六圖) 大地行環卵円圖

**Figure 35**  
 Pictorial explication of the relation between the sun and the earth.  
 Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
 (Tokyo: Iwanami, 1977), 397.



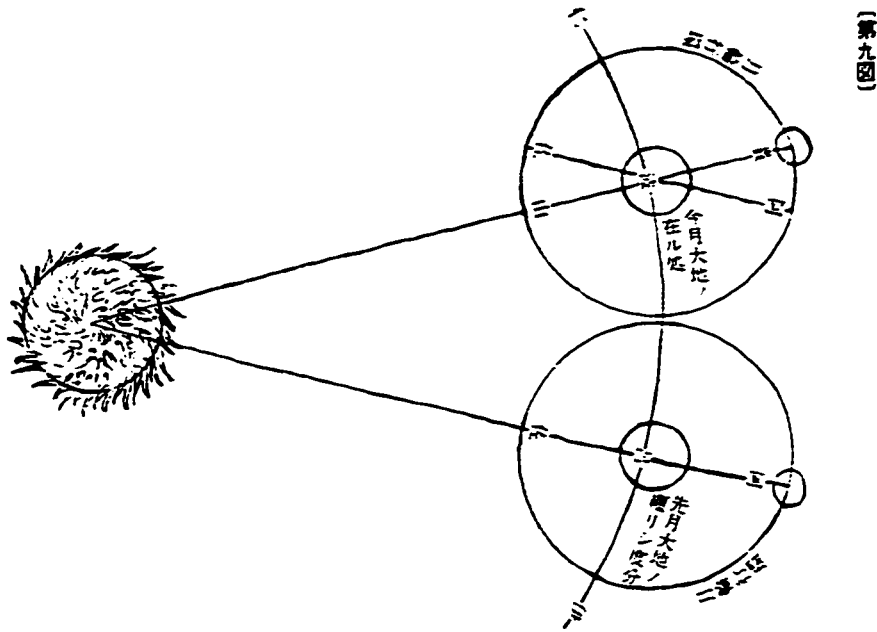
(第七圖) 日輪地球反對圖



(第八圖) 大地旋回圖

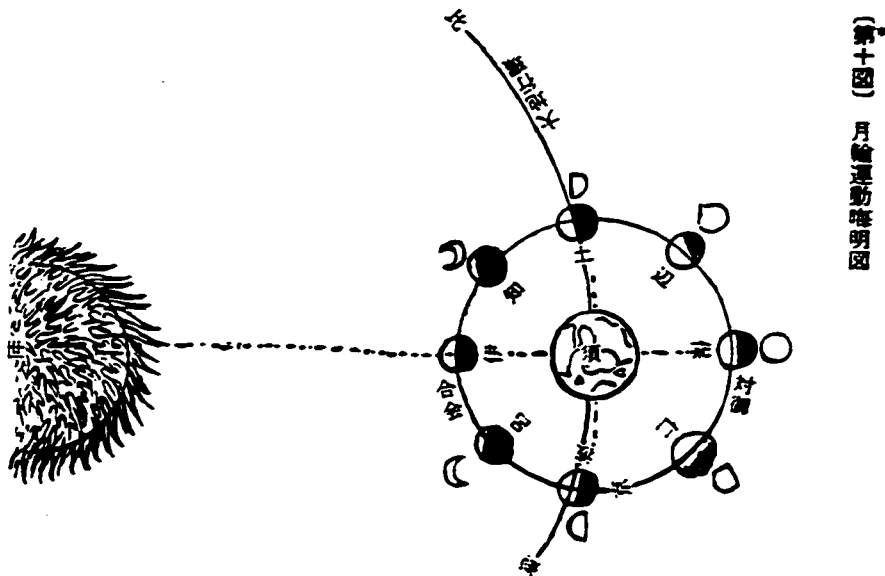
**Figure 36**  
 Rotation of the earth. Satō seems to try to show the high speed of the earth's rotation in this picture.  
 Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
 (Tokyo: Iwanami, 1977), 398.





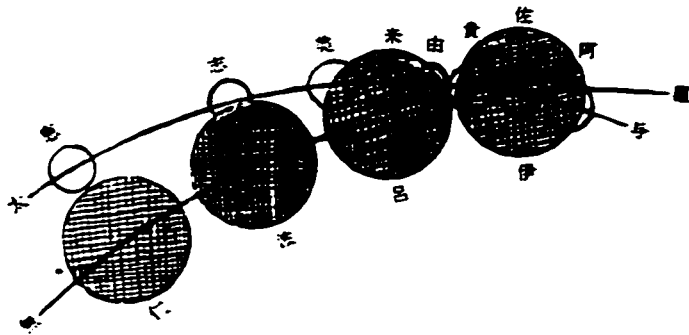
(第九圖)

**Figure 37**  
Orbit of the moon and its relation with the sun and the earth.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
(Tokyo: Iwanami, 1977), 401.



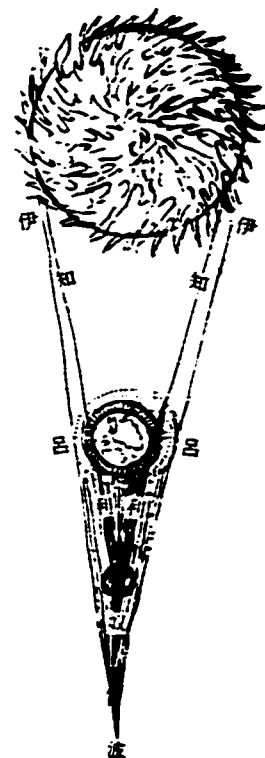
(第十圖) 月輪運動略明図

**Figure 38**  
Revolution of the moon and the shape of the moon seen from the earth.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
(Tokyo: Iwanami, 1977), 404.



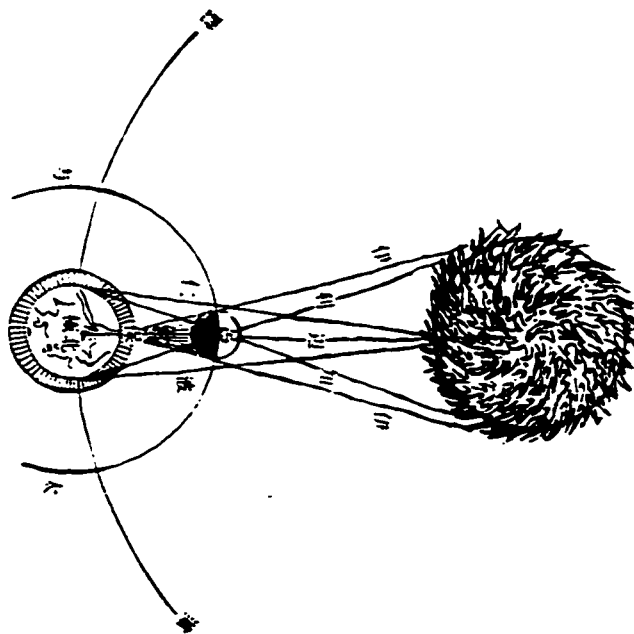
(第十一圖) 月蝕圖

**Figure 39**  
Pictorial explication of the lunar eclipse.  
Shimazaki Takao and others, eds., *Andō Shōeki*  
Satō Nobuhiro. *Nihon shisō taikēi*, vol. 45  
(Tokyo: Iwanami, 1977), 405.



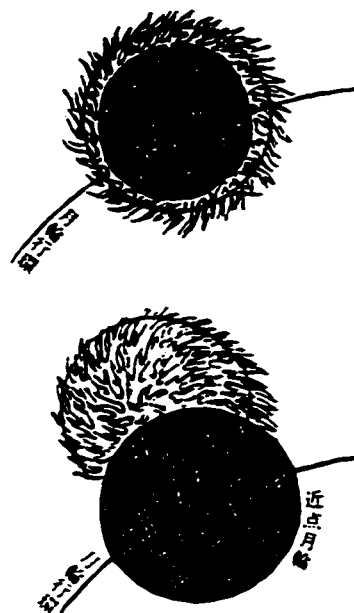
(第十二圖)

**Figure 40**  
Mechanism of the lunar eclipse.  
Shimazaki Takao and others, eds., *Andō Shōeki*  
Satō Nobuhiro. *Nihon shisō taikēi*, vol. 45  
(Tokyo: Iwanami, 1977), 406.



(第十三圖)

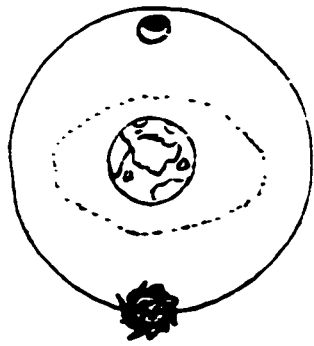
**Figure 41**  
Mechanism of the solar eclipse.  
Shimazaki Takao and others, eds., *Andō Shōeki*  
Satō Nobuhiro. *Nihon shisō taikēi*, vol. 45  
(Tokyo: Iwanami, 1977), 408.



(第十四圖) 全蝕時圖

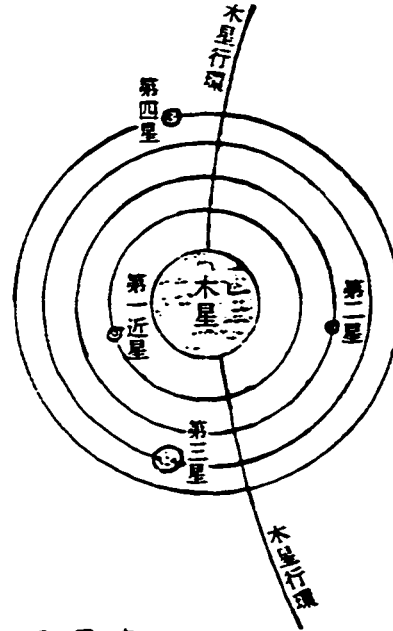
(第十五圖)

**Figure 42**  
Pictorial explication of the solar eclipse.  
Shimazaki Takao and others, eds., *Andō Shōeki*  
Satō Nobuhiro. *Nihon shisō taikēi*, vol. 45  
(Tokyo: Iwanami, 1977), 409.



(第十五圖) 日月挾地庄水氣圖

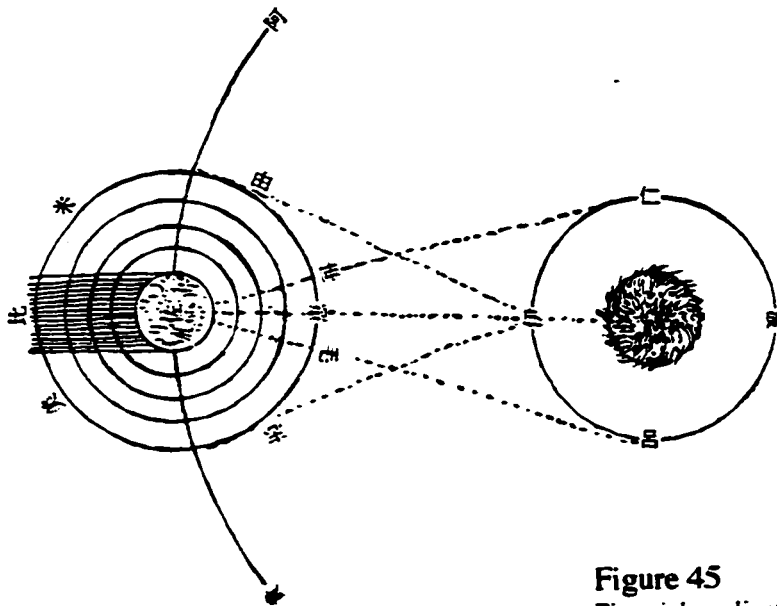
Figure 43  
Pictorial explication of the ebb and flow.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
(Tokyo: Iwanami, 1977), 410.



(第十六圖) 木星及四小星圖

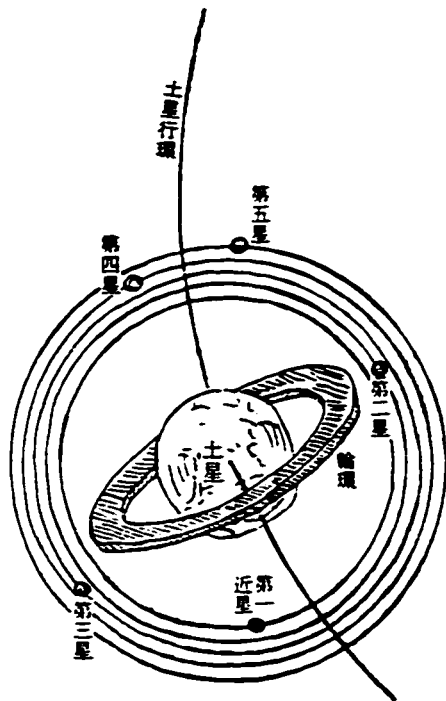
木星ハ常ニ此  
四小星ヲ本ヒ  
テ運回ス。

Figure 44  
Jupiter and its four satellites.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
(Tokyo: Iwanami, 1977), 412.



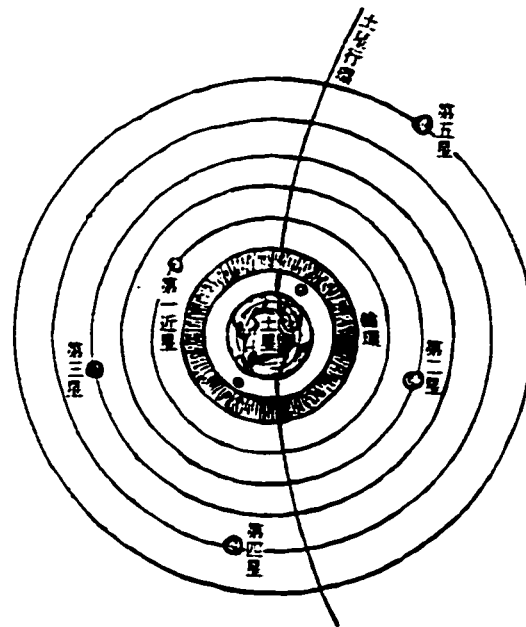
(第十七圖) 木星及小星正行進行圖

Figure 45  
Pictorial explication of movement of the Jupiter  
and its satellites seen from the earth.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taikai*, vol. 45  
(Tokyo: Iwanami, 1977), 413.



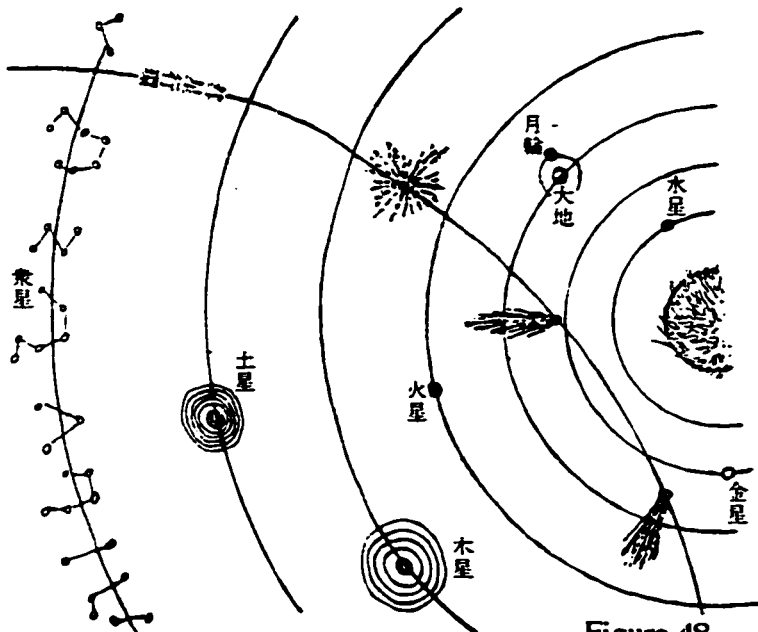
(第十八圖) 土星輪環及小星圖

Figure 46  
Saturn and its satellites.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taiki*, vol. 45  
(Tokyo: Iwanami, 1977), 415.



(第十九圖)

Figure 47  
Ring of Saturn and the movement of satellites.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taiki*, vol. 45  
(Tokyo: Iwanami, 1977), 416.



(第二十圖)

Figure 48  
Bird's eye view of the solar system and the movement of the comet.  
Shimazaki Takao and others, eds., *Andō Shōeki Satō Nobuhiro. Nihon shisō taiki*, vol. 45  
(Tokyo: Iwanami, 1977), 419.



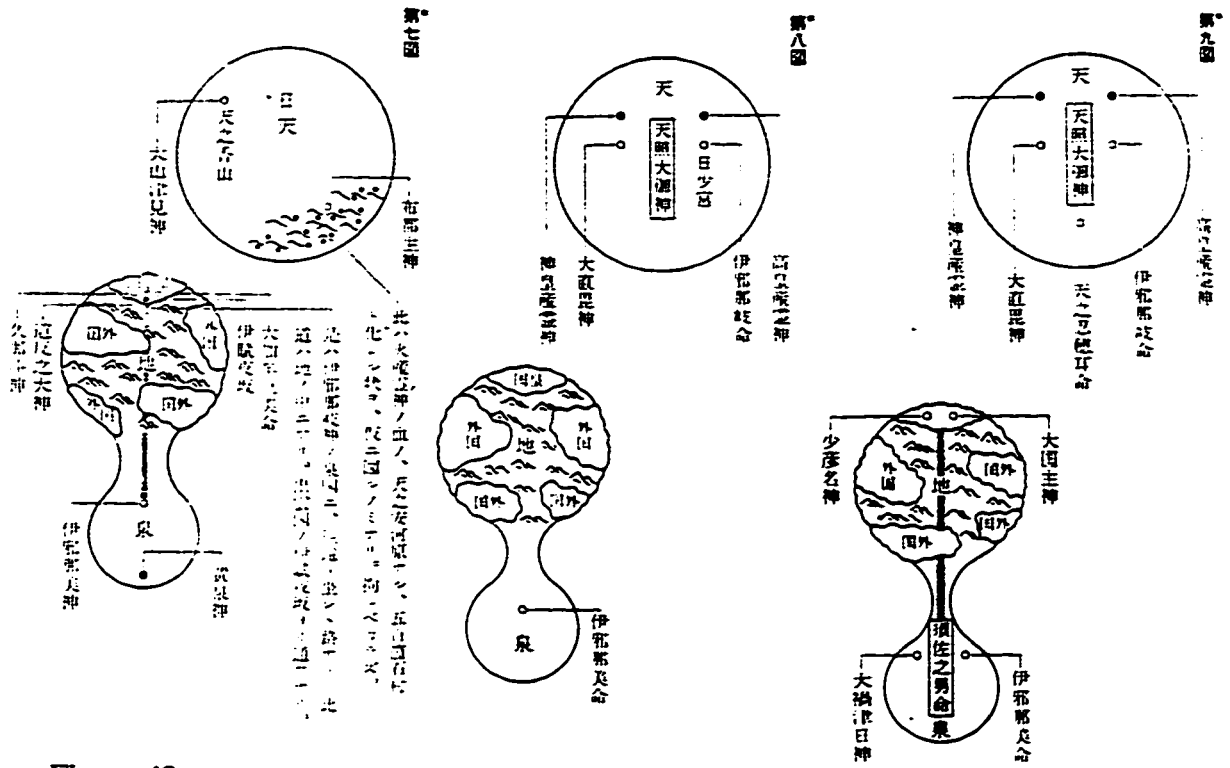
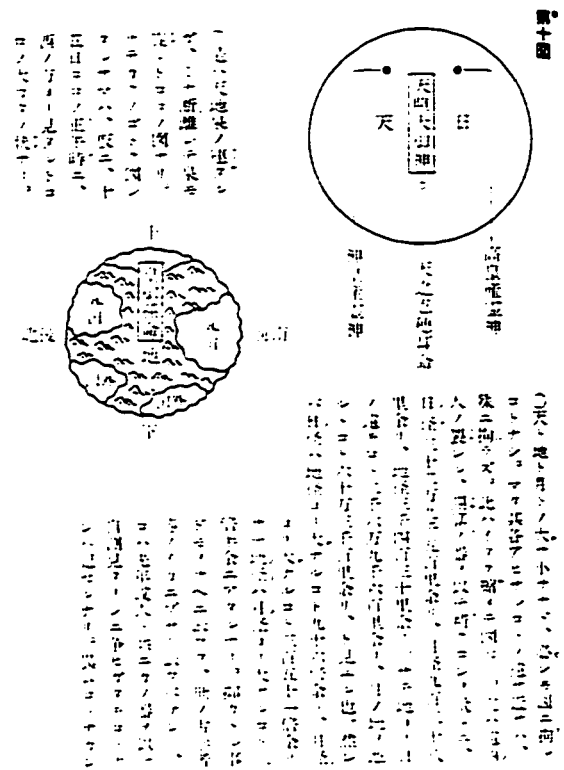


Figure 29

Hirata Atsutane's pictorial explanation of the creation of the universe. These pictures explain the creation of the sun, the moon, and the earth from an empty space, based on the statements in ancient Japanese texts.

Saeki Arikiyo and others eds., *Hirata Atsutane Ban Nobutomo Okuni Takamasa. Nihon shisō taikēi*, vol. 50 (Tokyo: Iwanami, 1973), 17, 18, 21, 24, 27, 30, 41, 50, 58, 71.



