

Geographic Information of the Listed Mountains in the Encyclopedia “*Kojiruien*”

『古事類苑』記載の「山」への地理情報付与

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要旨

明治期に編纂された百科事典『古事類苑』に掲載されている山に地理情報（緯度・経度・標高）を与え、GISを用いて地図化した。この百科事典は30の部門に分かれており、現代の自然・人文・社会科学の対象とされる広い範囲をカバーしている。このうち、地理的な事象は「地部」で扱われている。「地部」は50の章からなり、地部1では日本地理の総説が述べられ、地部2では日本の首都の変遷が取り上げられる。続く地部3～36では地誌的に、地部37～50では系統地理的に、それぞれ日本の地理が記述されている。本研究では、地部43～44の「山」に関する記述に着目した。

この百科事典では、山は「名山」「高山」「火山」のカテゴリーに分けられている。取り上げられている山の数、それぞれ、27、59、17である。「名山」は近畿地方に集中しており、とりわけ和歌や連歌に登場するような里山がほとんどである。「高山」は比較的全国から選ばれているが、宗教登山の対象となっている山が多く、日本の代表的な高山地域である日本アルプスからはほとんど選ばれていない。「火山」の分布にも偏りがあり、全国に広範囲に分布する火山のうち、ごく名の知れた少数の山しか選ばれていない。この3つのカテゴリーの山を、現代の名山として広く認知されている深田久弥の「日本百名山」と比較してみると、古事類苑に選ばれている山は概して標高が低く、文化的要素が極めて重視されているといえる。

I. Introduction

Mountainous areas cover a large part of Japan, and comprise many natural and cultural landscapes throughout the country. Japanese mountains have been described in many encyclopedias and appear in many works of literature. The first edited list of mountains can be found in the Japanese encyclopedia “*Kojiruien*” (first edited by the Ministry of Education), which comprises 1,000 volumes in its original form, containing 350 books in Japanese-style and 51 books in Western-style bindings. This encyclopedia, published between 1896 and 1914, has been used as the most representative source from the Meiji to the Taisho era (Yamada et al., 2006). It consists of 30 sections which include various terms present in the natural and social sciences as well as humanities.

In *Kojiruien*, geographic terms are mainly contained in the volume “*Chi-bu*” that is classified into 50 chapters. The first chapter describes the outline of regional geography in Japan, such as their location,

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landscape, history, population and regional classification (chapter 1). The next chapter focuses on the historical geography of the Japanese capital cities (chapter 2). The following chapters consist of local regional geography and systematic (physical/human) geography. The former is regionally classified into 68 ancient countries (chapters 3-34), Ezo (chapter 35), and Ryukyu and Taiwan (chapter 36). The latter is categorized on the basis of 25 landscape elements (chapters 37-49). The last chapter deals with the issue of earthquakes (chapter 50).

This list, however, lacks quantitative geographic information defined by latitude, longitude and altitude (Yamada and Ogata, 2008). Mapping and geographic considerations should be undertaken on the listed sites in the *Chi-bu* chapters within the *Kojiruien*, although such work has not been carried out by any geographers. This paper focuses the chapter 43 and 44 that list Japanese mountains. Their locations and elevations were determined by topographic map interpretations, and their distribution was mapped with Geographic Information System (GIS). In addition, the listed sites were discussed from the viewpoint of culture, history, geology and geography. These results were compared with the case of “Fukada’s 100 Famous Mountains in Japan” (*Nihon Hyaku-meizan*¹⁾: Fukada, 1964), in order to consider the historical significance of Japanese mountains. The list of “Fukada’s 100 Mountains” is considered to be the most popular mountain list of present-day Japan (e.g. Shimizu, 2002a, b; Matsumoto et al., 2006). In fact, many guidebooks for these mountains intended for climbers, trekkers and hikers have been in print from various publishers.

