

(For JSPS Fellow)

Form B-5

Date (日付) 31/10/2017

\_\_\_\_\_  
(Date/Month/Year: 日/月/年)

**Activity Report -Science Dialogue Program-**  
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Hannah Windley \_\_\_\_\_ (ID No. 17715 \_\_\_\_\_)
- Participating school (学校名): Kamaishi High School \_\_\_\_\_
- Date (実施日時): 30/10/2017 \_\_\_\_\_ (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): Wild animal nutrition and ecology \_\_\_\_\_
- Name and title of your company (同行者 職・氏名)  
Dr Takuya Shimada \_\_\_\_\_
- Lecture format (講演形式):
  - ◆Lecture time (講演時間) 50 min (分), Q&A time (質疑応答時間) 40 min (分)
  - ◆Lecture style (ex.: used projector, conducted experiments)  
(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))  
Used projector, Live mice demonstration, short video
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Lecture outline

- About me and my home country
- Australian mammal diversity
- Topic Introduction
  - Wild animal nutrition and ecology
- My past research
  - Possums in New Zealand
- My current research
  - Temperature dependent toxicity
- Why study English?
  - English is the language of science
  - Paper: 科学の発展を妨げ続ける言語による障壁

Abstract: All herbivores rely on plants to provide the nutrition and energy they need for survival and reproduction. However, many plants also contain chemicals that can be toxic when consumed at high doses. This means that herbivores must choose wisely when selecting their

foods. Many animals also have physiological mechanisms for detoxifying these plant chemicals. The diet of the Japanese wood mouse (*Apodemus speciosus*), for much of the year, is predominantly acorns. Acorns contain common plant polyphenolic compounds called tannins, which can be toxic if eaten in high doses. We know that when the tannin concentration of an acorn crop fluctuates, so does the abundance of mice. Furthermore, there is growing evidence that some plant chemicals, such as tannins, may become more toxic in warmer ambient temperatures, because of increased thermoregulatory demands. This is known as “temperature-dependent toxicity”. Small changes in the nutritional quality of foods can have a significant impact on populations of wild animals. It is important to investigate the possible impact of these changes in the context of a changing climate.

I have been investigating how Japanese wood mice respond to changes in ambient temperature. Specifically, I have been looking at liver function and the tolerance of mice to acorn tannins. This is the first time that the impact of environmental temperatures on the toxicity of tannins in wild mammals has been investigated.

In my lecture, I covered how I came to be studying this interesting topic and the broad field of nutritional ecology. I introduced Australian mammal diversity and spoke about unique Australian mammals. I also presented some of my latest results from experiments with Japanese wood mice.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

I enjoyed this experience and I hope the students benefited from my visit. There are a few ways I could have improved my lecture. There was very little real-time feedback so it was difficult to determine how much of what I was saying could be understood by the students. I would advise to include Japanese translations for all important words so you can be sure they are following your lecture. The students seemed to enjoy the small practical side of my lecture so I would recommend including a hands-on part if you can. Two hours is a long time to concentrate on someone speak in another language, so I definitely recommend including small breaks or time for completing individual/group tasks such as a worksheet or experiment.

- Other noteworthy information (その他特筆すべき事項):

It was very helpful to have Dr Shimada and the class teacher (Yumi Ito) attend the lecture. They were able to provide translations when needed. They also helped to encouraged student participation by asking their own questions.

- Impressions and opinions from a company (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。)

フェローも書かれていましたが、英語での会話になれていない生徒にいきなり 1 時間半の講義は厳しいのではないかと思いました。彼らの耳からは英語がこぼれ落ちそうです。経験してみないと分かりませんので、そのあたりの状況を事前にもう少し具体的にフェローに教えて頂けた方が良かったかと思えます。いずれにせよ、とても良い経験になったようです。どうもありがとうございました。