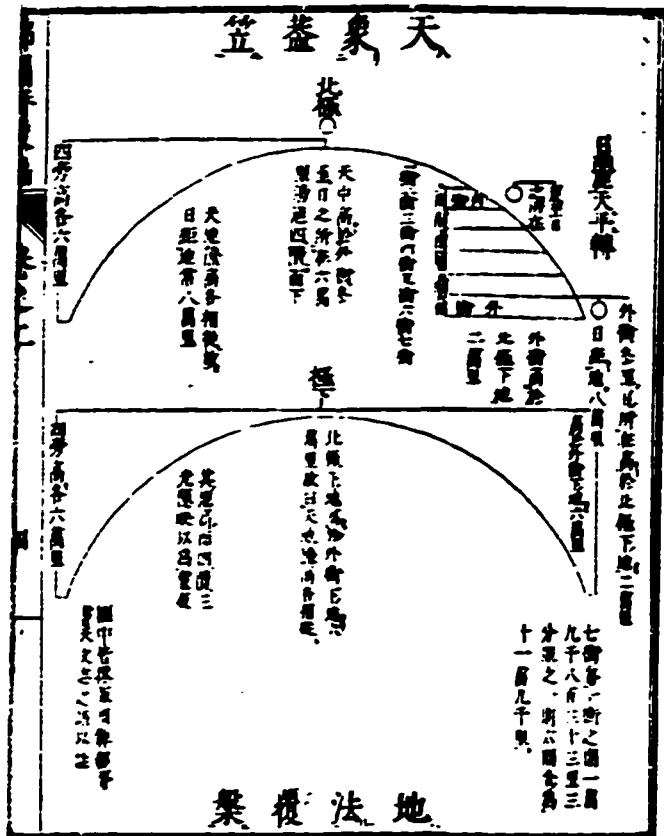
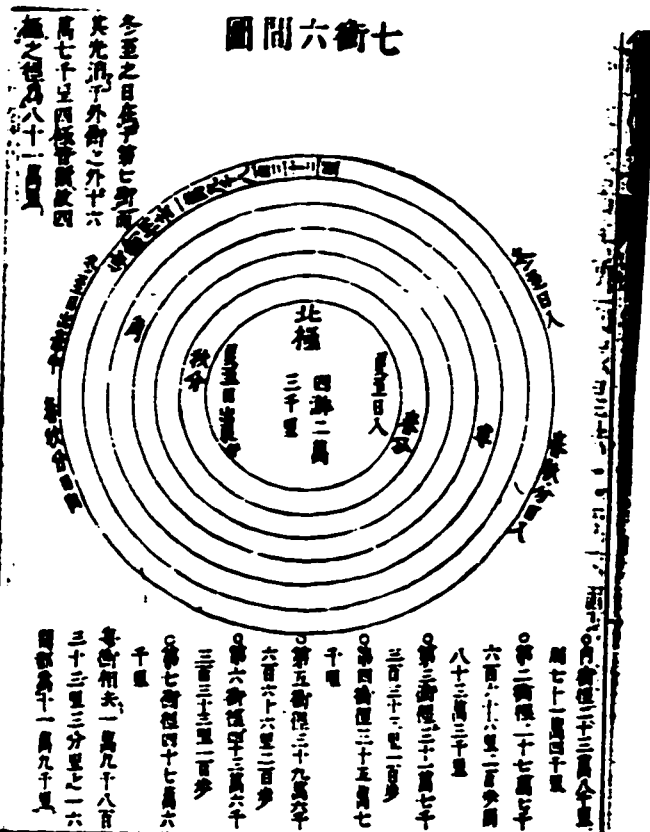


Figure 50  
Dome theory in the Chinese texts.  
Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 4.

Figure 51  
Movement of the sun based on the dome theory.  
Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 4.



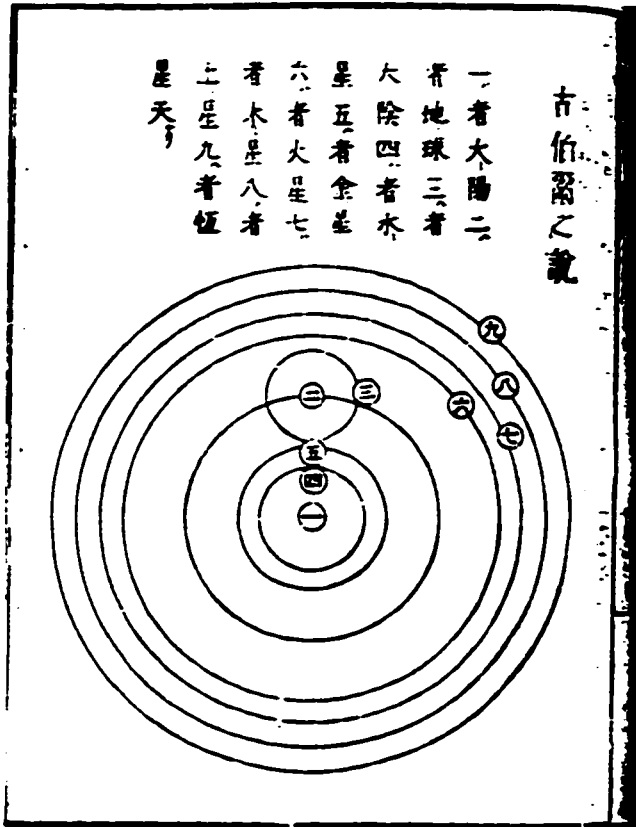


Figure 52  
 Entsū's introduction of Copernicus's theory.  
 Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 24.

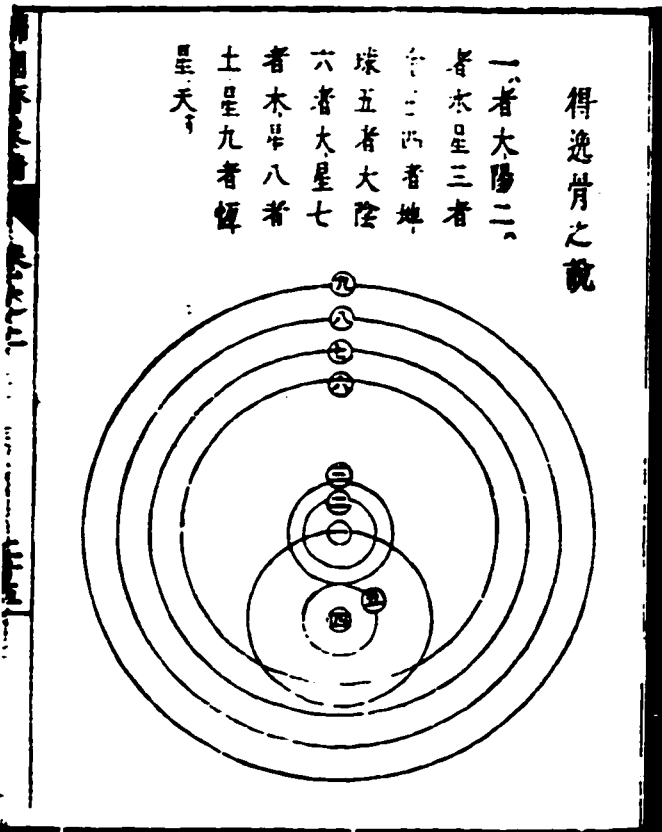


Figure 53  
 Entsū's introduction of Tycho Brahe's theory.  
 Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 25.



圖之里千分一地球

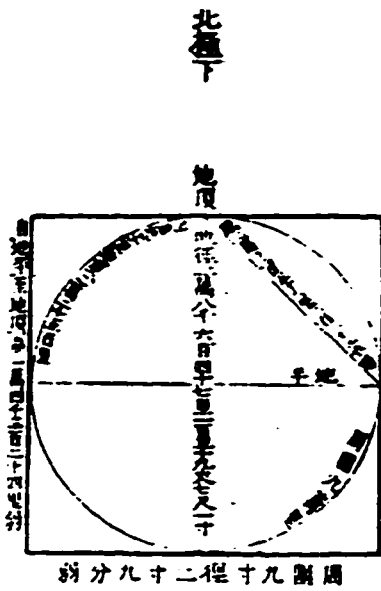


Figure 54

Pictorial explication of the slope of the surface of the spherical earth.

Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 38.



Figure 56

Pictorial explication of the horizontal movement of the sun.

Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 43.

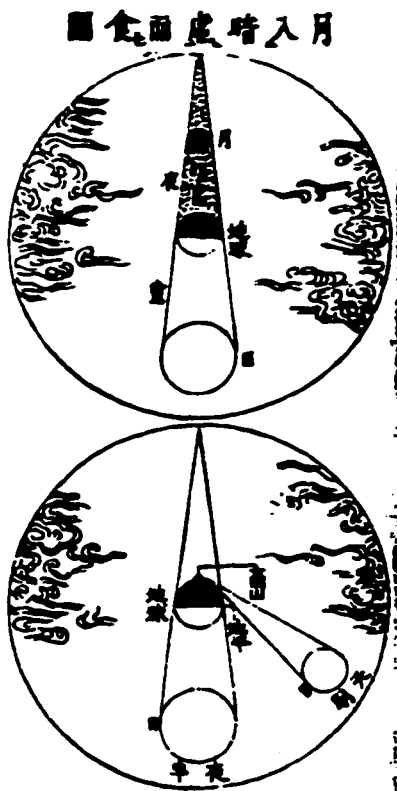


Figure 55

Pictorial criticism of the vertical movement of the sun.

Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 41.

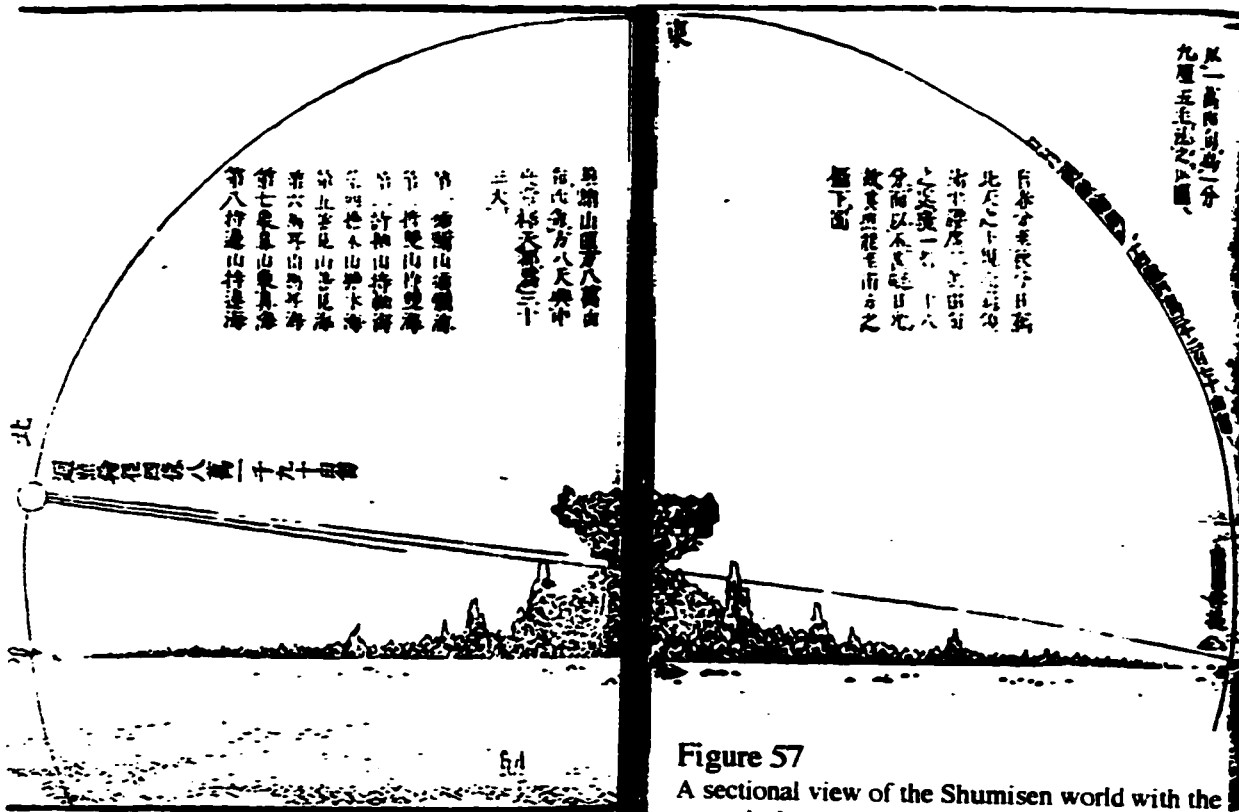
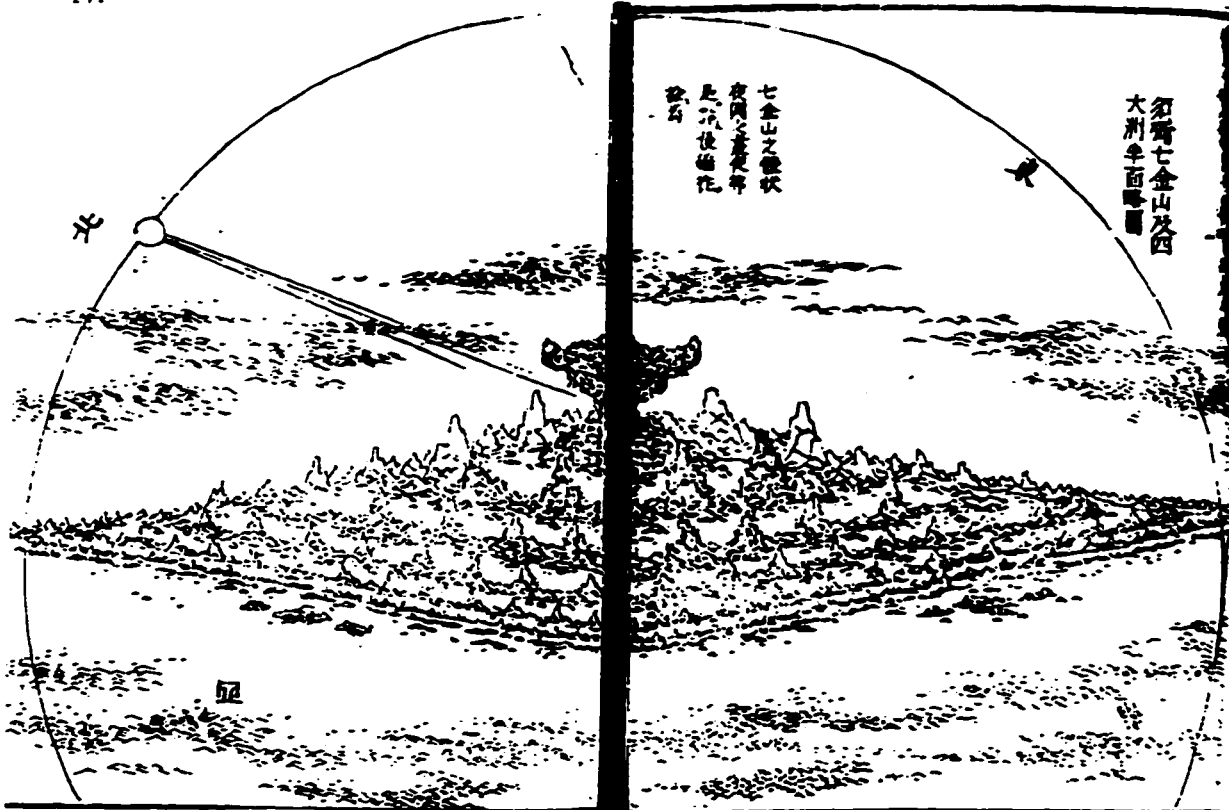


Figure 57  
A sectional view of the Shumisen world with the numerical explanation of the movement of the sun.  
Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 15-16.

Figure 58  
A Bird's eye view of the Shumisen world.  
Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 16-17.



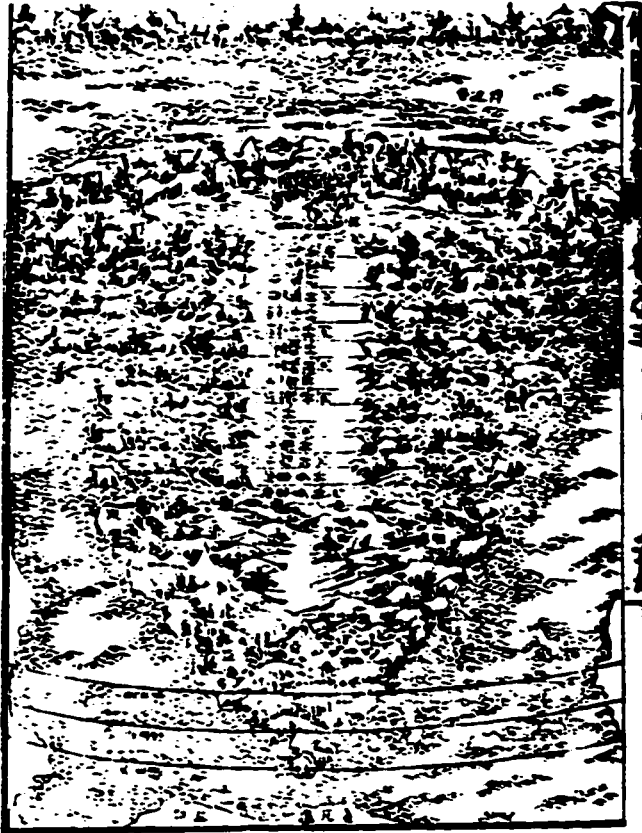
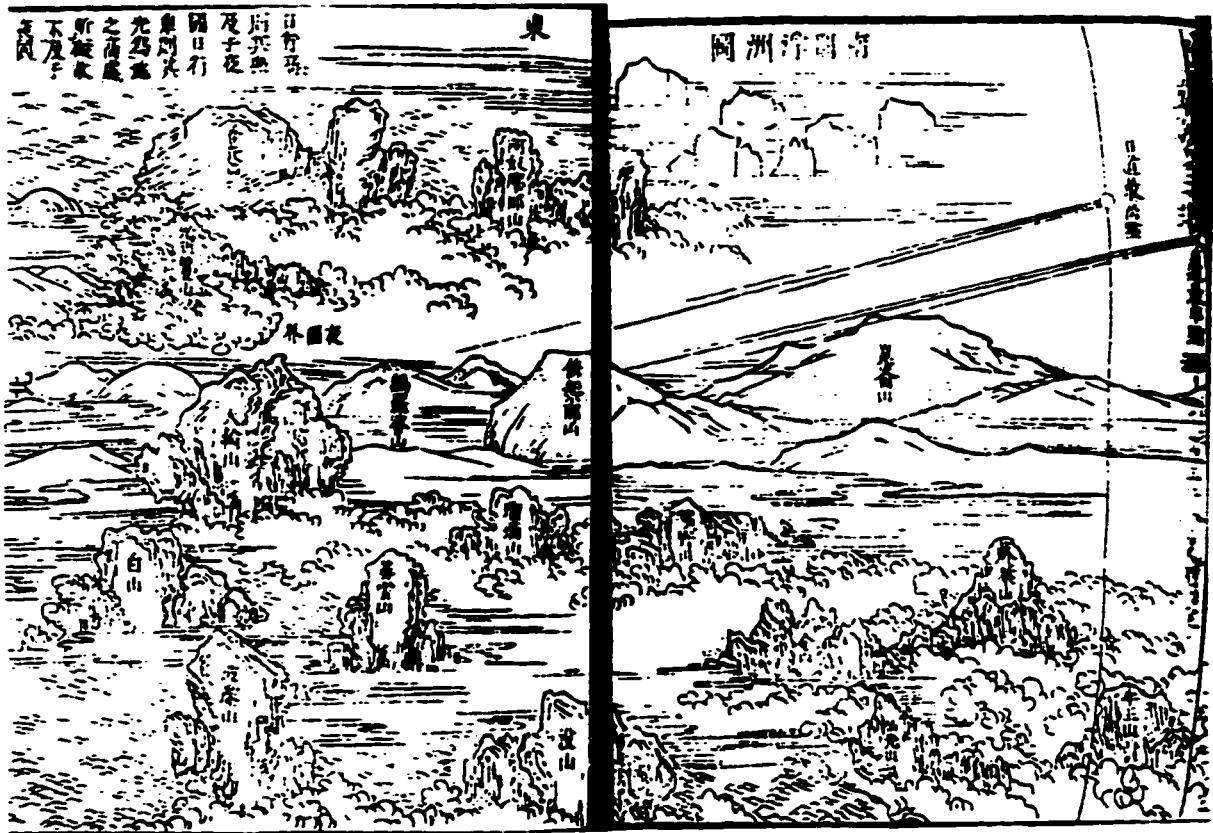
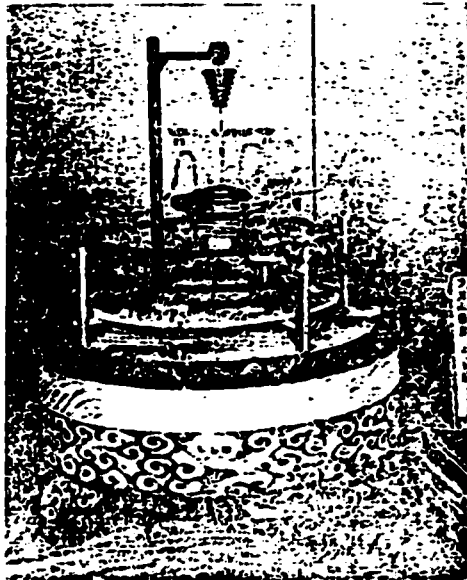


Figure 59  
A geographical picture of Enbudai island.  
Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 29.

Figure 60  
A Bird's eye view of Enbudai island with the pictorial explication of the movement of the sun.  
Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 17-18.

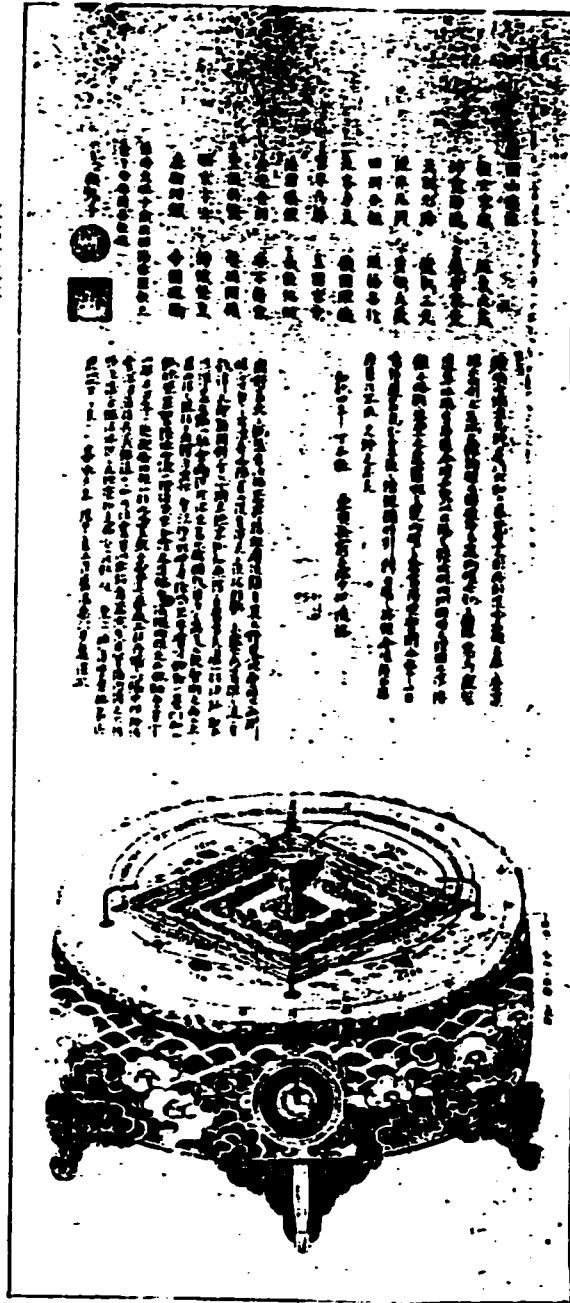




大原市近藤翁氏所藏

文化十五年  
門律圖書  
須彌山儀

**Figure 61**  
Entsū's miniature mechanical model of the world. The sun and the moon could be moved in accordance with Entsū's calendar system. This picture is taken by Kudō Kōkai over 50 years ago.  
Kudō Kōkai, "Fumon risshi no Bonreki undō to shūno ryakuden," *Meiji shōtoku kinen gakkaihō* 56 (1941): 38.



