

(For JSPS Fellow)

Form B-5

Date (日付) 31st January 2015

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. P13503)
- Participating school (学校名): School: Senior High School at Komaba, University of Tsukuba (Setagaya, Tokyo)
- Date (実施日時): 24th January 2015
- Lecture title (講演題目): The evolutionary history of whales and dolphins
(in Japanese) N/A
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The following is the lecture outline that was distributed to the students prior to my lecture:

"My name is Felix Marx. I am a palaeontologist, and currently a postdoctoral fellow 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 studied palaeontology at the University of Bristol (United Kingdom), before moving to New Zealand to complete a PhD 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 tiny humans all actually existed. The study of ancient life has fascinated people for centuries, and has been put to practical use: fossils help scientists to estimate the age of rocks, identify oil and gas deposits, understand climate change, investigate life on other planets, and guide conservation efforts. Even more importantly, fossils challenge us to reconsider our place within the natural world, and hold the answer to one of humanities oldest questions: where do we come from? Understanding our own origins 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 – especially that of whales and dolphins (together also known as 'cetaceans'). Modern cetaceans play a fundamental role in the ocean ecosystem as predators and nutrient distributors, and their ancestors are likely to have

done so in the past. Cetaceans fascinate me because of the enormous challenges they had to overcome in returning to a life in the ocean. Modern whales and dolphins are descended from four-legged, terrestrial ancestors that lived in what we now know as India and Pakistan around 55 million years ago. Like all mammals, they are warm-blooded, breathe air, and suckle their young. Maintaining even one of these conditions in water is tough, yet cetaceans have managed to adapt. In doing so, they also evolved some completely new and unique traits, such as the ability to “see” with sound (echolocation), long-distance communication, and filter feeding.”

- 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 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 presentation

◆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))

N/A

◆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):

N/A

- 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