

TECHNICAL REPORT OF COURSE ZOOLOGY AND MUSEUM MANAGEMENT

PAUL IMBUN YAMBUN*

INTRODUCTION

I come from Malaysia Sabah North of Borneo, Working at Sabah Parks in Kinabalu Park, Research and Education section, (Zoology Department). I came to Japan to study zoology and Museum Management in Kagoshima Prefectural Museum for 7 months with a language course, under Overseas Technical Trainee Aid Programme recommendation of JOCV and JICA. I was full sponsored by Kagoshima Prefectural Government. This was given to make possible the various tasks that the course entailed and is a good example of the relationship between a country in the middle of its development and a developed country like Japan.

Given that the training's duration was so small not every part of the course could be understood easily. Furthermore, the main problem is that the course lessons were all in Japanese. This is obviously difficult for the trainee, who does not have any basic knowledge of the Japanese language, and I found the kanji characters particularly hard to comprehend. When St. Francis Xavier landed in Kagoshima, he called Japanese the Devil's language because it was so hard to learn and I understand what he meant. I could not read or refer to the books in Japanese kanji characters which were available in the museum. Fortunately I already have a basic understanding of ecological and zoological subjects and was able to study most of the techniques in the animal sets, public information and the formats of a few exhibitions before coming to Japan. Because of these things I could study and understand the lessons to some degree and, besides that, I could also use references from English books that I ordered from an agency and from books given to me by friends from Malaysia and Japan. However, given these limitations, I had to pay the price of not being able to understand everything. Yet from my study of the theory and the basic principles of the course, I accrued a great deal of knowledge and have learnt how to implement it successfully.

Although in the course I needed to adapt what I learnt to my specific field, the whole time when I was in Japan I received helpful guidance from my general supervisor and the museum staff who helped me succeed in this programme

The head title of the course was "ZOOLOGY AND MUSEUM MANAGEMENT". From this course, I received knowledge which will prove to be useful to me once I return to Malaysia. Above all I have enjoyed working beside the other trainees here in Kagoshima's Prefectural Museum. I enjoyed the company of the museum staff, who were always helpful and friendly.

* 〒892 鹿児島市城山町1-1 鹿児島県立博物館 (海外研修生)

ACKNOWLEDGMENTS

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I am indeed grateful to Mr.Takao, the mounting volunteer teacher. I would like to give special thanks to the the Kagoshima Prefectural Government for sponsoring this course, and to the International Affairs Division, as well as the International Exchange Plaza, for organizing this programme. Finally, I am much obliged to all others who assisted me during my stay.

OBSERVATIONS OF KINABALU PARK MUSEUM AND KAGOSHIMA MUSEUM.

The activities of Sabah Parks, besides the preservation of the natural heritage for present and future generations (tropical lowland forest, wildlife, and marine environments), center around recreation for Sabah's people. This is a valuable educational resource. Daily programmes where visitors are treated to slide shows, guide walks and an exhibits, are provided for school children. Additionally, a mobile unit displays videos to local villages. The park staff oversees the collection of scientific research, and ideas for maintaining a herbarium and a Mountain Garden for botanical studies. Kinabalu Park is also the headquarters for all scientific research activities from the seven Sabah Parks areas. It was established by the people of Sabah to preserve their natural heritage for the enjoyment of present and future generations. The preservation of the Park's forests and wildlife also results in the valuable protection of western Sabah's watershed. Eight major rivers originate from Mountain Kinabalu and provide many of Sabah's towns with pure water for drinking, fishing and irrigation. Kinabalu Park is visited yearly by thousands of tourists who come from around the world to enjoy its climatic, scenic, floral and formal splendors. It also contains the granitic massif of Mount Kinabalu, which has a unique beauty and charm. Earth has not anything to show more fair.

We know many visitors come to the park just to relax and watch the long day wane, but their need for more information about the parks and about science in general suggests the relevance of an exhibition. Actually in the Kinabalu Park's ecology section there is a large collection of plant, animal and insect samples, but we do not have an exhibition like that in Kagoshima's museum, which is a replete with every aspect of technological modernization in use and as such, it was perfect for a trainee like myself. Actually, Kagoshima Museum is totally different from Kinabalu Park Museum, but given that all museums share similar aims in preserving fragments of time from the indifference of posterity, relevant associations could be made.