II. Sources and methods

The listed mountains were searched with the engine of the Geographical Survey Institute of Japan (URL: <http://watchizu.gsi.go.jp>). This search engine often presents a number of sites from one inputted place name. Also, the listed mountain names have occasionally disappeared or changed. In these cases, however, their locations were determined with the text described in *Kojiruien*. In the “Fukada’s 100 Mountains”, the list of Shimizu (2002a, b) was used as reference material.

Their detailed geographic information, defined by altitude, latitude and longitude, were measured on topographical maps (1:25,000, presented by the Geographical Survey Institute of Japan). One mountain name generally represents both its peak(s) and the surrounding area. In this study the highest peak was defined as a representative locality in that mountainous area, where the quantitative geographic information was measured with the topographic maps. These measured data were transformed in a GIS application (Arc GIS, ver. 9.2).

Cultural and historical information was investigated by the topographical map interpretation and academic databases. This study added religious (shrines and temples) and literary (Japanese poems: *renga*, *waka* and *haikai*) information on the mountain lists because these factors often influence geographic listing. Shrines and temples were surveyed on the topographic maps. The literary information was searched with the engine of the International Research Center for Japanese Studies (URL: <http://www.nichibun.ac.jp>). This database presents *renga*, *waka* and *haikai* collections (197228, 190423 and 25652 poems, respectively) in the category of “Japanese Studies Research Materials.”

III. Distribution and elevation

All mountains listed in *Kojiruien* are relisted in Table 1. This encyclopedia contains 102 mountains, categorized as “famous-mountains” (*meizan*, 27 sites), “high-mountains” (*kōzan*, 59 sites) and “famous-volcanoes” (*kazan*, 17 sites). There are seven sites that are included in both the “high-mountains”

Table 1 Listed sites in three mountain categories in the encyclopedia “Kojiruien.”

| | |
|---------------------------------------|---|
| Famous-mountains (<i>meizan</i>) | <p><i>Ouchiyama, Arashiyama, Oiyama</i> (Yamashiro country); <i>Kasugayama, Narayama, Amanokaguyama, Miminashiyama, Unebiyama, Hatsuseyama, Mimoroyama, Tonomine, Asukayama, Tatsutayama</i> (Yamato country); <i>Sayononakayama</i> (Totoumi country); <i>Utsunoyama</i> (Suruga country); <i>Osakayama, Kagamiyama, Mikamisan</i> (Omi country); <i>Moyama</i> (Mino country); <i>Kuraiyama</i> (Hida country); <i>Obasuteyama</i> (Shinano country); <i>Kinkasan, Suenomatsuyama</i> (Mutsu country); <i>Imoseyama</i> (Kii country); <i>Amayama</i> (Iyo country); <i>Kagamiyama</i> (Buzen country); <i>Hirefuriyama</i> (Hizen country).</p> |
| High-mountains (<i>kōzan</i>) | <p><i>Atagoyama, Kuramayama</i> (Yamashiro country); <i>Yoshinoyama, Katsuragisan, Ikomayama, Kunimiyama</i> (Yamato country); <i>Fujisan, Ashitakayama</i> (Suruga country); <i>Komagatake, Shichimenzan, Houosan, Kinpusan</i> (Kai country); <i>Hakoneyama, Ashigarayama</i> (Sagami country); <i>Mitakesan</i> (Musashi country); <i>Tsukubasan</i> (Hitachi country); <i>Hieizan, Hirasan, Ibukiyama</i> (Omi country); <i>Enasan</i> (Mino country); <i>Norikuradake</i> (Hida country); <i>Ontake, Yatsugatake, Azumayasan, Tateshinayama, Asamayama, Togakushiyama, Komagatake, Usui-touge, Torii-touge</i> (Shinano country); <i>Myogisan, Akagiyama</i> (Kozuke country); <i>Nikkosan, Nantaizan, Koshinzan</i> (Shimotsuke country); <i>Komagamine, Iwatesan, Iidesan, Asakayama, Iwakisan, Iwahashiyama</i> (Mutsu country); <i>Chokaisan, Hagurosan, Gassan, Yudonosan</i> (Dewa country); <i>Hakusan</i> (Kaga country); <i>Tateyama</i> (Echu country); <i>Naebasan, Hakkaisan, Yahikoyama</i> (Echigo country); <i>Oeyama</i> (Tango country); <i>Daisen</i> (Hoki country); <i>Koyasan</i> (Kii country); <i>Tsurugisan</i> (Awa country); <i>Ishizuchiyama</i> (Iyo country); <i>Hikosan</i> (Buzen country); <i>Sobosan</i> (Bungo country); <i>Asozan</i> (Higo country); <i>Kirishimayama</i> (Hyuga country).</p> |
| Famous-volcanoes (<i>kazan</i>) | <p><i>Fujisan</i> (Suruga country); <i>Asamayama</i> (Shinano country); <i>Azumasan</i> (Kozuke country); <i>Nasudake</i> (Shimotsuke country); <i>Bandaisan, Yakeyama</i> (Mutsu country); <i>Chokaisan</i> (Dewa country); <i>Hakusan</i> (Kaga country); <i>Tateyama</i> (Echu country); <i>Tsurumiyama, Yufuyama</i> (Bungo country); <i>Unzendake, Fugendake</i> (Hizen country); <i>Asozan</i> (Higo country); <i>Kirishimayama</i> (Hyuga country); <i>Kaimondake</i> (Satsuma country); <i>Uchiuradake</i> (Ezo country).</p> |