**Figure 62**  
*Shumisengi mei narabini jo* (the model of the Shumisen world and its introduction).  
Ono Genmyō, "Bukkyō tennongaku," no. 8, *Gendai Bukkyō* 4-33 (1927), 123.

圖氣節異寔易夜晝洲四

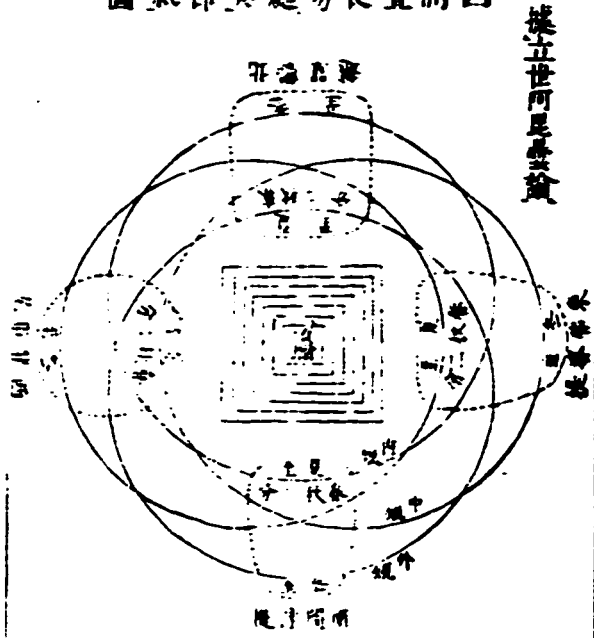


Figure 63  
Pictorial explication of the change of season based on the statements in the Buddhist scriptures. Entsū, *Bukkoku rekishōhen*, vol. 4 (1810), 19.

圖規二道黃洲四

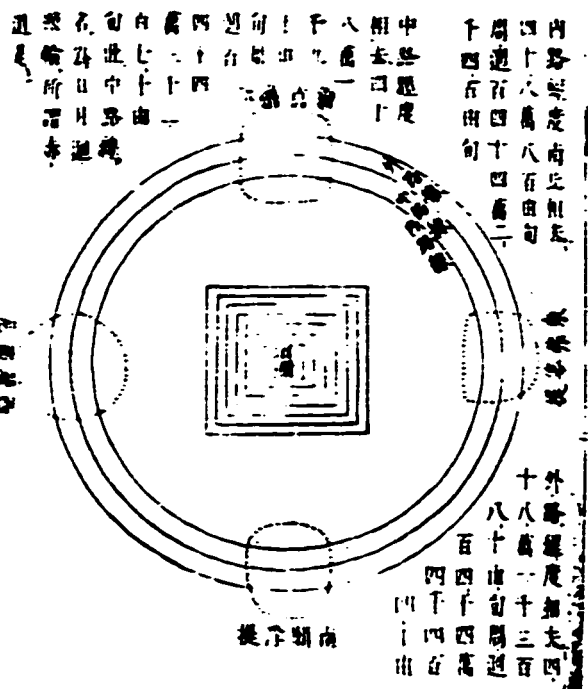


Figure 64  
Pictorial explication of the movement of the sun based on the statements in the Buddhist scripture. Entsū, *Bukkoku rekishōhen*, vol. 4 (1810), 19.

日所在約南  
洲以配晝夜  
十二時圖

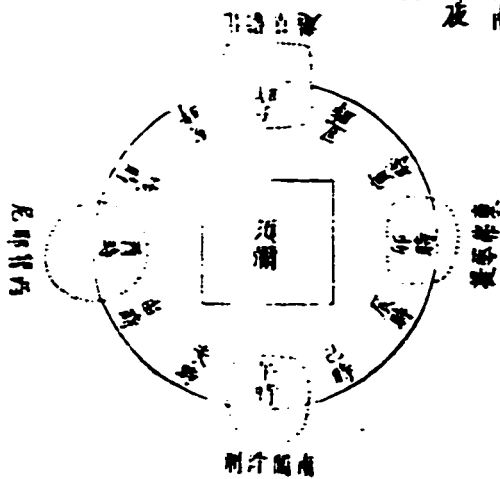


Figure 65  
Pictorial explication of the change of the time based on the statements in the Buddhist scripture. Entsū, *Bukkoku rekishōhen*, vol. 4 (1810), 20.

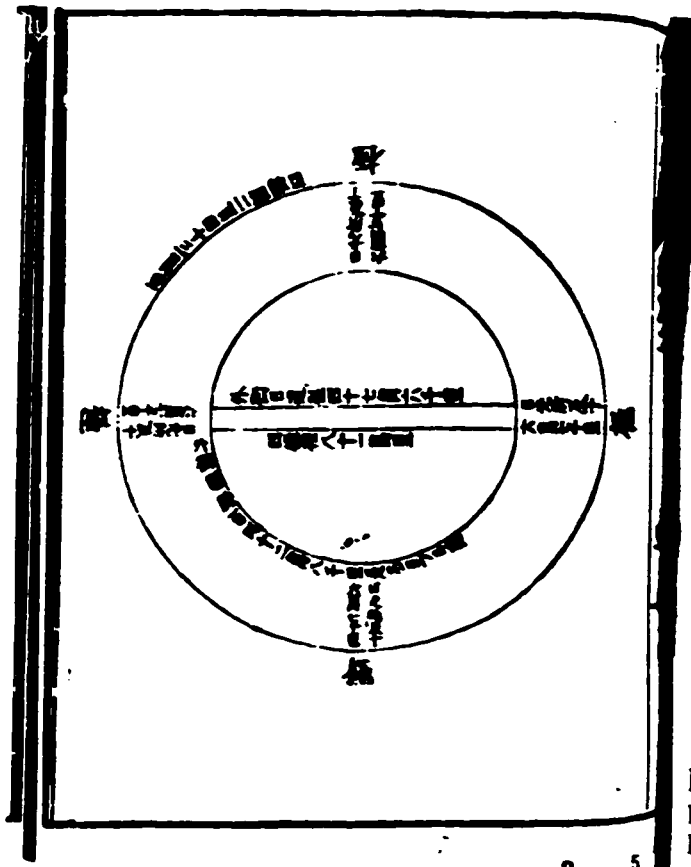
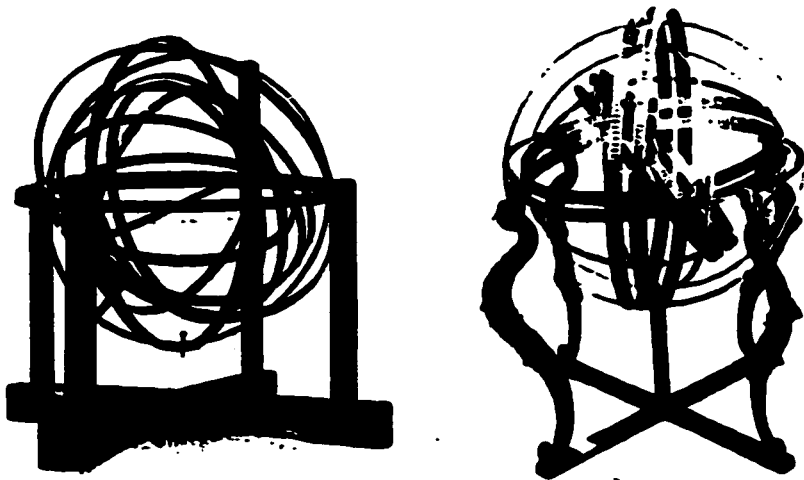


Figure 66  
Pictorial explanation of the orbit of the sun.  
Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 3.



渾天儀  
御寬文九年作製  
御伊能忠敬所用

Figure 67  
Pictures of *Kontengi*. The right one was made in  
1669 and the left was a belongings of Inō  
Tadataka.  
*Kokushi daijiten*, vol. 2 (Tokyo: Yoshikawa  
kōbunkan, 1987), 94.

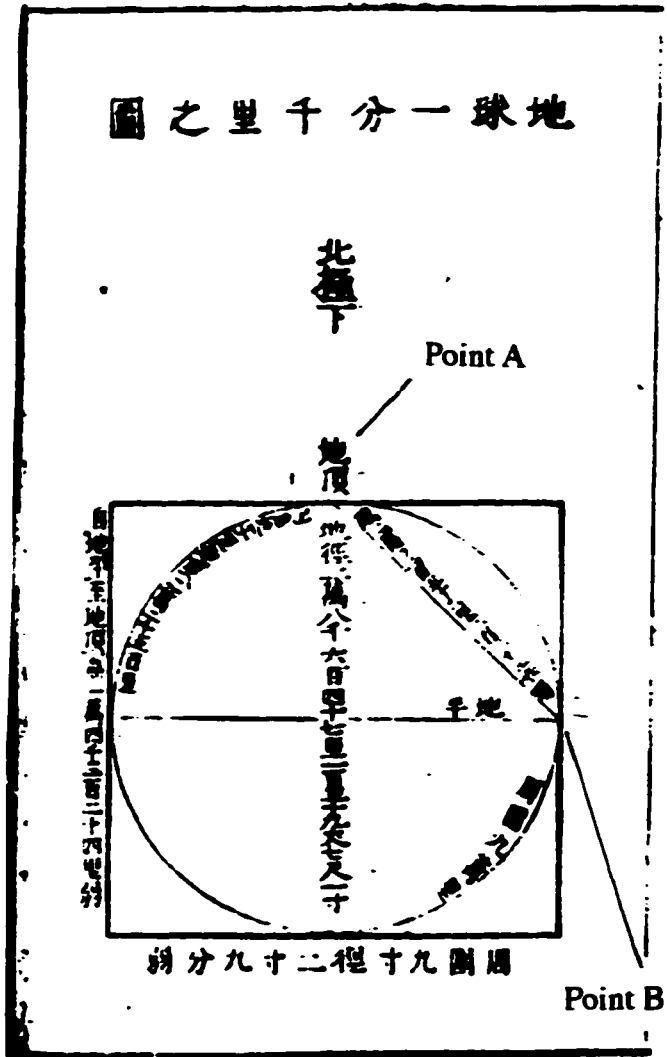


Figure 68  
 Pictorial explication of the slope of the surface of the spherical earth. Point A is the top of the earth and Point B is a horizontal end of the earth. Entsū, *Bukkoku rekishōhen*, vol. 2 (1810), 38.



**Figure 69**  
 The world map depicted as the Enbudai island  
 Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 29.





**Figure 71**  
 The world map that depicted India, China, and Japan on the Enbudai island. This map entitled *Gotenjiuzu* is one of the oldest Buddhist world map in Japan. 1364.  
*Kokushi daijiten*, vol. 3 (Tokyo: Yoshikawa kōbunkan, 1987), Figure 1.



**Figure 70**  
 Matteo Ricci's world map. This is a replica of Ricci's world map made in the late Edo period.  
*Kokushi daijiten*, vol. 3 (Tokyo: Yoshikawa kōbunkan, 1987), Figure 5.



太陰白道宿度

印庚 角月氏心胃畢參昴觜井柳張角氏  
 印庚 角月氏心胃畢參昴觜井柳張角氏  
 印庚 角月氏心胃畢參昴觜井柳張角氏

黑博文 印庚 角月氏心胃畢參昴觜井柳張角氏

- 一 診 亢房尾斗虛壁胃畢參柳張
- 二 角氏心箕女危奎昴觜井星翼
- 三 亢房尾斗虛室婁畢參昴張軫
- 四 氏心箕女危壁胃觜井柳翼角
- 五 房尾斗虛室奎昴參昴觜柳張角
- 六 心箕女危壁婁觜井柳張角氏
- 七 尾斗虛室奎胃觜星翼亢房
- 八 箕女危壁婁昴參柳張軫心
- 九 斗虛室奎胃畢井星翼角房尾
- 十 女危壁婁昴觜星張軫心心箕
- 十一 虛室奎胃畢參柳翼角氏尾斗
- 十二 危壁婁昴觜井星軫亢房箕女
- 十三 室奎胃畢參昴張角氏心斗虛
- 十四 壁婁昴觜井柳翼亢房尾女危
- 十五 奎胃畢參昴星張軫心心箕虛室

是黑月十五日也。由月有大小故星軫其宿之外  
 九宿者成。其兩日三宿。不疊日者。其有深致其也  
 日者以三合可解。前合並合復合是也。

白博文

- 一 奎胃畢參昴張角氏心斗虛室
- 二 婁昴觜井柳翼亢房尾女危壁
- 三 胃畢參昴星軫氏心箕虛室奎
- 四 昴觜井柳張角房尾斗危壁婁
- 五 畢參昴星翼亢心箕女室奎胃
- 六 觜井柳張軫心尾斗虛壁婁昴
- 七 參昴星翼角房箕女危奎胃
- 八 井柳張軫亢心斗虛室婁
- 九 鬼星翼角氏尾女危壁胃
- 十 柳張軫亢房箕虛室奎昴
- 十一 星翼角氏心斗危壁婁畢
- 十二 張軫亢房尾女室奎胃觜
- 十三 翼角氏心箕虛壁婁昴參
- 十四 軫亢房尾斗危奎胃畢井
- 十五 角氏心箕女室婁昴觜星

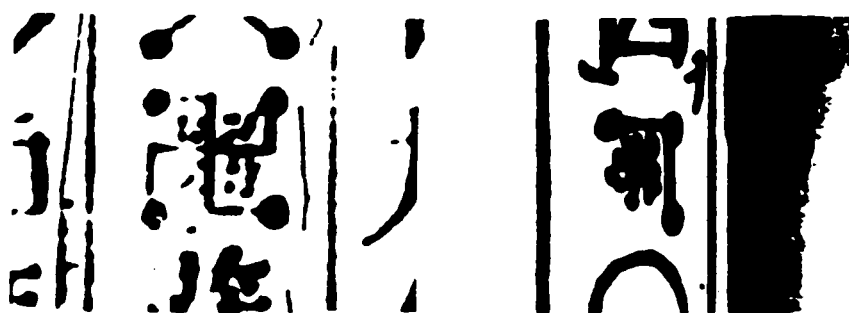
Figure 72  
 Arrangement of the twenty eight stars on the  
 dates of the year.  
 Entsū, Bukkoku rekishōhen, vol. 4 (1810), 10-  
 11.



73-a

73-b

73-c



73-d

73-e

Figure 74

*Nansenbushū bankoku shōka no zu*. This world map depicted on the Enbudai island was published in 1710.

Oji Toshiaki, "Echizu ni arawareta sekaizō." in vol. 7 of *Nihon no shakaishi* (Tokyo: Iwanami, 1987), 333.

Figure 73

Variation of *Ki shuku*. Most of the twenty eight stars compose a constellation.

Entsū, *Bukkoku rekishōhen*, vol. 4 (1810), 17

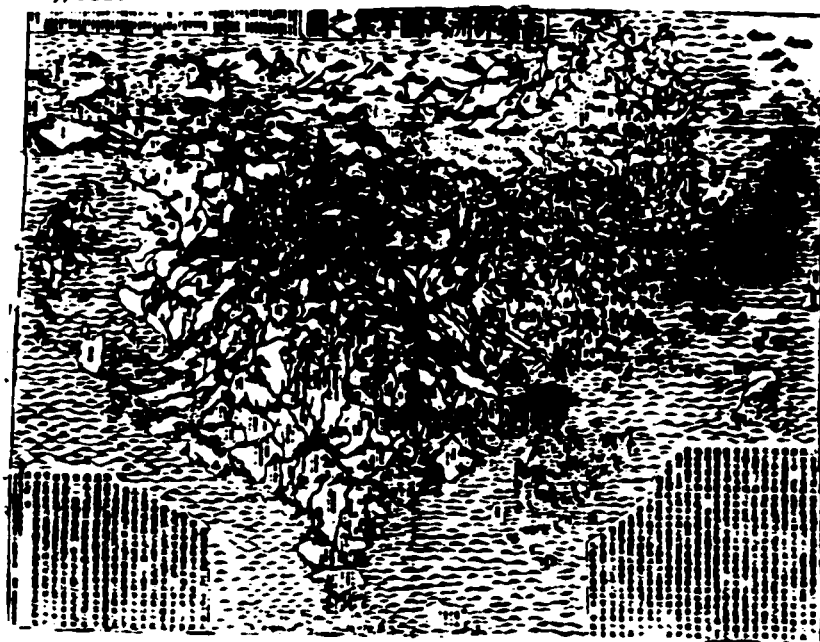
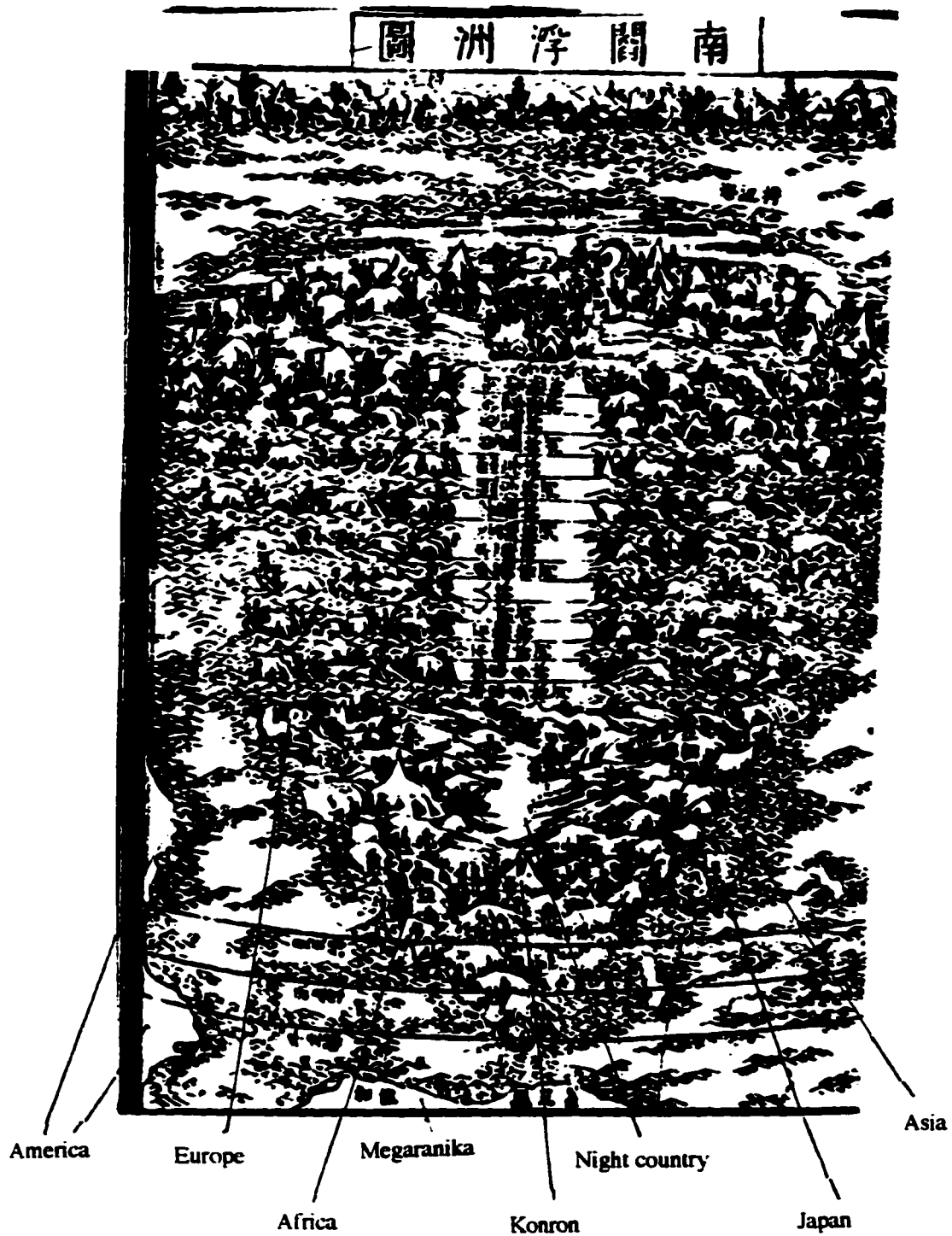


图 7-1 鳳澤「南瞻部洲万国象集之图」(宝永 7 = 1710 年, 京都大学文学部蔵)

Figure 75

The world map depicted as the Enbudai island.  
The three lines at the bottom of the picture are  
the orbits of the sun.

Entsū, *Bukkoku rekishōhen*, vol. 3 (1810), 29.