In 1993, we utilized the new building for research activities and for the museum, but we had many problems in making and setting up a good exhibition, espically in mounting animals, such as birds and other species of mammals. Mr.Kikuta Toru, a member of the JOCV, knew of this problem and recommended that I join the Overseas Technical Trainee Aid Programme for "Zoology and Museum Management "

FIELD TRAINING

The training started on July 20, 1994, two months after the language course at Kanoya was completed, and took place at the Asia Pacific Inter cultural Countryside Center. It ended on February 3, 1995. I was the first trainee from overseas to study at this museum. Originally the museum staff members had intentions of participating in my fieldwork studies, but as they are well occupied from July through the end of September, they were unable to do so.

During the course of a seven-month period, a plethora of subjects to study are offered by the Zoology and Museum Management. They are as follows:

1. Presentation of Material for the Public Sector
2. Organizing the Exhibition
3. Excursions to the Exhibition
4. Training in Natural Research and Collecting Samples of Plants and Animals
5. The Classification and Identification of Organisms
6. Compiling the Specimens of Insects and Plants
7. Animal Mounting
8. Museum Management
9. Planetarium

1. Presentation of Material for the Public Sector

Nowadays, the function of the museum has broadened in many respects, such as educational programs more readily accessible to the public. Not only have exhibitions become an integral part to the museum, but also it is now feasible for students and others interested to study specimens for themselves. For example, many students brought in their own specimens to the museum to be identified. Every Sunday, the museum staff accumulates various information to present to the public. These new programmes enable the public to play an active role in the analysis and discovery of science. Furthermore, fieldwork researched by the public is also displayed in exhibitions. Experts, such as professors, are encouraged to criticize the presented materials and make helpful suggestions to the progress of the program.



Plate: The photo shows some activities in the field for public information programe.

The museum will now provide all necessary equipment for the collection and analysis of specimens. The maintenance of these projects is free. University students are also involved in

ecology research and evaluation. During semester breaks, groups of students are usually included in museum activities. They partake in the fundamentals of fieldwork. They instruct how to survey plant evolution and demonstrate how to make proper quadrats, normally measuring 15 square meters. Then they assist in the identification of the plants and animals. A sample habitat would be recorded as follows:

- Canopy Shrub
- Dead leaf Herb
- Slope (all in present % estimated)
- Trees' DBH and height estimated

All matters of importance must be recorded.

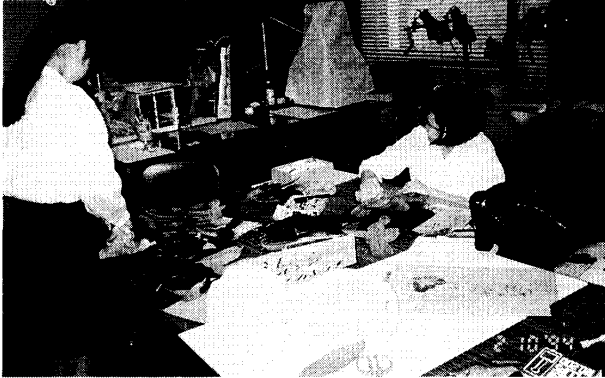


Plate: The photo shows some group student training in the museum.

2. Organizing the exhibition

The exhibition of course can be altered whenever it is deemed necessary to do so by the museum. The value of having a permanent and also a temporary, Protean exhibition displaying the latest discoveries or new breakthroughs in research methods is obvious. The organization conforms roughly to the following taking with the exhibition in the bird Gallery. The species are divided into groups according to habitat, consider for example our 'Victorian Display' section clearly defined for refreshing viewing and optimism educational value. It is in this functional and well defined division of sections that the fundamental principle of exhibition displaying lies.

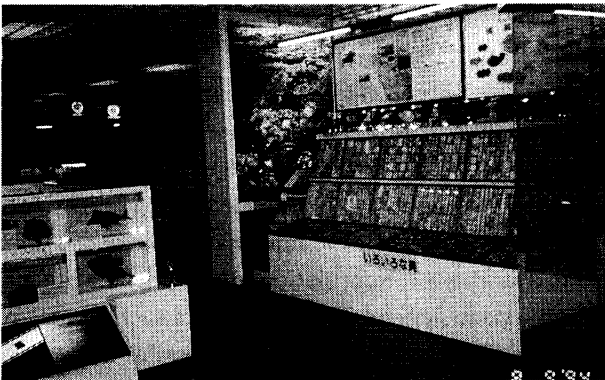


Plate: The photo shows examples of shellfishes.

Let us take another example, perhaps the most complex problem facing the organizer of an exhibition, the notorious mammal specimens clearly created by God for the sole purpose of giving museum workers something to do. The first step of classification must be according to size but even when everything is arranged in its correct order the aim of revealing to the viewers a realistic and almost life-like presentation of the animal must never be forgotten. The viewer must be able to emphasize with the exhibit, to feel its limbs move, to smell its breath.