and the “famous-volcanoes”: Mts. *Fujisan, Asamayama, Chokaisan, Hakusan, Tateyama, Asozan* and *Kirishimayama*. There are three examples of the same mountain with different names: Mts. *Nikkosan* and *Nantaizan*, Mts. *Iwatesan* and *Iwahashiyama*, and Mts. *Unzendake* and *Fugendake*.

Figure 1 shows the distribution of the “Fukada’s 100 Mountains” (A) and the listed sites in three mountain categories in *Kojiruien* (B, C, D). Seven sites, listed in both the “high-mountains” and the “famous-volcanoes”, are plotted in both Figs. 1C and 1D. Japan is divided into 8 administrative districts: Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku and Kyushu. Figure 1A displays the “Fukada’s 100 Mountains” which are concentrated in central Japan, where geological and geomorphic settings, such as uplift and volcanic activities, produce high-elevation mountain areas. Nevertheless, the “Fukada’s 100 Mountains” are located throughout the whole of Japan.

Distribution of the listed sites in *Kojiruien* varies among three categories. The “famous-mountains” (Fig. 1B) are remarkably concentrated in the Kinki district (17 sites, 63%). There are 3 sites in Kyoto and 10 sites in Nara prefectures, where the capitals had been established during the Heian and Heijo eras. The “high-mountains” (Fig. 1C) are broadly distributed from northeastern (Aomori prefecture in the Tohoku district) to southwestern (Kagoshima prefecture in the Kyushu district) Japan. The Chubu district, where elevated surface extensively lies, has 22 sites (37%) in this category. All of the Japanese districts (not including Shikoku) have volcanoes, while the “famous-volcanoes” (Fig. 1D) show sparse and spatially uneven distribution. In this category, 6 sites (35%) are located in the Kyushu district where volcanic activity has frequently occurred in recent years.

