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.)

	2015.12.20
Affiliation/Position	Primate Research Institute/D1
Name	Liesbeth FRIAS

1. Country/location of visit

Japan/ Koshima, Miyazaki

2. Research project

Testing fecal fixatives for parasitological and molecular diagnosis

3. Date (departing from/returning to Japan)

2015.11.10 – 2015.11.18 (9 days)

4. Main host researcher and affiliation

Koshima Field Station (Wildlife Research Center, 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.

The efficient collection of samples is an essential component of fieldwork. Due to their abundance and non-invasive nature, fecal samples provide a valuable resource for studies of animals in the wild. Fecal DNA has been used for diverse purposes, including population genetics, animal movements, species/individual detection, sex identification, and molecular parasitology, to name a few. But despite the potential of noninvasive sampling, information about protocols for collection and storage of feces for parasite determination in primates is scattered or incomplete. During my PhD research I will be studying parasite diversity, exploring parasite transmission through epidemiological networks in populations of primates living under different levels of habitat fragmentation in Sabah, so I depend on the efficient collection of fecal samples from wild primate populations.

In order to implement a reliable protocol for recovering parasite DNA and different parasite stages from feces, different methods need to be tested systematically. This will be attained by testing which storage method(s) (i) better preserves DNA, by assessing the concentration of amplifiable parasite DNA recovered, (ii) retrieves a higher number and quality of parasite eggs/cysts/larvae in fecal samples, and (iii) better preserves parasite morphology after concentration.

For this purpose I went to Koshima islet in Miyazaki. Macaques there are free ranging, semi-provisioned and accustomed to human presence, making sample collection a fast and straightforward process (which was particularly fortunate this time, since my visit coincided with an off-season typhoon and a tsunami alert, so I only had access to the islet twice). I collected fresh fecal samples from macaques immediately after defecation and preservation was carried in the lab under different methods. Genomic DNA will be extracted and amplification success of parasite DNA will be assessed by quantitative PCR. Parasite retrieval will be assessed using standard fecal flotation and sedimentation protocols.

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Although several studies have evaluated different methods for DNA preservation in fecal samples, none of them has focused on parasite DNA. In that regard, I think this project has the potential to improve the design of noninvasive projects by determining the most adequate storage method(s) for parasite retrieval and parasite genetic analyses.

Koshima macaques on the days we got to visit the islet. Despite of the short time, I got all the samples I needed and a bit more!

Acknowledgments

I would like to express my gratitude to PWS and Prof. Matsuzawa for supporting this field trip. Special thanks to Andrew MacIntosh who traveled along and had to bear with me during the rainy days (literally). I would also like to thank Takafumi Suzumura and Akiko Takahashi for their warm reception and support while at the station.