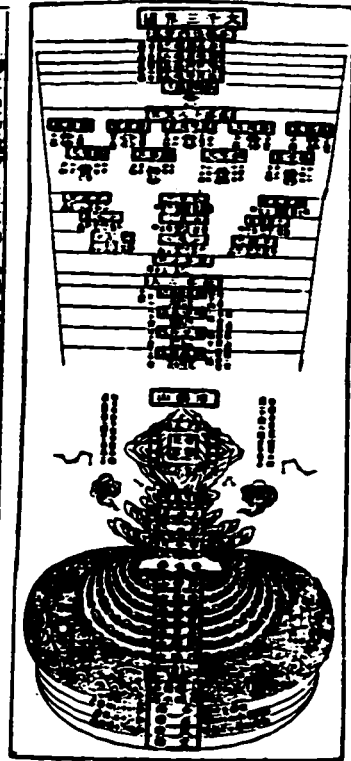


(四十六) 天竺國圖

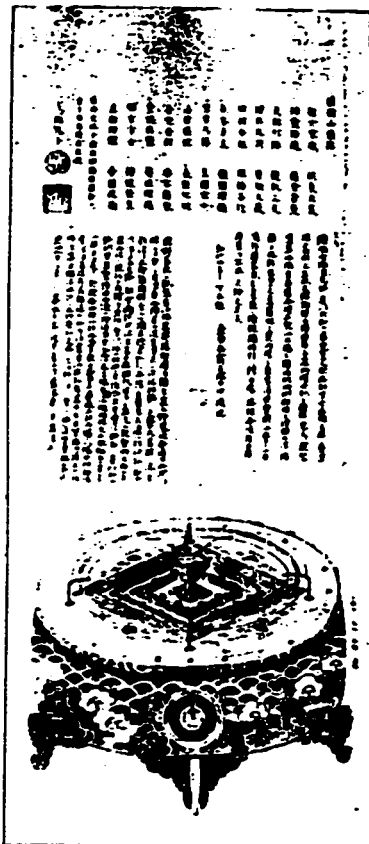
76-a



76-b



76-c

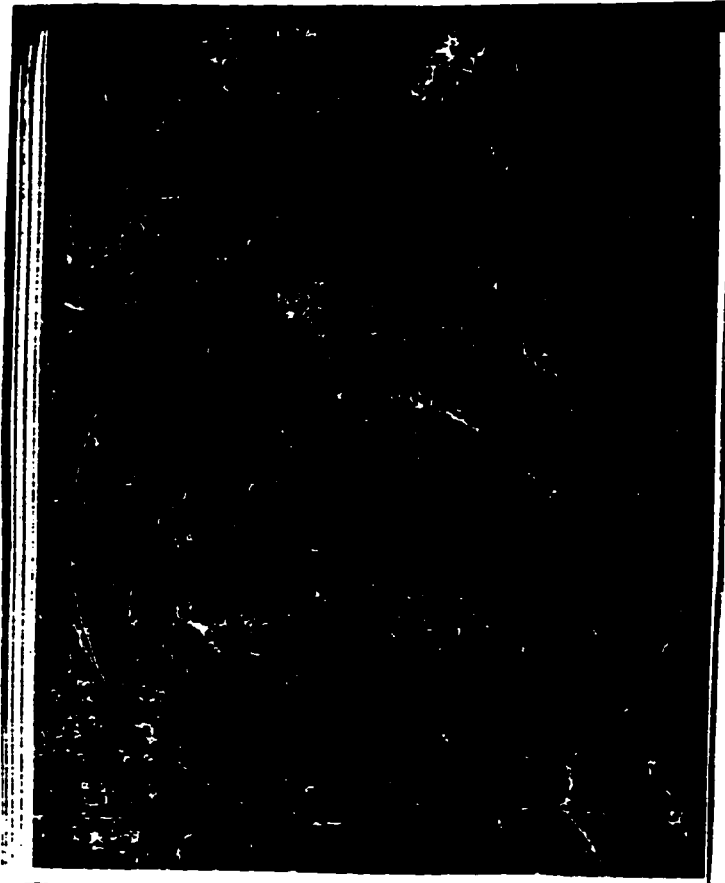


76-d



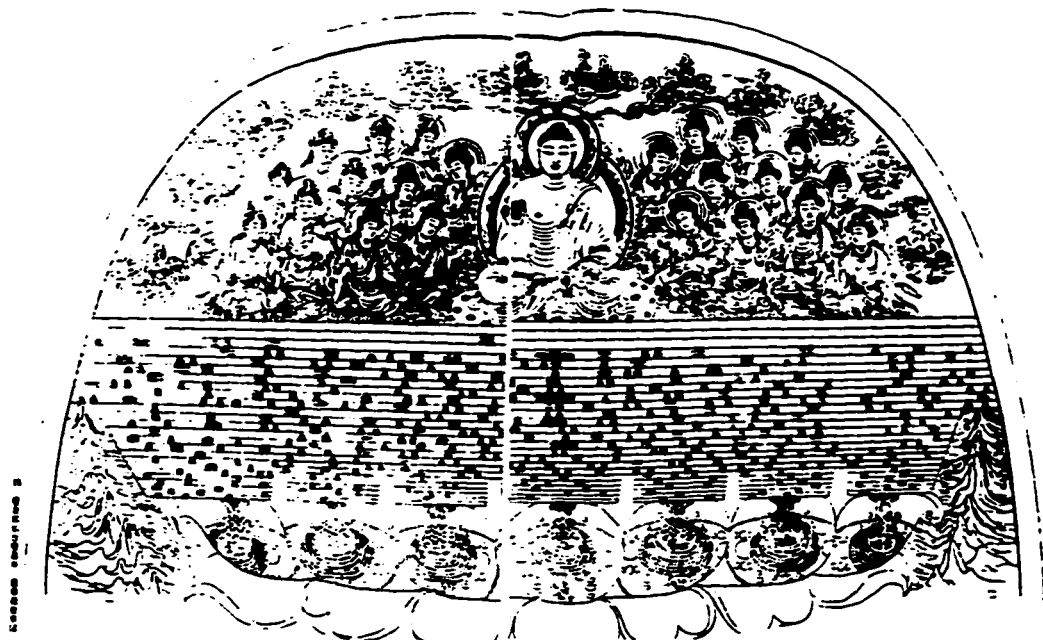
76-e

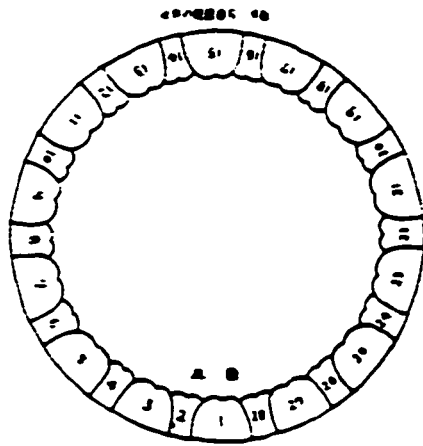
Figure 76  
The pictorial representations of the Shumisen world cited in Ono Genmyō's *Bukkyō tennongaku*.  
Ono Genmyō, *Bukkyō tennongaku*, no. 1-8,  
*Gendai Bukkyō* 3-24-4-33 (1926-27).



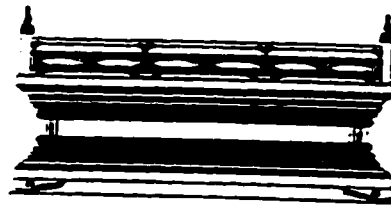
**Figure 77**  
 The pictorial representation of the Shumisen world depicted on a lotus petal of the big statue of Buddha Vairocana in the Tōdaiji.  
*Atorie* 17-3 (1935): 42.

**Figure 78**  
 Whole picture of a lotus petal.  
 Kurata, *Tōdaiji*, vol. 1 (Tokyo: Kōdansha, 1969),  
 Figure 35.





**Figure 79**  
 Combination of lotus petals of the lotus seat.  
 Kurata, *Tōdaiji*, vol. 1 (Tokyo: Kōdansha, 1969),  
 Figure 34.



**Figure 80**  
 Figure of Shumidan.  
 Sugiura Kōhei, *Nihon no katachi Asia no katachi*  
 (Tokyo: Sanseidō, 1994), 110.



**Figure 81**  
 A picture of the Shumisen depicted as a cosmic  
 tree surrounded by dragons. This picture is drawn  
 on the famous cultural assets, *Tamamushi no*  
*cushi*, preserved by the Hōryūji. In the Asuka  
 period.  
 Sugiura Kōhei, *Nihon no katachi Asia no katachi*  
 (Tokyo: Sanseidō, 1994), 110.

AB断面圖

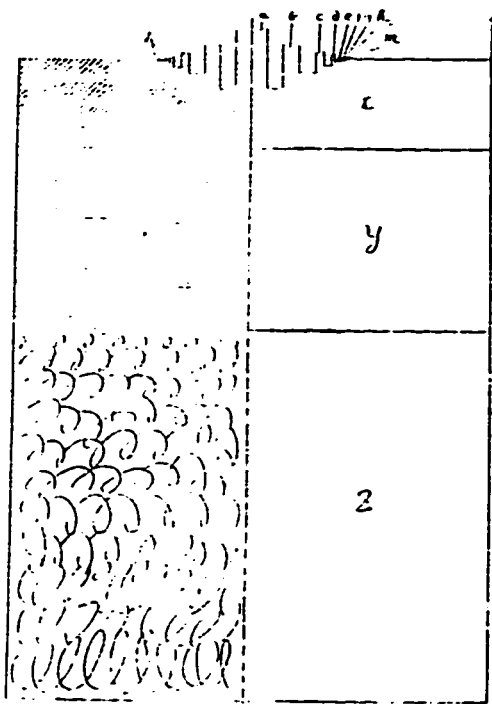


Figure 82  
The pictorial explanation of the component of the Shumisen world depicted by Ono Genmyō. Ono Genmyō, "Bukkyō tenmongaku," no. 3, *Gendai Bukkyō* 3-27 (1926): 52-53.

平面圖

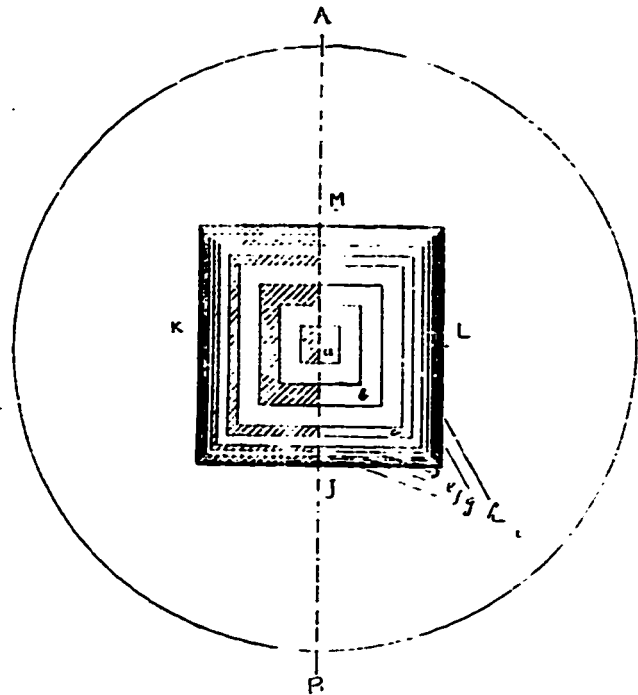
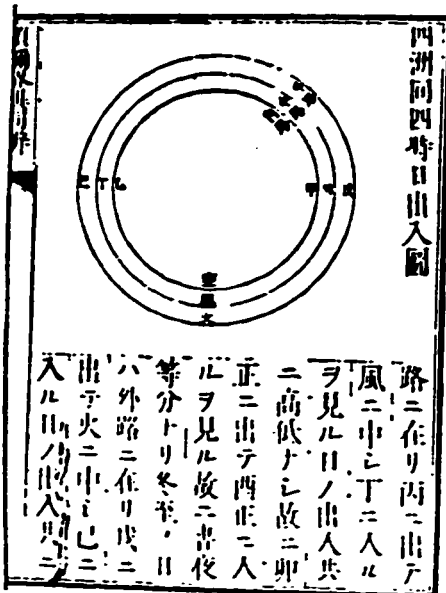
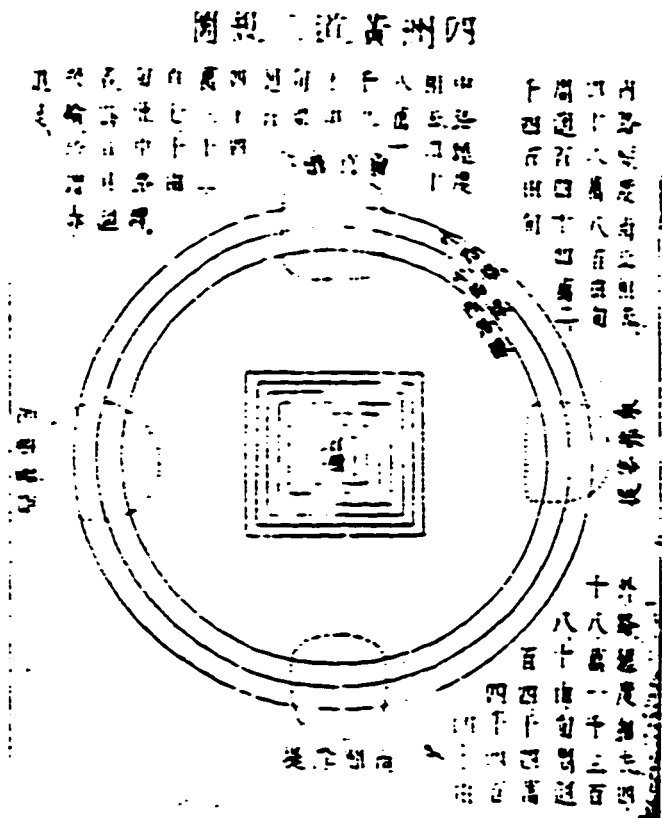


Figure 83  
Kanchū's pictorial explanation of the movement of the sun and the seasonal change. Kanchū, *Shumikai shiji idō ben* (1843), 2.

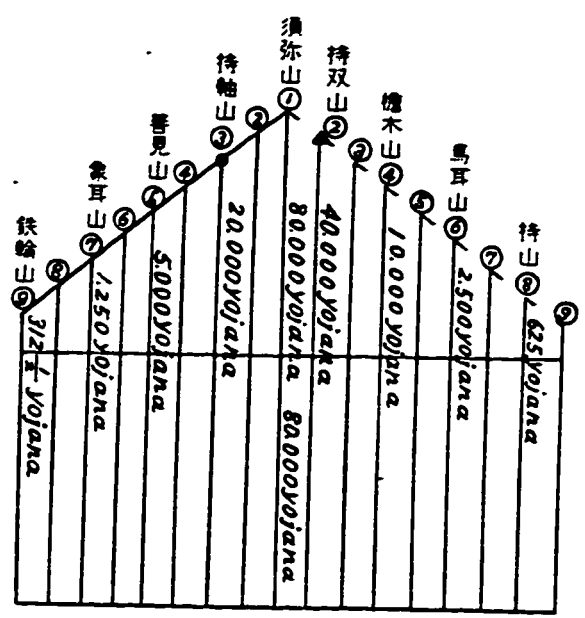


四時ヲ交互スルノ理ナレ若シ冬夏至ノ日ノ出  
入中路ニ在テ高低ナレト云フ則ハ日内路ニ在  
ル則ハ日最長ト八年休多夜最長ト八年休多日  
外路ニ在ル則ハ夜最長ト八年休多日最長ト二  
八年休多日中路ニ在ル則ハ日夜等分ト十五年休  
多ノ文ニ合セス今日ノ現故ニ違フナリ  
若四天下四時ヲ同フスル則ハ如圖夏至ノ日ハ  
内路ニ在テ甲ニ出テ空ニ中ニ止ルルヲ見ル  
日ノ出入共ニ高キ故ニ寅ノ節ニ出テ戌ノ節ニ  
入ルヲ見テ日長ク夜短トス春秋二分ノ日ハ中

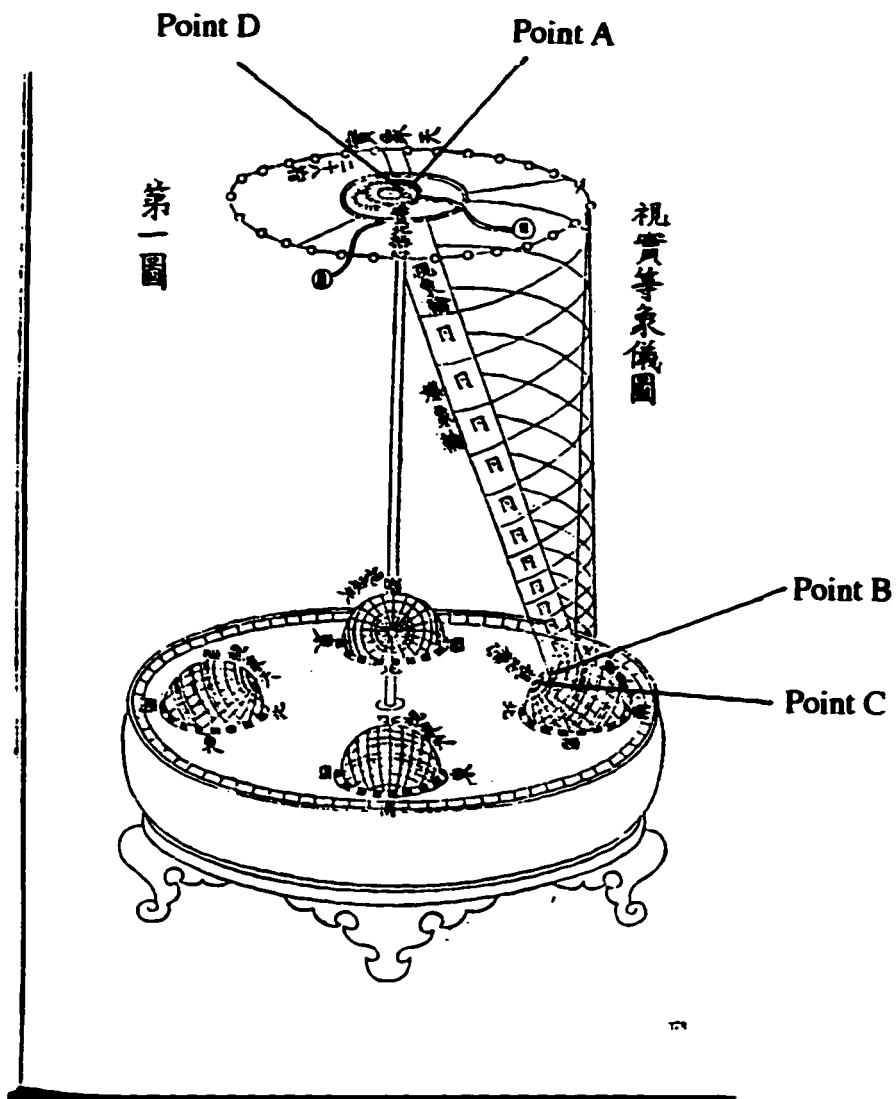




**Figure 84**  
 Pictorial explanation of the movement of the sun based on the statements in the Buddhist scripture. This explanation is inconsistent with Entsū explanation of seasonal change (Figure 63), according to Kanchū. Entsū, *Bukkoku rekishōhen*, vol. 4 (1810), 19.



**Figure 86**  
 Arrangement of the nine mountains in the Shumisen world. Kimura Taiken, *Kimura Taiken zenshū*, vol. 5 (Kyoto: Daihōrin kaku, 1968), 319.



**Figure 85**  
 Sada Kaiseki's *Shijitsu tōshōgi*. No descriptions  
 of Points A, B, C, and D in the original picture.  
 Sada Kaiseki, "Shijitsu tōshō gi shohen," in  
*Meiji Bukkyō shisō shiryō shūsei*, vol. 5  
 (Kyoto: Dōbōsha, 1981), 378.

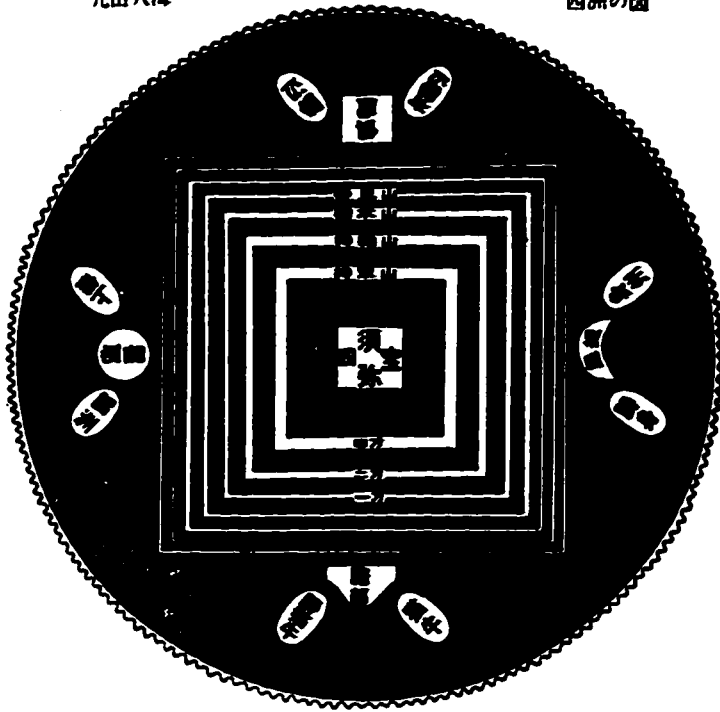
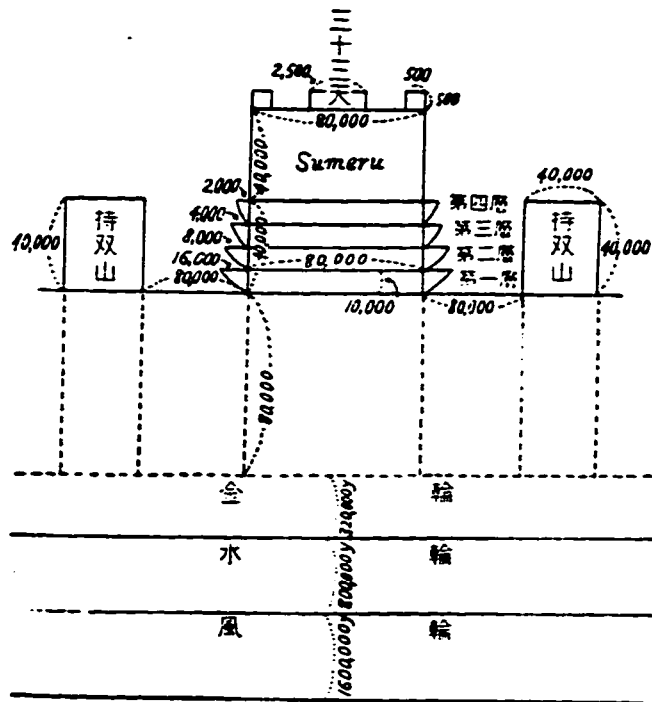
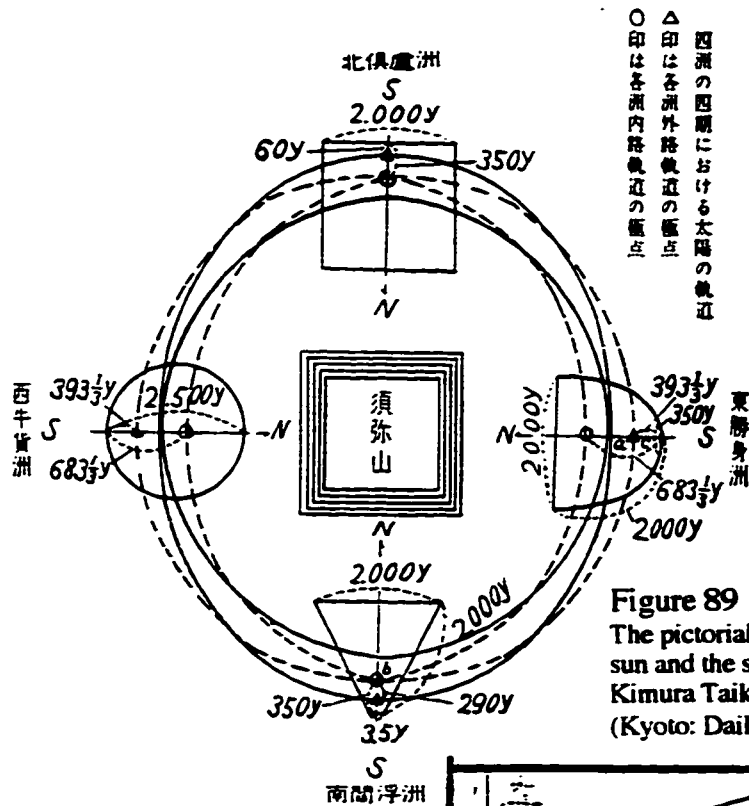


Figure 87  
 Kimura's pictorial representation of the  
 Shumisen world entitled *Kusen hakkai shishū no*  
*zu*.  
 Kimura Taiken, *Kimura Taiken zenshū*, vol. 5  
 (Kyoto: Daihōrin kaku, 1968), 321.