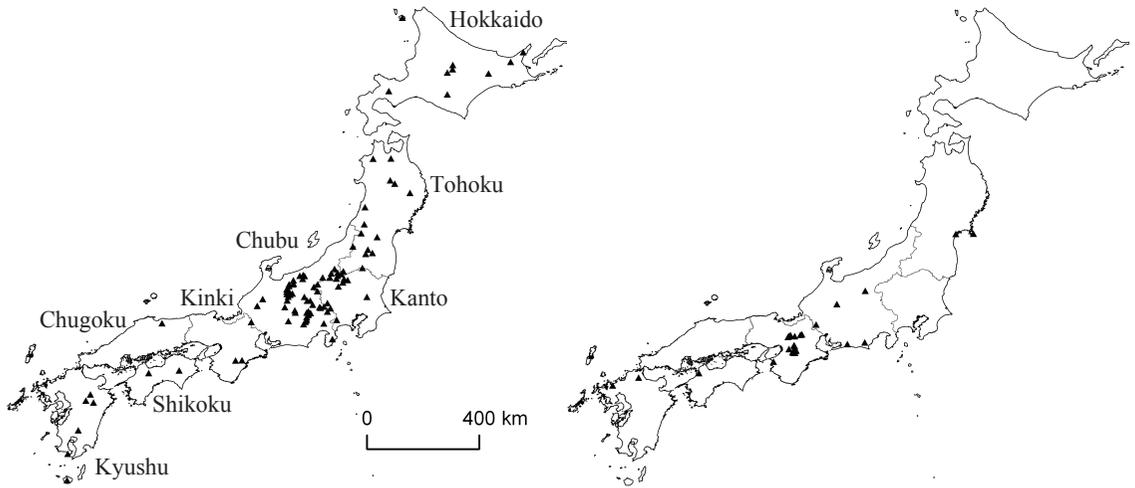
Difference in geographic settings in each category is also shown in their elevation (Fig. 2). The “Fukada’s 100 Mountains” excluding 5 sites are over 1500 m in elevation (Fig. 2A). The “famous-

mountains” are clearly characterized by low elevation (Fig. 2B). They are less than 500 m in elevation, excluding 4 sites. Moreover, this category contains 6 sites only less than 100 m in elevation. In contrast, the “high-mountains” show various elevations (Fig. 2C). However, 14 sites are less than 1000 m in elevation. These sites tend to be concentrated in the Kinki district, with significant historical and cultural backgrounds. The “famous-volcanoes”, showing various elevation (Fig. 2D), are restricted to well-known volcanic sites.

Thus, the sites listed in *Kojiruien* are characterized by spatially uneven distribution and low elevation. Especially, the “famous-mountains” notably focus on low-elevation hills located in the Kinki district. Although the “high-mountains” are situated in various physiographic settings and cultural backgrounds, they are often situated in the Kinki district where eroded hills dominate. The listing in *Kojiruien* seems to have been influenced by cultural aspects.

A: Fukada's 100 Mountains

B: Famous-mountains in *Kojiruien*



C: High-mountains in *Kojiruien*

D: Famous-volcanoes in *Kojiruien*



Figure 1 Distribution of the listed mountains in the encyclopedia “*Kojiruien*” and the “Fukada’s 100 Mountains.”

