（For JSPS Fellow）

Form B-5

Date（日付）
13 September 2012 （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）: Rustam T. OROZBAEV （ID No. P 12026）

- Participating school（学校名）: Gifu Prefectural Ena High School

- Date （実施日時）: 12 September 2012 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: （in English） Metamorphism of high- to ultrahigh-pressure metamorphic rocks, Kyrgyz Tien-Shan Mountains

（in Japanese） 高圧／超高圧変成作用について―キルギス天山山脈の例

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

My lecture is consisted of two parts. In first part, I have introduced my home country, Kyrgyzstan. It included a brief description of country location, recent history and general information. Then I talk about Isyk-Kol Lake, which is the largest lake in our country. Next, I introduced about Kyrgyz traditional house "Boz-ui". I explained how we assembly it and use it. Other cultural aspects (epic poem Manas, food, musical instruments and handicrafts) of Kyrgyz people are also mentioned. As an example, I demonstrated a video (4 min length) on how we make Kyrgyz style 'felt carpet' called 'Ala-kiyiz'. With this I ended up the first part of my talk. Before beginning the second part, I introduced my education and research background starting from the Kyrgyz Mining Institute in Kyrgyz to Shimane and Kyoto Universities in Japan, and then I explained why I decided to become a scientist. In the second part, I talked about metamorphism and metamorphic rocks. First, I started the introduction with explanation of Earth's history, structure and evolution in terms of plate tectonics. I showed that the movements of crustal plates (continental and oceanic) are accompanied by metamorphism. Then, I explained about 'what is metamorphism' and metamorphic rocks. Types of metamorphism, agents of metamorphism (temperature (T), pressure (P) and fluids), a metamorphic facies and P-T path diagrams are discussed as well. On the example of Aktyuz and Makbal complexes and Kokchetav Massif, I explained about high-pressure (HP) and ultrahigh-pressure (UHP) metamorphism based on the findings of index minerals such as coesite and diamond. Further, I discussed in detail about methodology of investigation, i.e. how we do research. This methodology started from explaining how we do collect samples and how we do field work, through laboratory work (making thin-sections from rocks, description of thin-sections by polarizing microscope, analyses of chemical composition of minerals in thin-sections by Electron Probe Microanalyzer) to interpretation and discussion on the obtained data and delivering P-T histories of rocks. Finally, I showed how we could reconstruct tectonic model of the area based on the obtained P-T histories of each rock types. I concluded that by studying metamorphic rocks cropped out in a small area we can obtain

information about geological processes in the past which will give the contribution for better understanding the Earth's evolution with time.

- Language used（使用言語）: English/Japanese

- Lecture format（講演形式）:

◆Lecture time（講演時間） 70 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））

Projector was used with Power Point presentation slides. For experiments, metamorphic rocks collected from Kyrgyzstan and Japan were brought to Ena school for demonstration to the students. Also, thin-sections made from those rocks are demonstrated with two portable microscopes.

◆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））

I was accompanied by Doctor course student from the same laboratory of our university, and he helped me with Japanese explanation of some parts of my talk during the lecture.

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

Mr. Kenta YOSHIDA (PhD candidate, D1)

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

During my visit to Ena High School I had a chance to observe English and Geography classes during the lessons with students. It was quite interesting experience for me.

Also, I would like to say many thanks to Ms. Hanae Kuwabara (English teacher) for her assistance and organization of lecture; to Mr. M. Naruse and Ms. Michimura for their warm greetings and hospitality.

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。）

今回，同行者として事業に参加しまして，高校生に対して研究の内容を伝えることの難しさを感じました．講義を行った恵那高校では地学は採択されておらず，殆どの生徒は地学に関する話は中学校理科第二分野以来，ということで，一歩間違うと全く伝わらないような事にもなりかねなかったわけですが，Orozbaev 博士はフィールドワーク中の面白い写真なども交えて，生徒を飽きさせないよう講演を構成していました．興味津々で目を輝かせて質問してくれる生徒もおり，私たちの研究について伝えることはある程度成功したのかなと思っております．

先方の先生にお話しを伺ったところ，やはり分野や内容によって生徒がついて行けずに寝てしまうことや，逆に興味津々で聴いてくれることがあるらしく，この事業の難しさも感じました．