Research Activity Report
Supported by "Leading Graduate Program in Primatology and Wildlife Science"
(Please be sure to submit this report after the trip that supported by PWS.)

	2019. 06, 07
Affiliation/Position	Sun Yat-sen University/Ph. D. Candidate
Name	Wang Qiaoyun

1. Country/location of visit

Japan, Yakushima

2. Research project

Study on Complex webs of interspecific interactions in ecosystems (Experiments with DNA barcoding)

3. Date (departing from/returning to Japan)

2019. 05. 25 – 2019. 05. 31 (7 days)

4. Main host researcher and affiliation

Dr. Hirokazu TOJU, Professor at Center for Ecological Research, Kyoto University.

5. Progress and results of your research/activity (You can attach extra pages if needed)

Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description.

During this visit, I conducted research on what bacteria and fungi plants in Yakushima interact with, and to find relationships between species.
We collected plant samples at 2 different places in first 2 days. We totally collected 6 species. Everyone needs to collect different species for 20 individuals with the whole root at 2 sampling sites, each sites need to be collected 10 individual samples. Our sampling sites is Kurio and Nagata. For the first 2 days' morning, we collected plant samples, and put them in the plastic bags and stored them in ice box. In the afternoon, we dealt with root samples by cultivation in agarose plates. We took 4 pieces of root from each individual left for 2 days to allow organisms to grow. Firstly, we washed the root by purified water for 3 times, and then using detergent to remove the DNA from the surface of root. And finally put it into the agarose plates. Every 4 pieces of root from same plant individuals were put in a one plate. And the rest of each root were put in the plastic bags and stored them. After 2 days' cultivation, we identified fungi and bacteria species by morphological knowledge based on the difference of sizes, shape, color, and so on. Finally we found 8 types of bacteria, 20 types of fungi and 2 unknown species. And then using Bipartite package in R to calculate specificity.
we also collected 9 soil samples at Shiratani Unsuikyo on the third day. Our quadrat size is 9m*9m with 3 lines, every lines have 3 sample sizes, every sample size is 3m apart, each size of soil sample is 10cm*10cm, depth ranges from 5cm to 10cm, we put soil samples into the plastic bags and prepared for the Next-generation sequencing. And finished sampling, we did the data analysis whole day prepared for the presentation on Yakushima.
I used this opportunity to achieve how to collect relevant research samples professionally, and So we knew how to collect soil and plant samples in Yakushima, how to deal with those samples. And how to do the data analysis.
Through this experience, I have developed a clear vision on how to cope with data analysis of ecological network, which will be of great help in the future conservation of otters, because I will study otters' diet based on DNA barcoding to see species interactions through food webs .

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Plant Sample Collection

Species Identification of Fungi and Bacteria

6. Others

I was impressed when we were waiting for sea turtle in the night. Everyone just stand in the dark without using flashlight. Although I didn't see the sea turtle that night, I felt respect for animals from Japanese people.