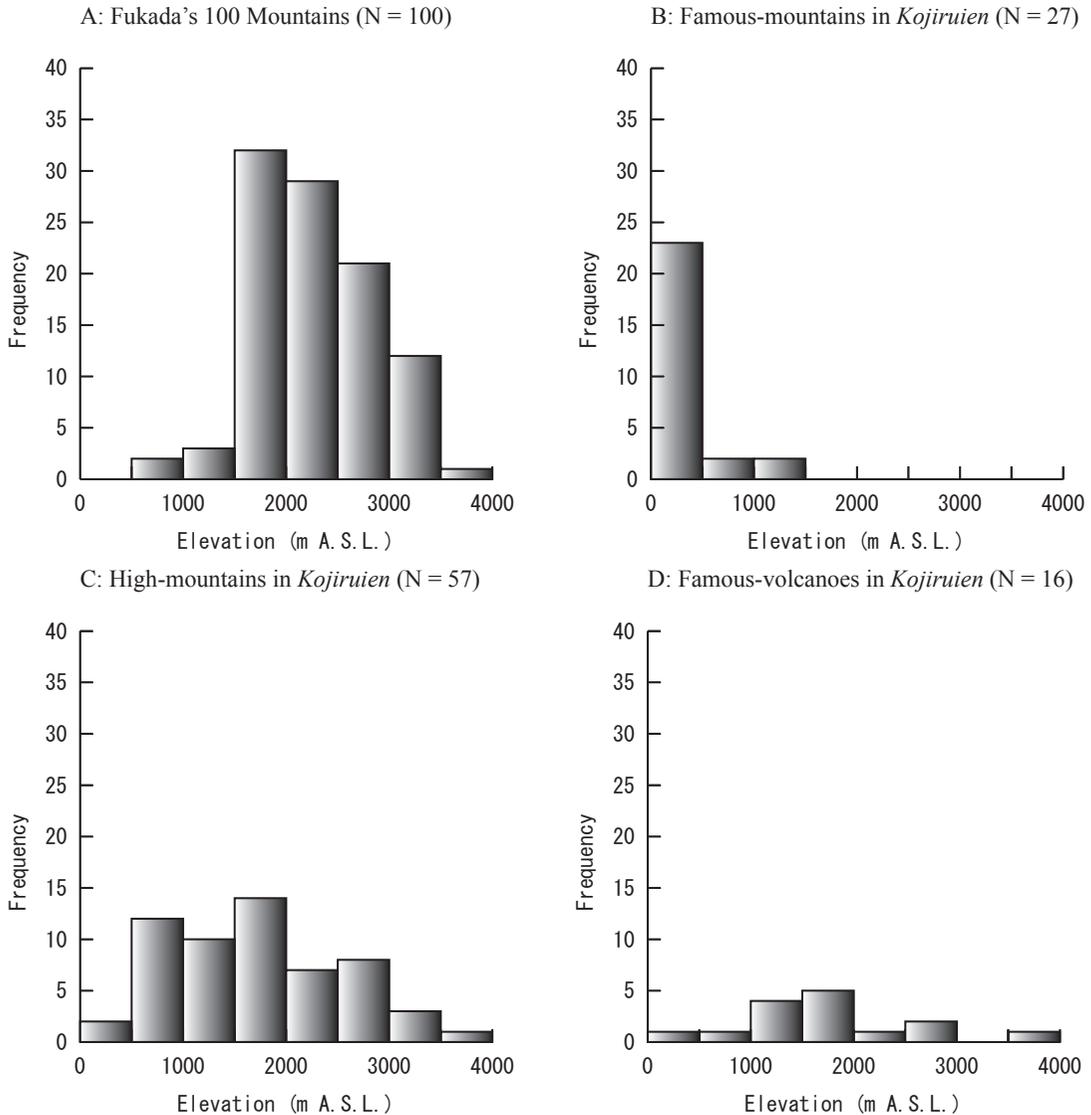


Figure 2 Elevation of the listed mountains in the encyclopedia “*Kojiruien*” and the “Fukada’s 100 Mountains”. Overlapped sites in same categories are integrated.

IV. Geographic and cultural factors

Table 2 shows some characteristic factors of the listed mountains. Geologically, mountains in Japan are classified first into volcanoes and non-volcanoes. Japan is situated in a representative volcanic region (including several volcanic belts). The “Fukada’s 100 Mountains” consist of 45 volcanoes and 55 non-volcanoes, and the “high-mountains” include 23 (39%) volcanoes. However, all of the “famous-mountains” are located in non-volcanic sites.

National Park areas are usually (relatively) well-conserved natural landscapes. In Japan, 28 areas have been designated as National Parks. All of the mountain National Parks (18 parks) include the “Fukada’s 100 Mountains”. The “Fukada’s 100 Mountains” include 73 sites situated in National Park areas. Especially, in the northern and southern Japanese Alps, remarkable peaks are mostly listed in

Table 2 Geographic and cultural factors of listed sites in the encyclopedia “*Kojiruien*” and the “Fukada’s 100 Mountains”.

| | Famous-mountains (<i>Meizan</i>) | <i>Kojiruien</i> High-mountains (<i>Kōzan</i>) | Famous-volcanoes (<i>Kazan</i>) | Fukada’s 100 Mountains (<i>Nihon 100 Meizan</i>) |
|-------------------|---------------------------------------|--|--------------------------------------|---|
| Elevation(m) | | | | |
| mean | 340 | 1744 | 1815 | 2276 |
| range | 5–1529 | 414–3776 | 402–3776 | 877–3776 |
| Volcano | 0(0%) | 23(39%) | 100(100%) | 45(45%) |
| National Park | 0(0%) | 29(49%) | 13(76%) | 73(73%) |
| Shrine and Temple | 18(67%) | 42(71%) | 10(59%) | 33(33%) |
| Japanese Poems* | 18(67%) | 22(37%) | 8(47%) | 8(8%) |

