Paper ID	134
Author(s)	Haruna Takeda
Title	The importance of small-scale shipping "Tokaisen" in Nakajima Islands, Ehime prefecture

Abstract

In Nakajima Islands, Ehime Prefecture, a form of small-scale shipping known as "Tokaisen" is in operation. Tokaisen is a small-scale privately owned shipping service that facilitates the transportation of daily necessities and agricultural products between island areas and mainland cities. During the 1950s and 1960s, Tokaisen was particularly active, facilitating connections between the islands of the Seto Inland Sea and mainland cities. However, the advent of car ferries in the late 1960s and the construction of bridges over the Seto Inland Sea since the late 1990s has resulted in a decline in the number of Tokaisen, as the use of trucks for mass transportation has become a viable alternative. In Nakajima Islands, the number of Tokaisen has decreased by 25% over the past three decades, with only three ferries currently in operation. Nevertheless, through interviews with Tokaisen operators and its users, it became evident that Tokaisen continues to play a pivotal role in supporting the livelihood of the Nakajima Islands. Furthermore, as the necessity for mass transportation has diminished due to the shrinking population, the viability of small-scale Tokaisen is being reassessed. The island shops regard Tokaisen as a cost-effective means of purchasing essential commodities, which is particularly important given the decline in the population of rural Japan. This case study demonstrates the importance of reassessing the sustainability of small-scale services in the context of population decline.

Keywords	Humans, Island

Paper ID	176
Author(s)	Masataka Yatsuzuka, Masahide Ishizuka, Toru Terao and Satoshi Murayama
Title	An environmental history of water and people in Teshima: hydrological and living knowledge perspectives

Abstract

Teshima Island in Kagawa Prefecture is considered to have abundant underground water resources, including spring water “Karato no Shimizu,” and springs and dug wells have been used on daily lives, even among drought-prone islands in the Seto Inland Sea. However, there are few descriptions of dug wells in local collection, and there are no existing previous studies that prove the abundance of underground water resources.

Therefore, this study aims to clarify the interaction between people's water use and the water environment, “environmental history of water and people” in Teshima Island by combining humanities and hydrological methods. Specifically, we focus on dug wells, and clarify their distribution, construction methods, and changes in their use with the spread of water supply system through field surveys. In addition, we collected life knowledge related to underground water environment obtained from the daily use as habitants. Furthermore, we conducted fixed-point observations of underground water levels and temperatures in dug wells using hydrological techniques to clarify the characteristics of fluctuations.

The field survey revealed that there are approximately 100 dug wells on the island, and that the construction methods of the dug wells vary according to the geology and the stone materials produced. Fixed-point observations of the dug wells revealed that the underground water level fluctuation characteristics differed between the mountainous and coastal areas, with the mountainous areas responding more acutely to rainfall and experiencing greater fluctuations in the underground water level.

Keywords	Water, dug well, drought, topography of landslide, Life Knowledge

Paper ID	246
Author(s)	Yui Oyake, Hideaki Goto, Masahide Ishizuka, Toru Terao, Tsuyoshi Kobayashi and Toru Ishii
Title	Early symptoms of the damage from Japanese Oak Wilt in the Castanopsis sieboldii forest on Teshima Island, Kagawa, Japan

Abstract

Japanese Oak Wilt (JOW) is a disease of Fagaceae (oak tree species) caused by fungi (e.g. Raffaelea quercivora) transmitted by the beetle species Platypus quercivorus. In Kagawa Prefecture, JOW damage was first confirmed in 2019, and damage has also been reported on Teshima Island since 2021. The aim of present study is to investigate the vegetation and JOW damage in Toyomine Gongen-sha Temple Forest in Teshima Island and to propose conservation measures. In April 2024, we established 20 survey plots (total area: 2000 m2) in Toyomine Gongen-sha Temple Forest and identified the species of woody plants, measured the diameter at breast height (DBH), and assessed the reproductive stage of P. quercivorus and tree decline. In this survey, 11 woody species were found in the study plots, with an average DBH of 7.67 cm and a population density of 1,635 individuals/ha. Castanopsis sieboldii was the most dominant species, but there were almost no young trees or seedlings of C. sieboldii in the understory, and indicating that species other than C. sieboldii might become dominant in the future. The DBH of the C. sieboldii trees which have been bored by P. quercivorus tended to be greater, but there was no significant difference in the degree of canopy tree decline, suggesting that they have not yet reached to fatal symptoms. In summary Thus, the relationship between JOW infections and declining symptoms should be carefully monitored for the conservation of greater canopy trees.

Keywords	Plants, Japanese Oak Wilt, Castanopsis sieboldii, Temple forest, Forest decline

Paper ID	094
Author(s)	Nobutake Kawashima, Miyako Kamatoko and Iori Kosaka
Title	Teshima island's "Hama" and "Oka" townscapes from the perspective of landscape components

Abstract

Teshima island consists of three villages, Ieura, Karato, and Kou, of which Ieura and Karato are called "Hama" on the ocean side and "Oka" on the mountain side. I considered Teshima's "Hama" and "Oka" to be suitable locations for examining the spatial differences between "Hama" and "Oka" because of their different townscapes, despite their proximity. The purpose of this study was to analyze the characteristics of the current "Hama" and "Oka" townscapes of Teshima based on the landscape components. The survey items were buildings, gates, streets, and walls. The target buildings were determined to be those dating before 1974, since the earliest aerial photograph in which the buildings could be identified in the aerial photograph was taken in 1974. All gates, streets, and walls were surveyed. The results showed that "Hama" was characteristic of linear villages and "Oka" was characteristic of agglomerated villages. The characteristic Building type was the Gated building (Nagayamon), which was used for various purposes such as a barn, warehouse, or retirement room. Most of the walls were stone walls, made of local andesite called "Goura-ishi", as well as "Teshima-ishi" and granite. In Karato-Oka, the "Yabane-zumi" in which the "Goura-ishi" are piled up in a dogleg shapes, was observed. In terms of the house layout, many of the main houses in each of the four locations are located on the south side of the site. Despite of the same "Oka", Ieura-Oka was most frequently surrounded by walls and gates, while Karato-Oka had multiple houses densely built up.

Keywords	Land,Humans