Figure 88  
 A section view of Mt. Sumeru focusing on the  
 explanation of its size.  
 Kimura Taiken, *Kimura Taiken zenshū*, vol. 5  
 (Kyoto: Daihōrin kaku, 1968), 321.





四洲の四期における太陽の軌道  
 △印は各洲外路軌道の極点  
 ○印は各洲内路軌道の極点

Figure 89  
 The pictorial explanation of the movement of the sun and the seasonal change.  
 Kimura Taiken, *Kimura Taiken zenshū*, vol. 5  
 (Kyoto: Daihōrin kaku, 1968), 328.

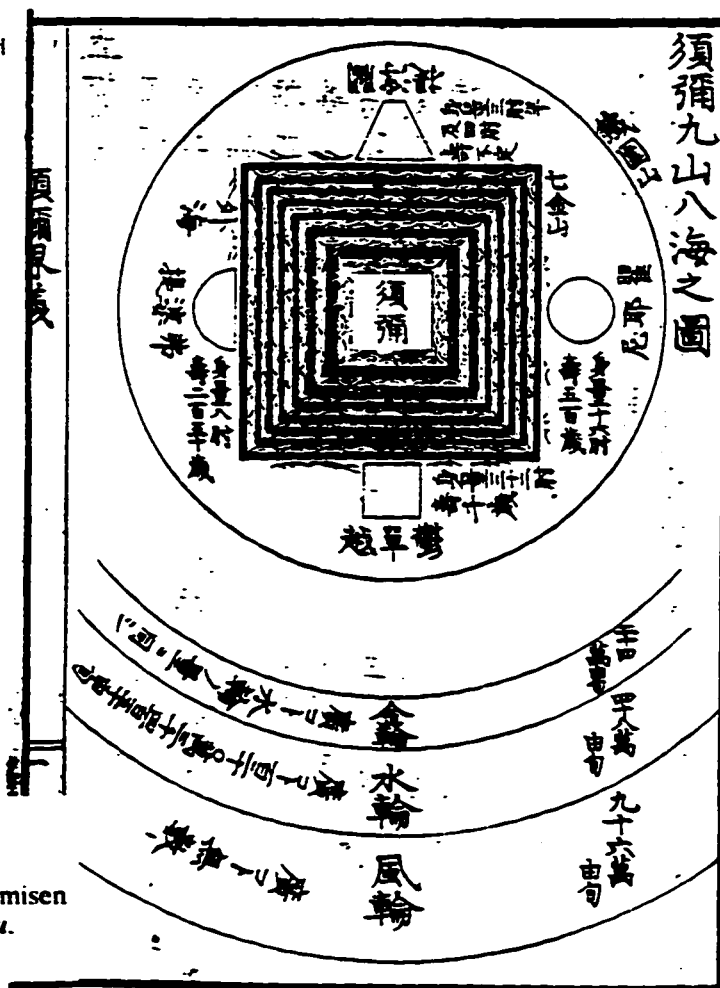


Figure 90  
 Ankei's Pictorial explanation of the Shumisen world entitled *Shumi kusen hakkai no zu*.  
 Ankei, *Shumikaigi* (1858), 1.



**Figure 91**  
Mt. Sumeru depicted as a cosmic pillar.  
Sugiura Kōhei, *Nihon no katachi Asia no katachi*  
(Tokyo: Sanseidō, 1994), 113.

**\* The direct reproduction of picture from this dissertation is not allowed without receiving a permission from an appropriate agency.**

## GLOSSARY

### Names

Akegarasu Haya	曉烏敏
Anezaki Masaharu	姉崎正治
Ankei	安慧
Bukkōji	仏光寺
Daigyōji	大行寺
Donzō	曇藏
Edo	江戸
Enki	円熙
Enryakuji	延暦寺
Fijii Saishō	藤井最証
Fujita Yorihisa	藤田頼央
Fukō Yūman	普光融満
Fukuda Gyōkai	福田行戒
Fumon Entsū	普門円通
Fushigi Kenkyūkai	不思議研究会
Gōchō	豪潮
Hirata Atsutane	平田篤胤
Hattori Nakatsune	服部中庸

Hiroe Hikozō	広江彦蔵
Honganji	本願寺
Hōryūji	法隆寺
Hōtan	鳳潭
Imagawa Kakushin	今川覚信
Inaba Masumaru	稲葉昌丸
Inō Tadataka	伊能忠敬
Inoue Enryō	井上円了
Inoue Tetsujirō	井上哲次郎
I-hsing	一行
Jiun	慈雲
Jōdoshū	浄土宗
Jōmei	浄名
Kagetsu	珂月
Kaitokudō	懷徳堂
Kanchū	環中
Katō Hiroyuki	加藤鉦行
Kawano Tūrei	河野通礼
Keikō	慧光
Kenshōin	懸象院
Kimura Taiken	木村泰賢
Kiyozawa Manshi	清沢満之
Kōgen	晃巖

Koide Chōjūrō	小出長十郎
Kojima Kōken	小島好謙
Kōkōdō	浩々洞
Kondō Saneyuki	近藤実之
Kopperu or Koperu (Copernicus)	古伯爾
Kōseiji	興正寺
Miyake Setsurei	三宅雪嶺
Mokusen	木仙
Monnō	文雄
Motoki Ryōei	本木良永
Motoori Norinaga	本居宣長
Myōyōji	妙要寺
Mugaishi	無外子
Murakami Senshō	村上專精
Musō	無相
Nakai Riken	中井履軒
Nichigi	日儀
Nichirenshū	日蓮宗
Nishi Amane	西周
Nishikawa Masayasu	西川正休
Obata Tokugi	小幡徳義
Obata Tokujō	小幡徳常
Ono Genmyō	小野玄妙



Oranda	和蘭
Reiyū	靈遊
Sada Kaiseki	佐田介石
Saihōji	西方寺
Satō Nobuhiro	佐藤信淵
Seii	聖意
Sekizen'in	積善院
Senjō	專靜
Senyō	仙葉
Shiba Kōkan	司馬江漢
Shibukawa Tenkai	渋川天海
Shimaji Mokurai	島地默雷
Shinen	信円
Shingyō	信暁
Shinshū Otaniha	真宗大谷派
Shiseidō	四聖堂
Shōshin	証信
Tachikawa chō	立川町
Tamamushi no zushi	玉虫厨子
Teiko (Tycho Brahe)	得逸骨
Tenmongata	天文方
Tenryūji	天龍寺
Tetsugakukai	哲学会

Tetsugaku kan	哲学館
Tetsugaku shoin	哲学書院
Tōdaiji	東大寺
Tokubō	徳貌
Tominaga Nakamoto	富永仲基
Tōshin bosatsu	東森菩薩
Tōshin inshi	東森陰士
Ubusuna no ōkami	產生大神
Yochi zenzu	輿地全図
Yamada Gentsū	山田玄通
Yamagata Bantō	山片幡桃
Zenkōji	善光寺
Zōjōji	増上寺

## Terms (on Bonreki Theory)

\*A short definition or English translation is attached to some terms in this section, because these terms are frequently used in a particular way as a term of the Bonreki theory and some of them are very unique terms coined by the Bonreki scholars.

*bankokuzu* 万国図

*bōgyō* 傍行

*bon'i* 梵医

*bonreki* 梵曆: Indian or Buddhist astronomy. It sometimes means only the Buddhist calendar system. In this case, *reki* simply means a calendar system.

*bonreki kaiso* 梵曆開祖

*bonreki kessha* 梵曆結社

*bonreki undō* 梵曆運動

*bussatsu* 仏説

*butsureki* 仏曆

*byō* 秒

*chi* 智

*Chikei* 地形

*chikyūzu* 地球図

*chi no seien* 地の正円

*chūbunji* 中分時

*chūshū* 中洲

*dainihonkoku* 大日本国

*daishū* 大洲

*dairisshi* 大律師

<i>daiwajō</i>	大和上
<i>danshi</i>	彈指
<i>denkō</i>	電光
<i>do</i>	度
<i>dōshiji ha</i>	同四時派

***Enbudaishū*** 閻浮提洲: One of the four major islands in the outermost sea of the Shumisen world. According to Entsu's theory, southern part of this island corresponds to the modern world map. The reversed triangle shape of this island, which seems to represent the shape of India, is converted to the shape of Eurasia in the Bonreki theory.

<i>fūrin</i>	風輪
<i>gairo</i>	外路
<i>gaitensetsu</i>	蓋天說
<i>gekkyū</i>	月宮
<i>Genchi</i>	眼智
<i>genchi no hō</i>	眼智の法
<i>genryō</i>	現量
<i>gogen</i>	五眼
<i>hakudō</i>	白道
<i>hakuhan</i>	白半
<i>hakugatsu</i>	白月
<i>Harushamarashū</i>	筏羅遮末羅洲
<i>hi no heikō</i>	日の平行
<i>hōsei</i>	方正
<i>hun</i>	分

<i>hyōkai</i>	氷海
<i>ibun</i>	移分
<i>ikki</i>	一氣
<i>in yō gōreki</i>	陰陽合曆
<i>ishiji ha</i>	異四時派
<i>ji</i>	時
<i>jiichi</i>	実智
<i>jisshō</i>	実象
<i>jisshōten</i>	実象天
<i>jitsugetsu kaishōrin (or nichigwatsukaishōrin)</i>	日月廻照輪
<i>jō</i>	情
<i>jō</i>	丈
<i>jo</i>	女
<i>jogetsu</i>	女月
<i>jūnikyū</i>	十二宮
<i>kaikyō</i>	回境
<i>kaireki</i>	回曆
<i>kaku</i>	角
<i>kakugetsu</i>	角月
<i>kami</i>	神
<i>kāra</i>	迦羅
<i>kashō</i>	仮象
<i>katachi</i>	容

<i>katadoru</i>	象ドル
<i>keihei</i>	啓閉
<i>Keito</i>	計都
<i>ki</i>	鬼
<i>ki</i>	箕
<i>kigetsu</i>	鬼月
<i>kigetsu</i>	箕月
<i>kishuku</i>	鬼宿
<i>kiei</i>	氣盈
<i>kieibu</i>	氣盈分
<i>kinen kigetsu</i>	記年記月
<i>kisaku</i>	氣策
<i>kō</i>	昂
<i>kōdō</i>	黄道
<i>kōgetsu</i>	昂月
<i>kōkokureki</i>	皇国曆
<i>koku</i>	刻
<i>kokuhan</i>	黒半
<i>kokugatsu</i>	黒月
<i>konrin</i>	金輪
<i>Konron</i>	崑崙
<i>kontensetsu</i>	渾天説
<i>konten gi</i>	渾天儀

<i>kōseinen</i>	恒星年
<i>kōseireki</i>	恒星曆
<i>kōshaku</i>	鈎尺
<i>kusen hakkai</i>	九山八海
<i>kyokki</i>	旭輝
<i>lāba</i>	羅婆
<i>metsubu</i>	減分
<i>motsubu</i>	没分
<i>mokorita</i>	模呼律多 (模呼栗多)
<i>mukyūta</i>	牟休多
<i>myōkō</i>	妙高
<i>naikai</i>	内海
<i>nairo</i>	内路
<i>nanboku no ido</i>	南北の緯度
<i>nen</i>	念
<i>nijūhasshuku</i>	二十八宿
<i>nijūyon sekki</i>	二十四節氣
<i>nikkyū</i>	日宮
<i>nikugan</i>	肉眼
<i>nottoru</i>	法トル
<i>nyūsoku</i>	入息
<i>Ragō</i>	羅睺
<i>rakei</i>	羅計

<i>reiki</i>	靈輝
<i>Rekigen</i>	曆源
<i>Rekihō</i>	曆法
<i>ri</i>	里
<i>rō</i>	婁
<i>rōgetsu</i>	婁月
<i>rōkoku no hō</i>	漏刻の法
<i>rokujinzū</i>	六神通
<i>rokyokuten</i>	六欲天
<i>ryochi</i>	慮知
<i>saijitsu</i>	歳日
<i>saishū</i>	歳周
<i>saitoku hasshōshin</i>	歳徳八将神
<i>sakujitsu</i>	朔実
<i>sakukyobu</i>	朔虚分
<i>sanka</i>	三家
<i>sankan</i>	三環
<i>sanshin</i>	三辰
<i>sanshū:</i>	三洲
<i>sanzai</i>	三際
<i>sei</i>	星
<i>seigetsu</i>	星月
<i>sekidō</i>	赤道



<i>sekki</i>	節氣
<i>Senbushū</i>	瞻浮洲
<i>setsuna</i>	利那
<i>Shamara shū</i>	遮末羅洲
<i>seirekseyō no kyūsetsu</i>	西曆の旧説
<i>shi</i>	筭
<i>shichiyō</i>	七曜
<i>shigetsu</i>	筭月
<i>shijitsu tōshōron</i>	視実等象論
<i>Shijitsu tōshōgi</i>	視実等象儀
<i>shiki mushikiten</i>	色無色天
<i>shin</i>	心
<i>shingetsu</i>	心月
<i>shinzen</i>	深禪
<i>shishōten</i>	視象天
<i>shitsu</i>	室
<i>shitsugetsu</i>	室月
<i>shobunji</i>	初分時
<i>shōshū</i>	小洲
<i>shūgyō</i>	周行
<i>shukushō</i>	縮象
<i>shukushō kai</i>	縮象界

*shumikai* 須弥界: “the Shumisen world.” One unit of the world system that mainly consists of the nine mountains and eight seas. An etymological status of this term should be studied for indicating the newness of the term. However, it is at least obvious that the conceptualization of this world unit as the Buddhist worldview which is convertible to the modern scientific worldview was an invention of the Bonreki movement.

<i>shumisen</i>	須弥山
<i>shumisen gi</i>	須弥山儀
<i>shumisensetsu</i>	須弥山説
<i>shun</i>	瞬
<i>shū shū</i>	習修
<i>shuyu</i>	須臾
<i>sokuei no hō</i>	測影の法
<i>sokuryō</i>	測量
<i>someiro</i>	蘇迷盧
<i>sosetsuna</i>	咀刹那
<i>suirin</i>	水輪
<i>sūri nigaku</i>	数理二学
<i>taiinnen</i>	太陰年
<i>taiyōnen</i>	太陽年
<i>tei</i>	氏
<i>teigetsu</i>	氏月
<i>teijun</i>	定準
<i>tenchi no taijō</i>	天地の体状
<i>tendo</i>	天度
<i>tengen</i>	天眼

<i>tenshō</i>	展象
<i>tensui</i>	天水
<i>Tentai</i>	天体
<i>tetsuisen</i>	鉄囲山
<i>tsūjun</i>	通閨
<i>yakoku</i>	夜国
<i>yochizu</i>	輿地図
<i>yoku</i>	翼
<i>yokugetsu</i>	翼月
<i>yoki</i>	余輝
<i>yujun</i>	由旬(s: <i>yojana</i> ): a unit of distance. This unit of distance, which is originally one of the various units of measurement in the Buddhist scriptures, is turned into a foundational unit of distance in Entsū's Bonreki theory.
<i>zoku</i>	俗

<b>Terms (others)</b>	
<i>akirame shugi</i>	あきらめ主義
<i>ame no nuboko</i>	天
<i>anjū shugi</i>	安住主義
<i>ankai</i>	暗界
<i>azana</i>	字
<i>baramon kyōto</i>	婆羅門教徒
<i>bongo</i>	梵語
<i>bukkyōteki sekai</i>	仏教の世界
<i>Bukkyō tenmongaku</i>	仏教天文学
<i>butsudan</i>	仏壇
<i>chisoku</i>	遅速
<i>daijōhibussetsu</i>	大乘非仏説
<i>daisensekai</i>	大千世界
<i>daijō</i>	大蔵
<i>eki</i>	易
<i>funrei shugi</i>	奮励主義
<i>gakurin</i>	学林
<i>gakuryō</i>	学寮
<i>geango</i>	夏安居
<i>genshi Bukkyō</i>	原始仏教
<i>gō</i>	号
<i>gogyaku no tsumi</i>	五逆の罪

<i>gohō</i>	護法
<i>gohōjō</i>	護法場
<i>gohōron</i>	護法論
<i>gokai</i>	誤怪
<i>gūzen</i>	偶然
<i>haibutsu</i>	排仏
<i>hajagaku</i>	破邪学
<i>hishūkyō</i>	非宗教
<i>hōben</i>	方便
<i>hōjin</i>	報身
<i>hongaku shisō</i>	本覚思想
<i>hosshin</i>	法身
<i>hosshō</i>	法性
<i>hukaku kindō</i>	不覚筋動
<i>ichidaikō</i>	一大綱
<i>ichijō</i>	一乘
<i>ikai</i>	偽怪
<i>inga</i>	因果
<i>inshi</i>	淫祀
<i>jigoku</i>	地獄
<i>jiriki mon</i>	自力門
<i>jitsugaku</i>	実学
<i>Jōkyō no kaireki</i>	貞亨の改暦

<i>jūnikyū</i>	十二宮
<i>kaibyaku</i>	開關
<i>kairitsu fukkō undō</i>	戒律復興運動
<i>kakubutsu kyūri</i>	格物窮理
<i>kanben</i>	間弁
<i>kankakujō no kenkyū</i>	感覺上の研究
<i>kanōtai</i>	可能態
<i>kanreki</i>	官曆
<i>kebutsu</i>	化仏
<i>keitai</i>	形体
<i>kekai</i>	仮怪
<i>kikai</i>	器界
<i>kindaishugi</i>	近代主義
<i>kindaiteki shii</i>	近代的思惟
<i>kindaiteki shinkō</i>	近代的信仰
<i>kiseken</i>	器世間
<i>kishin</i>	鬼神
<i>kogaku</i>	古学
<i>kokkuri</i>	狐狗狸
<i>koku</i>	石
<i>kokugaku</i>	国学
<i>konpon Bukkyō</i>	根本仏教
<i>kori</i>	狐狸

<i>kyakkanteki sekairon</i>	客觀的世界論
<i>Kyōbushō</i>	教部省
<i>kyōgaku taikai</i>	教学体系
<i>kyokai</i>	虚怪
<i>kyūrigaku</i>	窮理学
<i>meikai</i>	明界
<i>minshū shisōshi</i>	民衆思想史
<i>mono no hon</i>	物の本
<i>mushikikai</i>	無色界
<i>Naikoku kangyō hakurankai</i>	内国勸業博覽会
<i>nara daibutsu</i>	奈良大仏
<i>ninden</i>	人天
<i>nyorai</i>	如来
<i>ōjin</i>	応身
<i>rangaku</i>	蘭学
<i>rekisangaku</i>	曆算学
<i>rengedai-zōsekai</i>	蓮華台藏世界
<i>renza</i>	蓮座
<i>rigaku tetsugaku</i>	理学哲学
<i>rikai</i>	理怪
<i>rinne</i>	輪廻
<i>rokudō</i>	六道
<i>ryūgū</i>	竜宮

<i>sanbukyō</i>	三部經
<i>sangai</i>	三界
<i>sangoku sekaikan</i>	三国世界觀
<i>sanjin</i>	三身
<i>sanjō</i>	三乘
<i>seikatsu ishiki</i>	生活意識
<i>sekai genshō ron</i>	世界現象論
<i>sekaikan</i>	世界觀
<i>seikatsu ishiki</i>	生活意識
<i>seigaku</i>	星学
<i>seikyōbunri undō</i>	政教分離運動
<i>seiryōzai</i>	清涼劑
<i>seishinshugi</i>	精神主義
<i>senkai</i>	仙界
<i>senkyō</i>	仙境
<i>seppōin</i>	說法印
<i>shashinhō</i>	写真法
<i>shikikai</i>	色界
<i>shinjitsu</i>	真實
<i>shinkai</i>	真怪
<i>shin daijō undō</i>	新大乘運動
<i>shinenjo</i>	四念処
<i>shinnyo</i>	真如



<i>shisō no genkōzō</i>	思想の原構造
<i>shiteirei</i>	四定例
<i>shitennō</i>	四天王
<i>shiun</i>	私運
<i>shohō jissō</i>	諸法実相
<i>shōsensekai</i>	小千世界
<i>shūgaku</i>	宗学
<i>shūjō</i>	宗乘
<i>shukanteki sekairon</i>	主観的世界論
<i>shūkyō</i>	宗教
<i>shūkyō no honryō</i>	宗教の本領
<i>shumidan</i>	須弥壇
<i>sōshi</i>	草紙
<i>taikyoku</i>	大極
<i>taiyō meikai no setsu</i>	太陽明界の説
<i>tariki mon</i>	他力門
<i>ten</i>	天
<i>tenkyūzu</i>	天球図
<i>tenmongaku</i>	天文学
<i>tenreki</i>	天曆
<i>tentei</i>	天帝
<i>tetsugaku Bukkyō</i>	哲学仏教
<i>Tōriten</i>	切利天

<i>ubusuna no gen'un</i>	產生の元運
<i>ujōseken</i>	有情世間
<i>undō</i>	運動
<i>yōkai</i>	妖怪
<i>yōkaigaku</i>	妖怪学
<i>yōkai hakase</i>	妖怪博士
<i>yoki ikō</i>	預期意向
<i>yokukai</i>	欲界
<i>yūrei</i>	幽霊
<i>zenben</i>	全弁
<i>zongarasu</i>	ゾンガラス

## **Titles**

\*This is a selected list of the names of texts and visual materials that were mentioned in the main text. See Bibliography and Illustration for reference. The texts included in the huge modern collections are followed by a brief reference information.