* “Japanese Poems” include *renga*, *waka* and *haikai*.

the “Fukada’s 100 Mountains” (15 and 10 peaks, respectively). However, in these ranges, *Kojiruien* listed only 6 peaks where religious activities have been undertaken since Meiji or an earlier era. In *Kojiruien*, 29 sites (49%) of the “high-mountains” and 13 sites (76%) of the “famous-volcanoes” are in National Park areas, while all of the “famous-mountains” are not in National Park areas.

Historical and cultural factors strongly affect the list of *Kojiruien* (Table 4). Firstly, many of the listed sites include religious institutions. In three categories, 18 sites (67%) of the “famous-mountains”, 42 sites (71%) of the “high-mountains”, and 10 sites (59%) of the “famous-volcanoes” have shrine(s) and/or temple(s). This list is closely related to religious activities in these mountainous areas. Secondly, the listed sites often appear in Japanese poems. Three categories contain 18 sites (67%) of the “famous-mountains”, 22 sites (37%) of the “high-mountains”, and 8 sites (47%) of the “famous-volcanoes”, where *renga*, *waka* and/or *haikai* treat these mountain landscapes. Especially, in the Kinki district, almost all of the listed sites appear in Japanese poems. In addition, *Kojiruien* omitted Hokkaido (not Mt. *Komagatake*), although many mountains lie on this island. This is because the land of this island was mostly used by *Ainu* when this encyclopedia was edited and published. Thus, the listed sites in *Kojiruien* are certainly characterized by cultural and historical aspects.

In contrast, more recent lists mainly represent well-conserved natural landscapes. In the “Fukada’s 100 Mountains”, 73 sites are included in National Park areas where natural landscapes attract many trekkers and climbers (e.g. Yokoyama and Watanabe, 2003). These mountains often lack a religious background and generally have high elevation with relatively primeval landscapes. In fact, many of the “Fukada’s 100 Mountains” are located in central Japan, especially in the northern and southern Japanese Alps. This list targets recreational activities, such as hiking, trekking and climbing, which is clearly represented in the listed sites. In the “Fukada’s 100 Mountains”, religious institutions are established in 33 listed sites, while Japanese poems appear in only 8 sites.

The Mountains listed in both the “Fukada’s 100 Mountains” and *Kojiruien* have been regarded as well-known areas for at least 100 years (from the Meiji era until today). In total, such sites include 33 localities. The “Fukada’s 100 Mountains” include 30 sites (51%) of the “high-mountains” and 10 sites (59%) of the “famous-volcanoes”, but completely exclude the “famous-mountains”. In the sites that appear in both lists, 19 mountains have shrine(s). This indicates a significant aspect of religious-related mountains in Japan.

V. Concluding remarks

The listed sites in *Kojiruien*, showing low altitude and spatially uneven distribution, frequently appear in Japanese poems (*renga*, *waka* and *haikai*), and often have shrines and temples at their peaks and/or surrounding areas. The “famous-mountains” are notably concentrated in the Kinki district, where the capital cities had been long established. The “high-mountains” often include low-altitude peaks. The “famous-volcanoes” also show geographically uneven distribution. Mountains listed in both *Kojiruien* and the “Fukada’s 100 Mountains” are mostly characterized by shrines and/or temples located at their peaks, which suggests a historical significance of religious activity in Japanese mountainous areas. The “Fukada’s 100 Mountains” tend to list high-altitude peaks, especially those in the Japanese Alps being roughly 3000 m in elevation. These mountains often lack both shrines and temples, but the pristine alpine landscapes attract many recreational trekkers, hikers and climbers.

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Note

1) Hereafter, this list is abbreviated as “Fukada’s 100 Mountains”.

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