

(For JSPS Fellow)

Form B-5

Date (日付)

23/01/2014 (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): Felix G. Marx (ID No. P **P13503**)

- Participating school (学校名): Junior High and Senior High School at Komaba, University of Tsukuba (Tokyo)

- Date (実施日時): 18/01/2014 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) The evolution of baleen whales  
(in Japanese) ?

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The following is the lecture outline I used for my actual talk at the school:

"My name is Felix Marx. I am a palaeontologist, and currently researching the evolutionary history of whales and dolphins at the National Museum of Nature and Science in Tsukuba. I am an Austrian national (my family is from Vienna), but grew up in Germany. After finishing school, I spend four years studying palaeontology at the University of Bristol in the United Kingdom, before moving to New Zealand for a further four years to complete a PhD and do some research at the University of Otago. My interest in the history of life is almost as old as myself, and was fostered by fossil hunting trips I went on with my father when I was a little boy.

I believe that, in order to understand the present, it is important to study the past. Life on Earth has been evolving for over 3.5 billion years, often into forms we would think of as mere fantasy. Alien, Godzilla, King Kong and hobbits may be fiction – but giant sea scorpions, colossal dinosaurs, three metre apes, and one metre humans all actually existed. Learning about extinct plants and animals has fascinated people for centuries, and has been put to practical use by helping scientists to estimate the age of rocks, identify deposits of fossil fuel, understand climate change and its effects, investigate the possibility of life on other planets, and support and guide conservation efforts. However, the study of evolution has also had a much more fundamental impact by challenging us to think about our own origins, and our place within the natural world. In doing so, fossils may hold an answer to one of humanities oldest questions: where do we come from? Understanding our own ancestry has brought about enormous changes in the way we think and behave – changes which, I would argue, shape societies worldwide to this day.

My own work focuses mostly on the origins of marine mammals, and in particular that of whales

and dolphins (together also known as ‘cetaceans’). Cetaceans fascinate me, because their life in the ocean means that they had to overcome enormous challenges during the course of their evolution. Like all mammals, cetaceans are descended from terrestrial ancestors (roughly 55 million years ago), and are warm-blooded, breathe air, and suckle their offspring. Maintaining even one of these conditions in water is tough, yet cetaceans succeeded at adapting all of them to life in the ocean. In doing so, they also evolved some rather unique new traits, such as the ability to “see” using sounds (echolocation), communicate over vast distances, and filter enormous quantities of food from the surrounding water. In addition, whales and dolphins form an important part of the ocean ecosystem as predators and distributors of nutrients, and provide a chance to study the nature and change of life in the ocean over more than 50 million years, up to the present day.”

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 60 min (分), Q&A time (質疑応答時間) 20-30 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))

Powerpoint, some explanations on whiteboard during Q & A session

◆Interpretation(ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

no interpreter was present, lecture was entirely in English

◆Name and title of accompanied person (同行者 職・氏名)

N/A

◆Other note worthy information (その他特筆すべき事項):

none

- Impressions and opinions from accompanied person (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。): N/A