\*An abbreviation, T, is used for *Taishō shinshū daijō kyō*. 85 volumes. Tokyo, 1924-33. Citations of T takes the following form: volume, page, e.g., T.46: 470 indicates volume 46, page 470.

*Abhidharma kusharon* (s: Abhidharmakośa-bhāṣa) 阿毘達磨俱舍論 (T. 29: 1)

*Bonmōkyō* 梵網經 (T. 24: 997)

*Bonreki kaisonohi* 梵曆開祖の碑

*Bonreki sakushin* 梵曆策進

*Bukkoku rekishōhen* 仏国曆象編

*Bukkoku rekishōhen benmō* 仏国曆象編弁妄

*Bukkoku rekishōhen sekimō* 仏国曆象編斥妄

*Daibibasharon* 大毘婆舍論 (T. 27: 1)

*Daienreki* 大衍曆

*Daikanki yujunbinran* 大寒氣由旬便覽

*Dansenkotsugengi zsetsu* 團扇骨弦儀図説

*Daūōseiikiki* 大唐西域記 (T. 51: 867)

*Fugyō shinmon* 俯仰審問

*Gatsuzōkyō* (*Daijitsu gatsuzōkyō*) 月歲經 (大集月歲經: T. 13: 15)

*Gedō tetsugaku* 外道哲学 (*Inoue Enryō senshū*)

*Gohō sakushin* 護法策進

*Genshi Bukkyō shisō ron* 原始仏教思想論 (*Kimura Taiken zenshū*, vol. 3)

*Gohō shinron* 護資治論

*Gotenjikuzu* 五天竺図  
*Hitenkeiwakumon* 非天経或問  
*Honchō bonreki shishikeifu* 本朝梵曆師資系譜  
*Indo rokuha tetsugaku* 印度六派哲学 (*Kimura Taiken zenshū*, vol. 2)  
*Jikken shumikaisetsu* 実験須弥界説  
*Jōagonkyō* 長阿含經 (T. 1: 1)  
*Kashoreki* 華胥曆  
*Kaitai shinsho* 解体新書 (*Nihon shisōtaikei*, vol. 65)  
*Kaitei shumikaireki* 改訂須弥界曆  
*Kegongyō* 華嚴經 (T.10: 66)  
*Kisekyō* 起世經 (T. 1: 310)  
*Kakuzenshō* 覺禪抄 (*Dainihon Bukkyō zensho*, vols. 45-51)  
*Kiseimpongyō* 起世因本經 (T. 1: 365)  
*Kojiki* 古事記 (*Nihon shisō taikei*, vol. 1)  
*Kokusho sōmoku-roku* 国書総目録  
*Kopperu tenmon zukai* 刻白爾天文図解 (In Nakai, Shiba Kōkan.)  
*Kusen hakkai kaichōron* 九山八海解嘲論  
*Kusen hakkai shishū no zu* 九山八海四洲の図  
*Kyōwa ninen reki* 享和二年曆  
*Makasōgiritsu* 摩訶僧祇律 (*Kokuyaku issaikyō*, Ritsubu, vol. 8-11)  
*Matōgakyō* 摩登迦經 (T. 21: 399)  
*Meikyōshinshi* 明教新誌

- Ming shih* 明史
- Monjugiki* 文珠儀軌 (T. 20: 835)
- Nanenbushūzu* 南閩浮洲図
- Nansenbushū bankokushōka no zu* 南贍浮洲万国掌菓の図
- Nichigwatsugyōhon* (in *Risseabidonron*) 日月行品 (T. 32: 195)
- Nichizōkyō* 日藏經 (T. 13: 233)
- Orandatensetsu* 和蘭天說 (*Nihon shisōtaikei*, vol. 64)
- Rekisan zensho* 曆算全書
- Risseabidonron* 立世阿毘曇論 (T. 32: 173)
- Resseabidon rekisho* 立世阿毘曇曆書
- Rutangyō* 流炭經
- Sandaikō* 三大考 (*Nihon shisōtaikei*, vol. 50)
- Sangai kusen hakkai zu* 三界九山八海図
- Sangaikyō* 山海經
- Seishinkai* 精神界
- Seishin kōwa* 精神講話
- Seishukuhon* (in *Nichizōkyō*) 星宿品
- Shamon Monnō ga Kusen hakkai kaichōron no ben* 沙門文雄が九山八海解嘲論の弁  
(*Motoori Norinaga zenshū*, vol. 14)
- Shazukangyō* (*Shazukan taishi nijūhasshukugyō*) 舍頭諫經 (舍頭諫太子二十八宿經:  
T. 21: 410)
- Shōbōnenkyō* (*Shōbōnenjokyō*) 正法念經 (正法念処經: T. 17: 1)
- Shōjōbukkyō shisō ron* 小乘仏教思想論 (*Kimura Taiken zenshū*, vol. 5)
- Shucchōgyō* 出曜經 (*Kokuyaku issaikyō*, *Hon'enbu*, vol. 10)

*Shūhi sankei* 周碑算經  
*Shukushōgi* 縮象儀  
*Shukushukugi zu* 宿縮儀図  
*Shukuyōgyō* 宿曜經 (T. 21: 387)  
*Shumikaigi* 須弥界儀  
*Shumikai jikken rekisho* 須弥界実験曆書  
*Shumikaireki* 須弥界曆  
*Shumikai shijiidōben* 須弥界四時異同弁  
*Shumikai shijiidōben benseki* 須弥界四時異同弁弁斥  
*Shumi kusen hakkai no zu* 須弥九山八海の図  
*Shumisengi mei narabini jo wakai* 須弥山儀銘並序和解  
*Shumisengi zu* 須弥山儀図  
*Shumisen ryakusetsu* 須弥山略説  
*Shutsujō gogo* 出定後語 (*Nihon shisōtaikei*, vol.43)  
*Tenchi nikyū yōhō* 天地二球用法  
*Tenchūki* 天柱記 (*Nihon shisōtaikei*, vol. 45)  
*Tengaku sakurei* 天学策励  
*Tenkeiwakumon* 天経或問  
*Tenmon benwaku* 天文辨惑  
*Tama no mihashira* 霊の真柱 (*Nihon shisōtaikei*, vol. 50)  
*Tang shu* 唐書  
*Tōyō tetsugaku* 東洋哲学  
*Uyoku genninron ryakukai* 羽翼原人論略解

*Yochi zenzu* 輿地全図

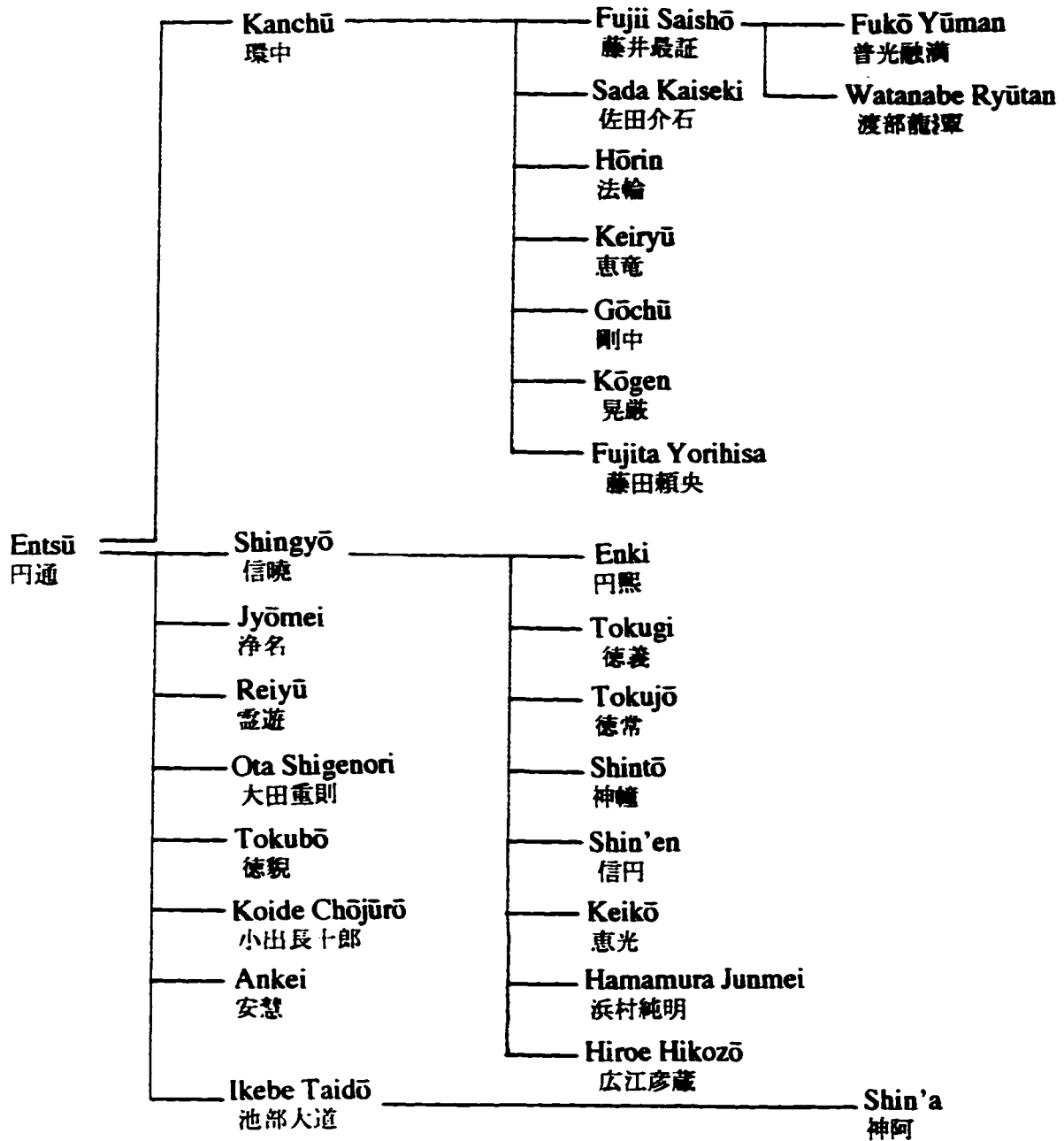
*Yōkaigaku kōgi* 妖怪学講義

*Yōkai sōsho* 妖怪叢書

*Yume no shiro* 夢の代 (*Nihon shisōtaikei*, vol. 43)

APPENDIX 1

GENEALOGY OF BONREKI SCHOLARS





**APPENDIX 2**  
**GENERAL OUTLINE OF *BUKKOKU REKISHŌHEN*.**

**[Vol. 1] Chapter 1: Origin of Astronomy (almost 20 items)**

To discuss the fact that Chinese astronomy was established only after introducing Indian astronomy

To discuss the general process of the gradual acceptance of Bonreki in China.

To discuss the mistake of the opinion that says that Bonreki was also an imperfect theory in the ancient time.

To discuss the fact that Chinese calendar system was frequently changed and established getting supports from sages, and its theories of the height of the sun, the location of the five planets, year cycle, and so on are all derived from the Indian system.

To discuss the fact that Bonreki already arrived in the period of Hou-han.

To discuss the origin of Uighur astronomy and the fact that its theory is based on Bonreki.

To discuss that the names of twelve zodiacs and their forms in Uighur astronomy are solely derived from Bonreki. Besides, the names of stars, such as, *ragō* and *keito*, are the names used in Bonreki. These facts prove that the Uighur astronomy is Bonreki.

To discuss that the main land of Uighur was a tributary of the ancient India and later became a part of India. Therefore, many Indian people lived in Uighur and Bonreki was popular among those people. Besides, the most Buddhist scriptures translated in the ancient time were transmitted to China through this area.

To discuss the fact that the old Western astronomy was originally Bonreki.

To discuss that both Uighur and Western astronomy are a diffusion of the seven star calendar. The ideas of the seven stars and the nine stars are originally different.

To discuss that Uighur astronomy and Western astronomy set up a leap date, but they do not set up a leap month. It is because they are Bonreki. The calendar system that sets up a leap month is also a kind of Bonreki.

To discuss that the Western system uses the fixed star year just as the Uighur system does. This is a proof of the fact that they were originally from Bonreki (part one).

To discuss that the Western calendar system of the fixed star and the Uighur solar calendar system are originally invented in India in ancient times (part two).

To discuss that the solar and lunar years of the Uighur calendar system are different from the year system of the Western calendar system. But both of them are Bonreki except on this issue.

To discuss when the Western astronomy established the fixed star year which is different from that of the Uighur astronomy.

To discuss that the theories on the eclipses of the sun and the moon are basically the Buddhist idea and to show a clear proof of it.

To discuss that the one eclipse-in-six months theory in *Nehangyō* is not the same as the one eclipse-in-160 days theory of Chinese Confucians.

To discuss the theory of eclipses in the Buddhist scriptures.

To discuss that Chinese theory has had a clear verification of the solar and lunar eclipses since ancient times.

To discuss Indian astronomical theories was established in ancient times and had been transmitted for a long time.

## **[Vol. 2] Chapter 2: Heavenly Bodies (8 items)**

To discuss that each one of the three families and the four theories of China, which have been transmitted since ancient times, has a different astronomical theory.

General description of the seven theories.

The difference between the canopy theory and the Shumisen worldview.

The old theory of the West.

The new theory of the West.

To discuss that the Western theory carelessly relies on guess and depends on theory.

To discuss that the Western precision instruments are not reliable.

Indian theory of celestial system.

### **Chapter 3: Landscape 1 (8 items)**

To discuss the two theories of China: *Kontensetsu* and *Gaitensetsu*.

To discuss the landscape of the Western theory.

To discuss that the size of the earth in the Western theory is totally wrong.

To discuss both Chinese and Western theories, which locate the polestar at the center of the sky, have many problems.

To discuss that the Western theory that regards the circumference of the earth as 90,000ri is totally wrong.

To discuss that the theory of Western scholars, which insist that things are attached to the surface of the earth and they never fall down, is inconsistent with actual mass.

To discuss that the theory, which insists that the sun and the moon revolve through the underground, is inconsistent with actual mass.

To discuss that the horizontal orbits of the sun and the moon is well consistent with actual mass.

### **[Vol. 3] Chapter 3: Landscape 2 (16 items)**

To discuss that the emergence of the heliocentrism corresponds to the Buddha's foresight.

To indicate the falsehood of the new Western theory that presupposes the moving earth and regards the moon as a satellite of the earth, by calculating the actual mass according to the Buddha's description.

To discuss the fact that the general landscape and the conception of the world in the Indian theory basically corresponds to the idea of the five continents of the Western scholars. The landscape of India explained by the Western scholars is different from that of the Buddhist scriptures. It is because they never reached India and just imagined it.

To explain the fact that there is the country, which has a very short nighttime, in the northern region of the world.

To prove the fact that the presence of the night country, which had only one day and one night in one year, was already known in India and China in ancient times.

To discuss the fact that the mountainside of the Shumisen never shuts off the sunlight.

To explain the border line beyond which the sunlight cannot reach the night country.

To discuss the height of the sun's orbit.

To discuss the landscape of the Enbudai island.

To discuss the difference between the Buddhist worldview and that of *Shūhi sankei*.

To discuss the location of the polestar.

To explain the amount of *yujun*.

To reveal the fact that there are seven forests and seven rivers at the northern region of the Enbudai island.

The latitude of the sun's orbits and the size of the forests and rivers on the Enbudai island (with the location of the ice sea).

To discuss the different theories on the north pole and the south pole.

To explain that the idea of the spherical earth of the Western scholars is not the same as the idea of the spherical sky in China.

#### **Chapter 4: Calendar System 1 (6 items)**

To discuss the general theory of Bonreki.

To find the twelve different theories of Bonreki, by searching through the entire Buddhist scriptures.

To explain that the idea of the beginning and end of calendar starts in India.

To discuss the origin of the twelve horary signs.

To discuss the fact that the ideas of *rekishu*, *sankyō*, and *hasshōshin* in Japan are originally from India.

To explain the Indian astronomical theory.

#### **[Vol. 4] Chapter 4: Calendar System 2 (26 items)**

The general theory of the Uighur and the West.

The general meaning of the construction of calendar.

The general movement of the sun on the sun's path.

**The general movement of the moon on the moon's path.**

**The summary of the calendar system of *Nichizōkyō*.**

**The difference of the general movement of the moon between India and China.**

**The Indian theory that divides the sky into one hundred eight units.**

**Correspondence of the three theories of the stars.**

**Distribution of the twelve zodiacs into the one hundred eight units of the sky.**

**The difference between the theory that takes the clockwise movement of the stars and the theory that takes the counterclockwise movement of the stars.**

**The latitudes of the sun's path and the moon's path of Bonreki.**

**Repeatedly to clarify the mechanism of the meeting and separation of the sun and the moon, and the covering and uncovering of the moonlight.**

**To discuss the different theories on the moonlight.**

**To discuss the form of the sun's and moon's palaces and the existence of divine beings in them (with the covering and uncovering of the sunlight).**

**The horizontal slide of the sun's orbit and the leap month.**

**The ninety days difference of the season between the four divisions of the world.**

**The numerical measurement for the calculation of the movement of the sun and the moon.**

**Short table.**

**The name of the thirty units of time (and observation of shadow).**

**Time system.**

**The general theory for the observation of shadow in India.**

**Indian theory of eclipse 1.**

**Indian theory of eclipse 2.**

**Indian theory of eclipse 3.**

**Indian theory of eclipse 4 (to discuss that the meaning of *ragō* and *keito* is not consistent).**

**Indian theory of eclipse 5 (to describe the general mechanism of eclipse and to prove that the idea of the height change of the sun's orbit was originated in India).**

**[Vol. 5] Chapter 4: Calendar System 3 (27 items)**

To discuss that there are five different kinds of solar eclipse.

To discuss the questions on the solar eclipse.

To discuss the theory of dark spot.

To discuss that there is no fixed standard for the observation of the sun in the Western theory.

To discuss that both of the old and new Western theories are meaningless.

To prove the clear mistake of the Western theory that regards the seven stars as the separated heavenly bodies.

To discuss the mistake of the observation of the distance between the five planets in the Western theory.

To discuss the falsehood of the observation of the celestial system and the mistake of the idea regarding the sun as the fixed star in the Western theory.

To discuss the false theory that regards the earth as a star.

To discuss that the idea of the five planets and the observation of them were originated in India.

To discuss that the observation of the shape and size of the seven stars in India completely different from those of the Western theory (and to prove the falsehood of the Western theory).

To discuss that the Western survey has nothing appropriate.

To discuss that the size of the sun and the moon are different in each theory of the world.

To discuss that the size of the world is different in each theory of the world.

To discuss that the theory of four season in *Shūhi sankei* corresponds to that of the Buddhist theory.

To discuss that the longitude and latitude of the Western theory are inconsistent with the actual figure.

To discuss that the true or false of the astronomical theory that is discussed by people is only a matter of the one southern island.

To prove the falsehood of the Western theory, by indicating the correctness of the theory of *Shūhi sankei*.

To discuss the existence of the golden mountain and the giant tree at the center of the Enbudai island.

To discuss that it is impossible to observe the sun, the moon, and the far distant regions, unless they are explained by the Buddhist theory.

To explicate the movement of the sun and the moon.

To explicate the speed of the movement of the sun and the moon.

To explain the idea of the south pole.

To discuss that most of Indian astronomical theories never arrived to Japan.

To prove that the height of the stars were already observed in ancient India.

To discuss the theory that explains the figure of the divine being in the sky and the covering of the moonlight.

To attack the idea of the rotating earth.

#### **Chapter 5: Vision and Wisdom (2 items)**

First, to clarify the divine vision (10 sections)

- 1) To clarify that the theory of vision and wisdom exist only in India.
- 2) To clarify that there is a difference between impure and purified divine visions.
- 3) To clarify that there is a difference between the given and acquired divine visions.
- 4) To explicate the detail of the divine vision.
- 5) To clarify the practice of the divine vision.
- 6) To explain that the divine vision is true.
- 7) To clarify that everyone inherently has a nature of the divine vision.
- 8) To interpret the meaning of Buddha nature in comparison with the non-Buddhist texts.
- 9) To clarify the foundation for the practice of the divine vision.
- 10) To clarify that the practice of the divine vision is based on all three of interpretation, practice, and proof.

Secondly, to clarify the wisdom (4 items).

- 1) To summarize the various types of wisdom.

- 2) To explain the difference between delusive knowledge and wisdom.
- 3) To summarize the difference between the factual perception and the practical perception.
- 4) To indicate that it is impossible to read the Buddhist texts without knowing the difference between delusive knowledge and wisdom.

(Translated from Fumon Entsū, *Bukkoku rekishōhen*, vol. 1)



**APPENDIX 3**  
**CLASSIFIED LIST OF YŌKAI IN INOUE ENRYŌ'S**  
**YŌKAIGAKU KŌGI**

**Section of Physics**

*Chapter of Unusual Sky:* Unusual Sky, Solar and Lunar Eclipses, Unusual Stars, Shooting Stars, Clouded Sun, Rainbow, Wind and Rain, Frost and Snow, Thunder, Thunderclap, Red Sky, Mirage, Tornado.

*Chapter of Land Mystery:* Land Demon, Earth Quake, Sinking, Landslide, Natural Landslide, Sound from the Ground, Rumbling of the Ground, Flow and Ebb of the Tide, Tsunami, Mt. Sumeru, Dragon Palace, Realm of Divine Being (*senkyō*).

*Chapter of Plant and Tree:* Mysterious Plants, Unusual Grains, Unusual Trees.

*Chapter of Birds and Animals:* Apparition Birds, Mysterious animal, Unusual Fishes, Animal of Thunder, Old Fox, Fox with Nine Tails, White Fox, Old Raccoon Dog, Raccoon Dog's Drum, Apparition Otter, Apparition Cat, *Tengu*.

*Chapter of Unusual Human Being:* Unusual Human Being, Mountain Man, Mountain Woman, Old Woman in the Mountain, Snow Woman, Hermit (*sennin*), Heavenly Being.

*Chapter of Mysterious Fire:* Mysterious Fire, Demoniac Fire, Dragon Fire, Fox Fire, Bag worm, Fire Vehicle, Fire Pillar, Dragon Torch, Sacred Torch, Divine Torch.

*Chapter of Unusual Things:* Unusual things, Fossil, Thunder ax, Unusual things from Sky, Laurel, Relics of Buddha.

*Chapter of Unusual Happenings:* Transmutation, Insect of Fever (*tsutsugamushi*), Weasel's Slash, *Kappa*, Sound of Pan, Seven Mysteries.

**Section of Medicine**

*Chapter of Human Body:* Deformity of Human Body, Blood Congestion of Corpse, Stiffening of Corpse, Mummy.

*Chapter of Disease:* Epidemic, Pox, Convulsions, Swoon, Fainting, Anger, Cholera, Various Madnesses (Manic-insanity, Depressive-insanity, Wild Fancies, Mental Disorder, Hysterics), Cutting-hair-disease.

*Chapter of Remedy:* Magic, Elixir of Life, Alchemy, Sacred Water, Poisons, Good Medicine, Secret Remedy, Poisonous Arrangement of Foods, Remedy, Religious Remedy.

## **Section of Pure Philosophy**

*Chapter of Contingency:* Omen, Foreseeing, Prophecy, Sense, Correspondence of Things, Coincidence.

*Chapter of Yin and Yang:* Diagram of Eight Principal Elements (*kato*), Description of Nine Astrological Elements (*rakusho*), *Yin* and *Yang*, Fortune telling (*hakke*), Five Elements, Two Sides of Five Elements, Twelve Zodiacal or Horary Signs, Twenty Eight Stars.

*Chapter of Prediction:* Weather Forecast, Prediction of Fortune, Astrology, Sign of Fortune, Bird Singing, Bark of Dog.

*Chapter of Fortune telling:* *Eki*, Fortune telling of Turtle Shell (*kiboku*), Fortune telling of Coin, Fortune telling of Song, Fortune telling of Deer Bone (*futomanî*), Fortune telling of Fortune telling of Chatting, Fortune telling of Street Corner, Fortune telling of Sign, Fortune telling of Dream, Lots Written Oracle.

*Chapter of Foresight:* Nine Stars, Divine Fate (*tengen*), *Tōkyū*, *Kanshijutsu* Directions, *Honmeisatsu*, *Hachimon tonkō*.

*Chapter of Features:* Physiognomy, Features of Bone, Palmistry, Features of Sound, Feature of Color of Ink, Features of Letter, Features of House, Features of Landscape, Geomancy.

*Chapter of Calendar:* Good Direction(*saitoku*), God of Evil Direction (*konjin*), Eight Warrior Gods of Eight Directions, Ominous Direction, God of Season, Gods of Reporting Human Deed, Seven Heavenly Bodies, Nine Heavenly Bodies, Six Heavenly Bodies, Twelve Characteristics of Day.

*Chapter of Fortune:* Bad Year, Bad Day, Good Day, Bad Day, Day of Achievement, Day of Fail, Fortune or Bad Luck, Knowing the Date of Death, Cause and Result, Superstitious Person.

## **Section of Psychology**

*Chapter of Image:* Illusion, Wild Fancies, Delusive Idea, Delusive Opinion, Mental Effect.

*Chapter of Dream:* Dream, Unusual Dream, Message of Dream, Correspondence of Dream, Sleepwalking, Tapir.

*Chapter of Possession:* Fox Possession, Fox man, Manipulated Demon, Fox Messenger, Manipulation of Fox, Dog man, Possession of Raccoon Dog, Snake man, Human Possession, Divine possession, Demoniac Possession, Possession of Tengu.

*Chapter of Psychological Phenomena:* Electricity of Animal, Table Turning (*kokkuri*), Psychokinesis, Sleeping, Hypnotism, Mind Reading, Necromancy, Medium of Necromancy, Divine Woman.

### **Section of Religious Studies**

*Chapter of Ghost:* Ghost, Spirit of Living Human, Spirit of the Dead, Human Soul, Soul of the Dead, Separated Soul.

*Chapter of Demon:* Demon, Spiritual Beings, Demonic God, Devil, Seven Fortune Gods, God of Poverty.

*Chapter of Life after Death:* Previous Lives, Life after Death, Six Lower States of Existence, Rebirth, Heavenly Hole, Hell.

*Chapter of Impurity:* Evil Cause, Obstacle, Suffering, Impurity of Death, Impurity, Purification, Exorcism, Sweeping Calamity.

*Chapter of Prayer:* Religious Services, Soothing Spirit (*chinkon*), Impure Ritual, Prayer, Charm, Amulet, Incantation, Spell, Taboo, Chanting a Spell, Curse, Manual of Ritual Practice.

*Chapter of Miracle:* Miracle, Correspondence with Divine Will, Oracle, Message of God, Communication with God, Unification with God, Revelation of God.

### **Section of Education**

*Chapter of Wisdom and Virtue:* Heredity, Idiocy, Infant Prodigy, Great man, Blind and Dumb, Thief, Suicide, Bad Guy.

*Chapter of Education:* Antenatal Training, Child care, Technique of Memorization, Technique of Remembering.

### **Section of Miscellaneous**

*Chapter of Mysterious Happenings:* Haunted Mansion, Pillow Turning, Mysterious Happenings.

***Chapter of Monster: Monster, Ship Ghost, Street Ghost, Rokurokubi.***

***Chapter of Magic: Passing on Fire, Magical Bounding (*fudōkanashibari*), Magic, Trick, Mysterious thread coming out from Human Body.***

(Translated from Inoue Enryō, *Yōkaigaku kōgi*, vol. 1)

## BIBLIOGRAPHY

### Japanese Sources

#### Primary Sources

*Dai Nihon Bukkyō zensho* 大日本仏教全書. 150 vols. Tokyo: Bussho Kankōkai, 1912-22.

*Kokuyaku issaikyō: wakan senjutsubu* 国訳一切経: 和漢選述部. 100 vols. 1930.

*Taishō shinshū daizōkyō* 大正新修大藏經. Tokyo: Taishō Issaikyō Kankōkai, 1924-33.

Akegarasu Haya and Nishimura Kengyō., eds. 1953-56. *Kiyozawa Manshi zenshū* 清沢満之全集, 8 vols. Kyoto: Hōzōkan.

Ankei. 1858. *Shumikaigi* 須弥界儀. Preserved by Otani University Library, Kyoto.

Arisaka Takamichi and others., eds. 1973. *Tominaga Nakamoto Yamagata Bantō* 富永仲基 山片蟠桃. vol. 43, *Nihon shisōtaikei*. Tokyo: Iwanami.

Entsū. 1816. *Bonreki sakushin* 梵曆策進. Preserved by Taishō University Library, Tokyo.

\_\_\_\_\_. 1810. *Bukkoku rekishō hen* 仏国曆象編, 5 vols. Preserved by Taishō University Library, Tokyo.

\_\_\_\_\_. 1821. *Jikken Shumikai setsu* 実験須弥界説, 3 vols. Preserved by Taishō University Library, Tokyo.

\_\_\_\_\_. 1819. *Risseabidonron rekisho* 立世阿毘曇論曆書. Preserved by Taishō University Library, Tokyo.

\_\_\_\_\_. 1813. *Shumisengi mei narabini jo wakai* 須弥山儀銘並序和解, 2 vols. Preserved by Taishō University Library, Tokyo.

\_\_\_\_\_. 1824. *Uyoku genninron ryakukai* 羽翼原人論略解. Preserved by Taishō University Library, Tokyo.

Fujii Saishō. 1883. *Tengaku sakurei* 天学策励.

- Fujita Yori-hisa. 1843. *Dansenkotsugaengi zusetu* 団扇骨弦機図説. Preserved by Taishio University Library, Tokyo.
- Fujiyoshi Jikai., ed. 1966. *Ojō jōdo no rikai to hyōgen* 往生浄土の理解と表現. Kyoto: Chionin jōdoshūgaku kenkyūjo.
- Fukō Yūman. 1883. *Honchō Bonreki shishi keifu* 本朝梵曆師資系譜. Preserved by National Diet Library, Tokyo.
- Fukuda Gyōkai. 1878. *Shumisen ryakusetsu* 須弥山略説. Preserved by Taishō University Library, Tokyo.
- Fukushima Hirota., ed. 1975. *Shimaji Mokurai zenshū* 島地黙雷全集, vol. 3. Tokyo: Honganji shuppan kyōkai.
- Furuta Shōkin., ed. 1981. *Meiji Bukkyō shisōshiryō shūsei* 明治仏教思想資料集成, 5 vols. Kyoto: Dōbōsha.
- Inoue Enryō. 1979. *Yōkaigaku kōgi* 妖怪学講義, 6 vols. Tokyo: Kokuso kankōkai (reprint of 1896 edition).
- \_\_\_\_\_. 1983. *Shinpen Yōkai sōsho* 新編妖怪叢書, 8 vols. Tokyo: Kokusho kankōkai (reprint).
- \_\_\_\_\_. 1984. *Yōkaigaku zasshi* 妖怪学雑誌, 5 vols. Tokyo: Kokusho kankōkai (reprint).
- \_\_\_\_\_. 1990. *Inoue Enryō senshū* 井上円了選集, 6 vols. Tokyo: Tōyō University.
- \_\_\_\_\_. 1919. *Shinkai* 真怪. Tokyo: Heigo shuppansha.
- Ishida Mizumaro., ed. 1970. *Genshin* 源信. *Nihon shisōtaikei*, vol. 3. Tokyo: Iwanami.
- Kanchū. 1843. *Shumikai shiji idō ben* 須弥界四時異同弁. Preserved by Tenri University Library, Nara.
- Kimura Taiken zenshū kankōiinkai., ed. 1967-68. *Kimura Taiken zenshū* 木村泰賢全集, 6 vols. Tokyo: Daihōrinkaku.
- Matsubara Yūzen and Terakawa Shunshō., eds. 1985. *Teihon Kiyozawa Manshi shū* 定本清沢満之集. Kyoto: Hōzōkan.
- Matsumura Akira and others., eds. 1976. *Yogaku jō* 洋学 上. *Nihon shishō taikei* vol. 64. Tokyo: Iwanami.
- Monnō, *Hi tenkei wakumon* 非天経或問. Preserved by National Diet Library, Tokyo.

- Monnō, *Kusen hakkai kaichōron* 九山八海解嘲論. Preserved by Taishō University Library, Tokyo.
- Mori Naokane. 1970. "Gohō shichiron 護法資治論." in vol. 2 of *Nihon shisō tōsō shiryō* 日本思想闘争資料. Tokyo: Meicho kankōkai.
- Mori Tatsukichi., ed. 1975. *Shinshū shiryō shūsei* 真宗資料集成, vols. 12. 13. Kyoto: Dōbōsha.
- Nakai, Sōtarō. 1942. *Shiba Kōkan* 司馬江漢. Tokyo: Atoriesha.
- Ogawa Teizō and others., eds. 1972. *Yōgaku ge* 洋学 下. *Nihon shisō taikai*, vol. 65. Tokyo: Iwanami.
- Okubo Tadashi., ed. 1972. *Motoori Norinaga zenshū* 本居宣長全集, vol. 14. Tokyo: Chikuma Shobō.
- Ono, Genmyō. 1925-26. "Bukkyō tenmongaku 仏教天文学." *Gendai Bukkyō* 3, no. 24, 25, 27, 28, 29 and 4, no. 33.
- Ouchi Seiran., ed. 1867. *Zoku Nihon Kōsōden* 続日本高僧伝. Preserved by Taishō University Library, Tokyo.
- Reiyū. 1868. *Shumikai jikken rekisho* 須弥界実験曆書, 3 vols. Preserved by Otani university, Kyoto.
- \_\_\_\_\_. 1978. "Gohō sakushin 護法策進." In *Shinshū shiryō shūsei* 真宗資料集成, vol. 10, edited by Kashiwara Yūsen. Kyoto: Dōbōsha.
- Sada Kaiseiki. 1876. *Shumi chikyū jukumōron* 須弥地球執妄論. Preserved by Tenri University Library, Nara.
- \_\_\_\_\_. 1981. "Shijitsu tōshōgi shohen 視実等象儀初篇." In *Meiji Bukkyōshisō shiryōs'yūsei* 明治仏教思想資料集成, vol. 5. Kyoto: Dōbōsha.
- Saeki Arikiyo and others., eds. 1973. *Hirata Atsutane Ban Nobutomo Okuni Takamasa* 平田篤胤 伴信友 大國隆正. *Nihon shisō taikai*, vol. 50. Tokyo: Iwanami.
- Satake Jynnyo., ed. 1936. *Kinnō gohō Shingyō gakutō* 護皇護法信曉学頭. Kyoto: Daigyōjishi kankōinkai.
- Shigyō. 1846. *Daikanki yujun binran* 大寒氣由旬便覽. In Otani University Library, Kyoto.
- Shimazaki Takao and others., eds. 1977. *Andō Shōeki Satō Nobuhiro* 安藤昌益 佐藤信淵. *Nihon shisō taikai*, vol. 45. Tokyo: Iwanami.

Tamaru Noriyoshi.,ed. 1973. *Kindai Nihon shūkyōshi shiryō* 近代日本宗教史資料, vol. 4.  
Tokyo: Kōsei shuppan.

\* This list does not refer to each title in the multivolume texts. The titles of the Buddhist scriptures and the historical documents are cited in Glossary. I also omitted the general reference materials.

### *Secondary Sources*

Amino Yoshihiko. 1978. *Muen, Kugai, Raku: Nihon chūsei no jiyū to heiwa* 無縁・苦界・楽 : 日本中世の自由と平和. Tokyo: Heibonsha.

\_\_\_\_\_. 1996. *Nihon chūsei shiryōgaku no kadai* 日本中世史科学の課題. Tokyo; Kōbundō.

Amino Yoshihiko and Miyata Noboru.,eds. 1994. *Rekishi to Minzokugaku* 歴史と民俗学.  
*Nihon rekishi minzoku ronshū*, vol. 1. Tokyo: Yoshikawa kōbunkan.

Arisaka, Takamichi. 1982. "Yamagata Bantō no daiuchūron nitsuite 山片蟠桃の大宇宙論について." In *Nihon yōgakushi no kenkyū*, vol. 4. Osaka: Sōgensha.

Bitō Masahide. 1961. *Nihon hōken shisōshi kenkyū* 日本封建思想史研究. Tokyo: Aoki shoten.

Endō, Tōru. 1995. "Hirata Atsutane no takairon saikō 平田篤胤の他界論再考." *Shūkyōkenkyū* 305: 93-117.

Fukui Norihiko. 1995. *Atarashii rekishigaku towa nanika* 「新しい歴史学」とは何か.  
Tokyo: Kōdansha.

Fujii Masao. 1974. *Gendaijin no shinkōkōzō* 現代人の信仰構造. Tokyo: Hyōronsha.

Harada Toshiaki., ed. 1967. *Nihon ryōikii* 日本靈異記. *Tōyō bunko*, vol. 97. Tokyo: Heibon sha.

Hatta Yukio. 1989. *Mikkyō no shōchōsekai* 密教の象徴世界. Tokyo: Hirakawa shuppan.

Hayami Tasuku. 1979. *Jizō shinkō* 地藏信仰. Tokyo: Hanawa shobō.

Hongō Takamori and Fukaya Katsumi., eds. 1981. *Kinsei shisōron* 近世思想論. Tokyo: Iwanami.

Hori Ichirō. 1951. *Minkan shinkō* 民間信仰. Tokyo: Iwanami.

Ienaga Saburō. 1954. *Nihon dōtoku shisōshi* 日本道徳思想史. Tokyo: Iwanami.



- Ikeda Eishun. 1976. *Meiji no Bukkyō: sonokōdō to shisō* 明治の仏教：その行動と思想. Tokyo: Hyōron sha.
- \_\_\_\_\_. 1976. *Meiji no shin bukkyō undō* 明治の新仏教運動. Tokyo: Yoshikawa kōbunkan.
- Ikegami Yoshihiko., ed. *Bunka kigōron* 文化記号論. Tokyo: Kōdansha.
- Irokawa Daikichi. 1976. *Meiji seishinshi* 明治精神史, 2 vols. Tokyo: Kōdansha.
- \_\_\_\_\_. 1991. *Minshūshi sono 100 nen* 民衆史その100年. Tokyo: Kōdansha.
- Ishida Shōhō. 1975. *Mandara no kenkyū* 曼荼羅の研究. Tokyo: Tōkyōbijutsu.
- Isomae Junichi. 1991. *Kinsei, kindai niokeru kiki kaishaku: Shinwa to gōrishugi* 近世・近代における記紀解釈：神話と合理主義. *Shūkyōkenkyū* 290: 1-30.
- Itakura Kiyonobu. 1977. *Yōkai hakase Inoue Enryō to Yōkaigaku no tenkai* 妖怪博士井上円了と妖怪学の展開. In *Kasetsu jikken jugyō kenkyū*, vol. 11. Tokyo: Kasetsusha.
- Itazawa, Takeo. 1941. 1941. "Kinsei niokeru chidōsetsu no tenkai to sono handō 近世における地動説の展開とその反動." *Shigaku zasshi* 52: 1-30.
- Itō, Tasaburō. 1934. "Kinsei niokeru kagakuteki sekaikan no hattatsu nitaisuru handō nitsuite 近世における科学的世界観の発達にたいする反動について." *Shūkyōkenkyū* 11, no. 2: 67-92.
- Iwata Keiji., ed. 1989. *Ajia no uchūkan* アジアの宇宙観. Tokyo: Kōdansha.
- Karatani Kōjin. 1988. *Nihon kindai bungaku no kigen* 日本近代文学の起源. Tokyo: Kōdansha.
- Kasahara Kazuo. 1976. *Nihonshi nimiru Jigoku to Gokuraku* 日本史にみる地獄と極楽. *NHK Books*, vol 273. Tokyo: NHK.
- \_\_\_\_\_, ed. 1988. *Seikai shūkyōshi sōsho* 世界宗教史叢書, vols. 11, 12. Tokyo: Yamakawa shuppan.
- \_\_\_\_\_, ed. 1963. *Shinshūshi gaisetsu* 真宗史概説. Kyoto: Heigakuji shoten.
- Kashiwara, Yūsen. 1987. "Kindai niokeru jōdōkan no suii 近代における浄土観の推移." In *Ronshū Nihon Bukkyōshi*, vol. 8. Tokyo: Yūzankaku.

- \_\_\_\_\_. 1984. "Sada Kaiseki no Bukkyō keizai ron 佐田介石の仏教経済論." *Bukkyō shigaku ronshū* 27, No. 1: 1-22.
- \_\_\_\_\_. 1971. *Kinsei shomin Bukkyō no kenkyū* 近世庶民仏教の研究. Kyoto: Hōzōkan.
- \_\_\_\_\_. 1969. *Kinsei kindai bukkyō shi no kenkyū* 近世近代仏教史の研究. Kyoto: Heigaku shoten.
- Kawamura Kōshō. 1973. *Gōshisō no nihonteki tenkai: Shoron Inoue Enryō no Yōkaigaku nitsuite* 業思想の日本的展開：緒論 井上円了の妖怪学について. *Tōyōgakukenyū* 7.
- \_\_\_\_\_. 1975. *Inoue Enryō no reikonfumetsu ron nitsuite* 井上円了の靈魂不滅論について. *Tōyōgakukenyū* 9.
- \_\_\_\_\_. 1976. *Yōkaigaku no ichishiten* 妖怪学の一視点. *Tōyōgaku kenkyū* 10.
- \_\_\_\_\_. 1984. *Inoue Enryō no Yōkaigaku to Bukkyō no Gōshisō* 井上円了の妖怪学と仏教の業思想. *Tōyōgakukenyū* 18.
- Kimura Taiken. "Sada Kaiseki shi no Shijitsu tōshōron 佐田介石氏の視実等象論." *Shūkyōkenkyū* 1: 227-236.
- Kinugasa Yasuyoshi., ed. 1995. *Kinsei shisōshi kenkyū no genzai* 近世思想史研究の現在. Kyoto: Yūhikaku.
- \_\_\_\_\_. 1976. *Kinsei Jugaku shisōshi no kenkyū* 近世儒学思想史の研究. Tokyo: Hōsei daigaku shuppanyoku.
- Komatsu Kazuhiko. 1994. *Hyōreisinkō ron* 憑靈信仰論. Tokyo: Kōdansha.
- Koyasu, Nobukuni. 1995. "Nakai Riken aruiwa kinsei jusha chishikijin no sonzai to chi no isō 中井履軒あるいは近世儒者知識人の存在と知の位相." *Shisō* 848.
- Kudō, Kōkai. 1941. "Fumon risshi no Bonreki undō to shino ryakuden 普門律師の梵曆運動と氏の略伝." *Meiji shōtoku kinen gakkaihō* 56: 17-41.
- Kuroda, Genji. 1972. *Shiba Kōkan* 司馬江漢. Tokyo: Tokyo Bijyutsu.
- Kurozumi Makoto. 1994. "Kinsei Nihon shisōshi niokeru Bukkyō no ichi 近世日本思想史における仏教の位置." In *Nihon no Bukkyō*, vol. 1. Kyoto: Hōzōkan.
- Maruyama Masao. 1952. *Nihon seiji shisōshi kenkyū* 日本政治思想史研究. Tokyo: Tokyo daigaku shuppankai.

- Maruyama Masao. 1961. *Nihon no shisō* 日本の思想. Tokyo: Iwanami.
- \_\_\_\_\_. *Chūsei to hangyaku: tenkanki nihon no seishinshiteki isō* 忠誠と反逆 : 転換期日本の精神史的位相. Tokyo: Chikuma shobō.
- Masutani Humio. 1931. *Kindai bukkyō shisōshi* 近代仏教思想史. Tokyo: Sanseidō.
- Mīnamoto Ryōen. 1980. *Kinsei Jitsugaku shisōshi no kenkyū* 近世実学思想史の研究. Tokyo: Sōbunsha.
- \_\_\_\_\_. 1990. *Edo kōki no hikaku bunka kenkyū* 江戸後期の比較文化研究. Tokyo: Perikansha.
- Miyamoto Shōson. 1975. *Meiji Bukkyō no shisō: Inoue Enryō no jiseki* 明治仏教の思想 : 井上円了の事績. Tokyo: Kōsei shuppansha.
- Miyake Hitoshi. 1989. *Syūkyō minzokugaku* 宗教民俗学. Tokyo: Tōkyōdaigaku shuppankai.
- Miyata Noboru. 1990. *Yōkai no Minzokugaku* 妖怪の民俗学. Tokyo: Iwanami.
- Morimoto Junichirō. 1967. *Tōyō seiji shisōshi kenkyū* 東洋政治思想史研究. Tokyo: Miraisha.
- Morioka Kiyomi. 1962. *Shinshūkyōdan to ie seido* 真宗教団と家制度. Tokyo: Yoshikawa Kōbunkan.
- Murakami Shigeyoshi and Yasumaru Yoshio., eds. 1986. *Taikei bukkyō to nihonjin* 体系仏教と日本人, vols. 10, 11. Tokyo: Shunjūsha.
- Nagazumi Yoshiaki., ed. 1967. *Konjaku monogatari shū* 今昔物語集, 3 vols. *Tōyōbunko*, vol. 80, 89, 96. Tokyo: Heibonsha.
- Naitō kanji. 1941. "Shūkyōto kiezai rinri: Jōdo shinshū to Omi shōnin 宗教と経済倫理 : 浄土真宗と近江商人." *Nihon shakaigaku nenpō* 8.
- Naramoto Tatsuya. 1978. *Nihon kinsei no shisō to bunka* 日本近世の思想と文化. Tokyo: Iwanami.
- \_\_\_\_\_. ed. 1965. *Kinsei nihon shisōshi kenkyū* 近世日本思想史研究. Tokyo: Kawade shobō.
- Oji Toshiaki. 1987. "Echizu ni arawareta sekaizō 絵地図に現われた世界像." In *Nihon no shakaishi*, vol. 7. Tokyo: Iwanami.

- Oji Toshiaki. 1996. *Echizu no sekaizō* 絵地図の世界像. Tokyo: Iwanami.
- Okada Masahiko. 1990. "Kindai niokeru Shūkyōdentō no henyō: Shinshū Otaniha no shūmukikō no kindai" 近代における宗教伝統の変容：真宗大谷派の宗務機構の近代化." *Shūkyōkenkyū* 286: 1-26.
- \_\_\_\_\_. 1991. "Kiyozawa Manshi to Shinshū Otaniha: Reformer toshitenō Kiyozawa Manshi" 清沢満之と真宗大谷派：リフォーマーとしての清沢満之. *Taishōdaigaku daigakuin kenkyū kiyō* 15.
- \_\_\_\_\_. 1992. "Kindaika to dentōteki sekaikan: Entsū no shumisensetsu yōgoron wo megutte" 近代化と伝統的世界観：円通の須弥山説擁護論をめぐって." *Shūkyōkenkyū* 291.
- \_\_\_\_\_. 1994. "Inoue Enryō no Yōkai kenkyū: kindaika to dentōteki sekaikan" 井上円了の妖怪学：近代化と伝統的世界観. *Shūkyōkenkyū* 299.
- Okuwa Hitoshi. 1996. "Bukkyōteki sekai toshitenō kinsei" 仏教的世界としての近世." *Nihon shisōshi* 48.
- Sadakata, Akira. 1973. *Shumisen to gokuraku* 須弥山と極楽. Tokyo: Kōdansha.
- Sakurai Tokutarō. 1989. *Reikonkan no keihu* 靈魂観の系譜. Tokyo: Kōdansha.
- Satō Nobuo. 1992. *Retorikku kankaku* レトリック感覚. Tokyo: Kōdansha.
- \_\_\_\_\_. 1992. *Retorikku ninshiki* レトリック認識. Tokyo: Kōdansha.
- Serigawa Hiromichi. 1992. *Kindaika no bukkyō shisō* 近代化の仏教思想. Tokyo: Daitō shuppan.
- Shimazono Susumu. 1992. *Gendai kyūsai shūkyō ron* 現代救済宗教論. Tokyo: Seikyūsha.
- Sugiura Kōhei. 1994. *Nihon no katachi Ajia no katachi* 日本のかたち・アジアのかたち. Tokyo: Sanseidō.
- Suzuki Munekane. 1964. *Nihon no kindaika to On no shisō* 日本の近代化と「恩」の思想. Hōritsu bunkasha.
- Suzuki Daisetsu. 1972. *Nihon teki reisei* 日本的靈性. Tokyo: Iwanami.
- Shinshū Otaniha kyōkakenkyūjo., ed. *Kiyozawa Manshi no kenkyū* 清沢満之の研究. Kyoto: Shinshū Otaniha kyōkakenkyūjo.

- Tahara Tsuguo. 1967. *Tokugawa shisōshi kenkyū* 徳川思想史研究. Tokyo: Miraisha.
- Takeda Kiyoko., ed. 1961. *Shisōshi no hōhō to taishō* 思想史の方法と対象. Tokyo: Sōbunsha.
- Tamamuro Fumio, Ikeda Eishun, Kōmoto Mitsugu., eds. 1988. *Ronshū nihon bukkyō shi* 論集日本仏教史, vols. 7, 8, 9. Tokyo: Yūzankaku.
- Tamamuro Fumio and Okuwa Hitoshi., eds. 1979. *Kinsei Bukkyō no shomondai* 近世仏教の諸問題. Tokyo: Yūzankaku.
- Tamamuro Taijō., ed. *Nihon Bukkyōshi* 日本仏教史, vol. 3. Kyoto: Hōzōkan.
- \_\_\_\_\_. 1963. *Sōshiki bukkyō* 葬式仏教. Tokyo: Daihōrinkaku.
- Tanigawa Tetsuhumi and Ishida Kazuyoshi., eds. 1976. *Nihon shisōshi kouza: Kinsei no shisō* 日本思想史講座:近世の思想, vol. 1-3. Tokyo: Yūzankaku.
- Tokoro Shigeki. 1972. *Kindaishakai to nichirensugui* 近代社会と日蓮主義. Tokyo: Seikyūsha.
- Tōyōdaigaku Inoue Enryō kenkyūkai., ed. 1987. *Inoue Enryō kankei bunken nenpyō* 井上円了関係文献年表. Tokyo: Tōyō University.
- Tsuchiya Senkyō. 1939. *Meiji bukkyō shi* 明治仏教史. Tokyo: Sanseidō.
- Tsuda Sōkichi. 1977. *Bungaku ni arawaretaru waga kokuminshisō no kenkyū* 文学に現われたる我が国民思想の研究. Tokyo: Iwanami.
- \_\_\_\_\_. 1966. *Tsuda Sōkichi zenshū, bekkān* 津田左右吉全集・別巻, vol. 1. Tokyo: Iwanami.
- Tsuji Zennosuke. 1967-71. *Nihon Bukkyō shi: Kinsei hen* 日本仏教史: 近世篇. Tokyo: Iwanami.
- Yamaori Tetsuo. 1993. *Bukkyō minzokugaku* 仏教民俗学. Tokyo: Kōdansha.
- Yanagida Kunio. 1977. *Yōkai dangi* 妖怪談義. Tokyo: Kōdansha.
- Yasumaru Yoshio. 1974. *Nihon no kindaika to minshūshisō* 日本の近代化と民衆思想. Tokyo: Aoki shoten.
- \_\_\_\_\_. 1996. *Hōhō toshiteno shisōshi* 方法としての思想史. Tokyo: Azekura shobō.

Yoshida Kyūichi and others., ed. 1961-63. *Kōza kindai bukkyō* 講座近代仏教, 6 vols. Kyoto: Hōzōkan.

Yoshida Kyūichi. 1961. *Kiyozawa Manshi* 清沢満之. Tokyo: Yoshikawa Kōbunkan.

\_\_\_\_\_. 1959. *Nihon kindai bukkyō shi kenkyū* 日本近代仏教史研究. Tokyo: Sōbunsha.

\_\_\_\_\_. 1960. *Nihon no kindai to bukkyō* 日本の近代化と仏教. Tokyo: Hyōronsha.

\_\_\_\_\_. 1964. *Nihon kindai bukkyō shakaishi kenkyū* 日本近代仏教社会史研究. Tokyo: Yoshikawa kōbunkan.

Yoshida, Tadashi. 1986. "Kinsei niokeru Bukkyō to seiyōteki shizenkan no deai 近世における仏教と西洋的自然観の出会い." In *Bukkyō to Nihonjin*, vol. 11. Tokyo: Shunjūsha.

Wakimoto Tsuneya. 1982. *Hyōden Kiyozawa Manshi* 評伝清沢満之. Kyoto: Hōzōkan.

\_\_\_\_\_, ed. 1986. *Kindai no shūkyō undō* 近代の宗教運動. Kyoto: Hōzōkan.

Watanabe, Toshio. *Kinsei nihon tenmongaku shi* 近世日本天文学史. Tokyo: Kōseisha Kōseikaku.

Watsuji Tetsurō. 1992. *Nihon seishinshi kenkyū* 日本精神史研究. Tokyo: Iwanami.

### **Non-Japanese Sources**

Ariés, Philippe. 1974. *Western Attitudes toward Death*. Baltimore: Johns Hopkins University Press.

\_\_\_\_\_. 1962. *Centuries of Childhood: A Social History of Family Life*. New York: Vintage Books.

Berman, Art. 1994. *Preface to Modernism*. Chicago: University of Illinois Press.

Barnes, Trevor J. and Duncan, James S., eds. 1992. *Writing Worlds: Discourse, Text and Metaphor in the Representation of Landscape*. New York: Routledge.

Barger, Peter L. and Luckmann, Thomas. 1966. *The Social Construction of Reality*. New York: Anchor Books.

Baxandall, Michael. 1972. *Painting and Experience: In Fifteenth-century Italy*. Oxford: Oxford University Press.

- Bellah, Robert N. 1957. *Tokugawa Religion*. New York: Free Press.
- Benjamin, Walter. 1968. *Illuminations*. New York: Schocken Books.
- Bielefeldt, Carl. 1988. *Dōgen's Manuals of Zen Meditation*. Berkeley: University of California Press.
- Bodiford, William M. 1993. *Sōtō Zen in Medieval Japan*. Honolulu: University of Hawaii Press.
- Bourdieu, Pierre. 1990. *The Logic of Practice*. Stanford: Stanford University Press.
- Braudel, Fernand. 1980. *On History*. Chicago: University of Chicago Press.
- Burke, Peter. 1992. *History and Social Theory*. New York: Cornell University Press.
- \_\_\_\_\_. 1978. *Popular Culture in Early Modern Europe*. New York: Harper & Row.
- \_\_\_\_\_. 1990. *The French Historical Revolution: The Annales School 1929-89*. Stanford: Stanford University Press.
- \_\_\_\_\_. 1992. *New Perspectives on Historical Writing*. Pennsylvania: Pennsylvania State University Press.
- Canary, Robert and Kozicki, Henry., eds. 1978. *The Writing of history: Literary Form and Historical Knowledge*. Baltimore: Johns Hopkins University Press.
- Carr, David. 1986. *Time, Narrative, and History*. Bloomington: Indiana University Press.
- Carrard, Philippe. 1992. *Poetics of the New History: French Historical Discourse from Braudel to Chartier*. Baltimore: Johns Hopkins University Press.
- Cosgrove, Denis. 1992. "Mapping New Worlds: Culture and Cartography in Sixteenth-Century Venice." *Imago Mundi* 44: 65-89.
- Clifford, James and Marcus, George E., eds. *Writing Culture: The Poetics and Politics of Ethnography*. Berkeley: University of California Press.
- Clifford, James. 1988. *Predicament of Culture: Twenty-Century Ethnography, Literature, and Art*. Cambridge: Harvard University Press.
- Danto, Arthur C. 1965. *Analytical philosophy of History*. Cambridge: Cambridge University Press.
- \_\_\_\_\_. 1985. *Narration and Knowledge*. New York: Columbia University Press.
- Davis, Winston. 1992. *Japanese Religion and Society: Paradigms of Structure and Change*. New York: State University of New York press.

- De Certeau, Michel. 1988. *The Writing of History*. New York: Columbia University Press.
- Dosse, François. *New History in France: The Triumph of the Annales*. Chicago: University of Illinois Press.
- Durkheim, Emile. 1965. *The Elementary Forms of the Religious Life*. New York: Free Press.
- Earhart, Byron H. 1982. *Japanese Religion: Unity and Diversity*. California: Wadsworth INC.
- Elias, Norbert. 1994. *The Civilizing Process*. Cambridge: Blackwell Ltd.
- Faure. 1991. *The Rhetoric of Immediacy: A Cultural Critique of Chan/Zen Buddhism*. Princeton: Princeton University Press.
- Faure. 1993. *Chan Insights and Oversights: An Epistemological Critique of the Chan Tradition*. Princeton: Princeton University Press.
- Febvre, Lucien. 1982. *The Problem of Unbelief in the Sixteenth Century: the Religion of Rabelais*. Cambridge: Harvard University Press.
- Foucault, Michel. 1970. *The Order of Things: An Archeology of the Human Sciences*. New York: Vintage Books.
- \_\_\_\_\_. 1972. *The Archeology of Knowledge*. New York: Pantheon Books.
- \_\_\_\_\_. 1965. *Madness and Civilization: A History of Insanity in the Age of Reason*. New York: Vintage Books.
- \_\_\_\_\_. 1973. *The Birth of the Clinic: An Archaeology of Medical Perception*. New York: Vintage Books.
- Geertz, Clifford. 1988. *Works and Lives: The Anthropologist as Author*. Stanford: Stanford University Press.
- \_\_\_\_\_. 1973. *The Interpretation of Cultures*. Harper Collins.
- \_\_\_\_\_. 1980. *Negara: the Theater State in Nineteenth-Century Bali*. Princeton: Princeton University Press.
- Genette, Gérard. *Narrative Discourse: An Essay in Method*. New York: Cornell University Press.
- \_\_\_\_\_. 1988. *Narrative Discourse Revised*. Ithaca: Cornell University Press.
- Ginzburg, Carlo. 1982. *The Cheese and the Worms: The Cosmos of a Sixteenth-Century Miller*. New York: Penguin Books.



- Ginzburg, Carlo. 1989. *Clues, Myths, and the Historical Method*. Baltimore: Johns Hopkins University Press.
- Girard, René. 1965. *Deceit, Desire, and Novel: Self and Other in Literary Structure*. Baltimore: Johns Hopkins University Press.
- Gombrich, Ernest H. 1960. *Art and Illusion: A Study in the Psychology of Pictorial Representation*. Princeton: Princeton University Press.
- \_\_\_\_\_. 1950. *The Story of Art*. New York: Oxford University Press.
- Goodman, Nelson. 1978. *Ways of Worldmaking*. Indiana: Hackett Publishing Company.
- \_\_\_\_\_. 1976. *Language of Art: An Approach to a Theory of Symbols*. Indianapolis: Hackett Publishing Company, INC.
- Harvey, David. 1990. *The Condition of Postmodernity*. London: Blackwell.
- Hrotonian, H. D. *Things Seen and Unseen: Discourse and ideology in Tokugawa Nativism*. Chicago: University of Chicago Press.
- Sangren, Steven P. 1987. *History and Magical Power in a Chinese Community*. Stanford: Stanford University Press.
- Hobsbawn, Eric and Ranger, Terence., eds. 1983. *The Invention of Tradition*. New York: Cambridge University Press.
- Hopper, Jeffery. 1989. *Modern Theology I: Cultural Revolutions and New Worlds*. Philadelphia: Fortress Press.
- Jameson, Fredric. 1981. *The Political Unconscious: Narrative as a Socially Symbolic Act*. Ithaca: Cornell University Press.
- Keene, Donald. 1969. *The Japanese Discovery of Europe, 1720-1830*. California: Stanford University Press.
- Ketelaar, James E. *On Heretics and Martyrs in Meiji Japan: Buddhism and its Persecution*. New Jersey: Princeton University Press.
- Kuhn, Thomas S. 1970. *The Structure of Scientific Revolutions*. University of Chicago Press.
- Kitagawa, Joseph M. 1966. *Religion in Japanese History*. New York: Columbia University Press.
- Kloetzli, Randy. 1983. *Buddhist Cosmology: from Single World System to Pure Land*. Delhi: Motilal Banarsidass.
- Koselleck, Reinhart. 1985. *Futures Past: On the Semantics of Historical Times*. Massachusetts: MIT Press.

- LaCapra, Dominick. 1985. *History and Criticism*. Ithaca: Cornell University Press.
- LaFluer, William R. 1983. *The Karma of Words: Buddhism and the Literary Arts in Medieval Japan*. California: University of California Press.
- Lawrence, Bruce B. 1989. *Defenders of God: the Fundamentalist Revolt against the Modern Age*. San Francisco: Harper & Row.
- Le Goff, Jacques and Nora, Pierre., eds. *Constructing the Past: Essays in Historical Methodology*. Cambridge: Cambridge University Press.
- Le Goff, Jacques. 1980. *Time, Work, and Culture in the Middle Ages*. Chicago: University of Chicago Press.
- Lévi-Strauss, Claude. 1966. *The Savage Mind*. Chicago: University of Chicago Press.
- Mink, Louis. 1970. "History and Fiction as Modes of Comprehension." *New Literary History* 1:541-58.
- Martin, Wallace. 1986. *Recent Theories of Narrative*. New York: Cornell University Press.
- Masao, Maruyama. 1974. *Studies in the Intellectual History of Tokugawa Japan*. Princeton: Princeton University Press.
- Mauss, Marcel. 1990. *The Gift: The Form and Reason for Exchange in Archaic Society*. New York: W.W. Norton.
- McMullin, Neil. 1984. *Buddhism and the State in Sixteenth-century Japan*. New Jersey: Princeton University Press.
- Melville, Stephen and Readings, Bill., eds. *Vision and Textuality*. Durham: Duke University Press.
- Najita, Tetsuo. 1987. *Visions of Virtue in Tokugawa Japan: Kaitokudō, Merchant Academy of Osaka*. Chicago: University of Chicago Press.
- Najita, Tetsuo and Scheiner, Irwin. 1978. *Japanese Thought in the Tokugawa Period 1600-1868*. Chicago: University of Chicago Press.
- Naoki, Sakai. 1991. *Voices of the Past: The Status of Language in Eighteenth-Century Japanese Discourse*. Ithaca: Cornell University Press.
- Ooms, Herman. 1985. *Tokugawa Ideology: Early Constructs, 1570-1680*. Princeton: Princeton University Press.
- Pratt, Mary Louise. 1992. *Imperial Eyes: Travel Writing and Transculturation*. New York: Routledge.
- Propp, Vladimir. 1968. *Morphology of the Folktale*. Austin: University of Texas Press.

- Reader, Ian. *Religion in Contemporary Japan*. Honolulu: University of Hawaii Press, 1991.
- Ricoueur, Paul. 1977. *The Rule of Metaphor: Multi-disciplinary Studies of the Creation of Meaning in Language*. Toronto: University of Toronto Press.
- \_\_\_\_\_. 1983-84. *Time and Narrative*, vols. 1, 2. Chicago: University of Chicago Press.
- Roth, Michael S., ed. 1994. *Rediscovering History: Culture, Politics, and the Psyche*. Stanford: Stanford University Press.
- Roth, Michael S. 1995. *The Ironist's Cage: Memory, Trauma, and the Construction of History*. New York: Columbia University Press.
- Said, Edward W. 1978. *Orientalism*. New York: Vintage Books.
- \_\_\_\_\_. 1983. *The World, the Text, and the Critic*. Cambridge: Harvard University Press.
- Smith, Jonathan Z. 1982. *Imagining Religion: from Babylon to Jonestown*. Chicago: University of Chicago Press.
- Tanabe, George J. Jr. 1992. *Myōe the Dreamkeeper: Fantasy and Knowledge in Early Kamakura Buddhism*. Massachusetts: Harvard University Press.
- Taussig, Michael. 1991. *Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing*. Chicago: University of Chicago Press.
- \_\_\_\_\_. 1993. *Mimesis and Alterity: A Particular History of the Senses*. New York: Routledge.
- Thongchai, Winichakul. 1994. *Siam Mapped: A History of the Geo-Body of a Nation*. Honolulu: University of Hawaii Press.
- Todorov, Tzvetan. 1981. *Introduction to Poetics*. Minneapolis: University of Minnesota Press.
- Veyne, Paul. 1971. *Writing History: Essay on Epistemology*. Middletown: Wesleyan University Press.
- Weber, Max. 1920. *Gesammelte Aufsätze zur Religionssoziologie*, 3 vols. Tübingen: J.C.B.Mohr.
- White, Hayden. 1987. *The Content of the Form: Narrative Discourse and Historical Representation*. Baltimore: Johns Hopkins University Press.
- \_\_\_\_\_. 1973. *Metahistory: The Historical Imagination in Nineteenth-Century Europe*. Baltimore: Johns Hopkins University Press.
- \_\_\_\_\_. 1978. *Tropics of Discourse: Essays in Cultural Criticism*. Baltimore: Johns Hopkins University Press.

Yerushalmi, Yosef Hayim. 1989. *Zakhor: Jewish History and Jewish Memory*. New York: Schocken Books.