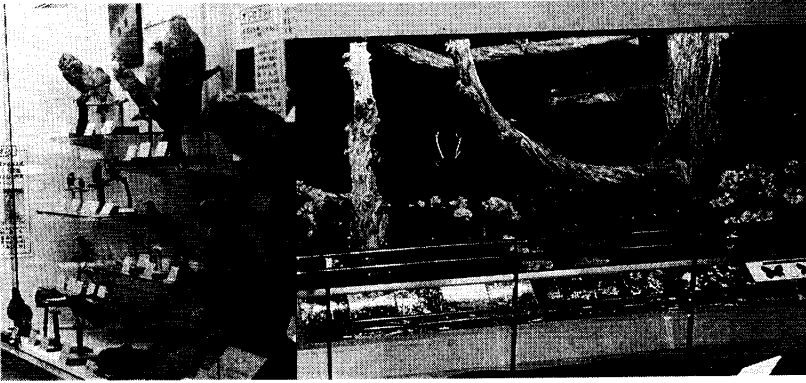


Plate: The photo shows some views of birds, mammal dramatic exhibition.

As is widely known one of the most difficult animals to present are those living in the arctic tundra who must be kept warm the whole time in order to preserve their characteristics. We must simulate the exact conditions of the animals habitat and avoid the damaging of the natural form.

We wish therefore to introduce the concept of an Ecosystem to the public. They must be taught to look at living things in the context of their natural ecological surroundings. Our exhibition aspires to revealing how complex living networks are built up in this way and this can of course include exhibitions of humans displaying such things as Children's games, kitchen equipment, medicines etc. We believe that people who become familiar with nature and live within it will be wise.

3. Excursions to the Exhibition

For this section of the course I visited the National Science Museum in Tokyo, Tochigi Prefectural museum, Sunshine international Aquarium Tama Zoo, Tokyo Uchida Kagakusya in Saitama Ken (Specifically to study the mounting of the animals.) Toyo Kindai Bijutsu Kenkyosho in Chiba Ken (Specifically to study the mounting of fish) and Ibaraki national museum for its innovative exhibition show. This was, I believed, the critical part of my course and the most beneficial to me and to my work. Every museum had a personal interpretation of the best ways to present an exhibition but all museums hold the same basic aims in common: presenting information in such a way that the public will gain knowledge as it experiences enjoyment. Thus, though I learnt many highly esoteric pieces of information such as techniques for the preservation of frogs, I was able to absorb such information into my whole body of knowledge gained through experience of museums in general. When you have such a grasp of general principles understanding details in any language or culture is not impossible in fact such details only serve to confirm and to add to your knowledge.



Plate: The staff of Tochigi prefectural museum make briefing about Tochigi Museum.

4. Training in Natural Research and Collecting Samples of Plants and Animals

There is a special way to collect and classify plant specimens depending upon the type of sampling. Focusing on such minute is clearly necessary before any attempt sat general analysis can be made and any actual exhibition can be constructed:

1. Insect:

Common name of species: _____ Date: _____
 Locality _____ Collector: _____ Altitude: _____ M.

2. Plants:

Sampling is dependent on wether or not the plant is a flower or a fruit.

Common name (Species): _____ Date: _____
 Locality _____ Altitude: _____
 Estimated height: _____ M and DBH _____ CM Collector: _____

3. Birds:

Common name: _____ Date: _____
 Collectors name: _____ Locality: _____
 Length of wings: _____ Number of wings: _____
 Total length: _____



Fig. 1-1. The method of measuring the wing.

Fig. 1-5. example figure numbered still ring.

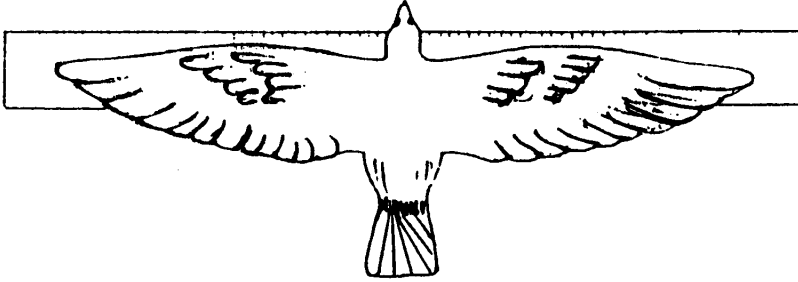
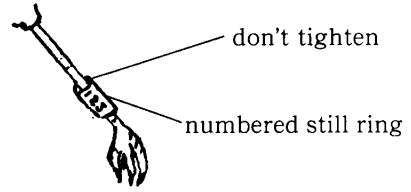


Fig. 1-2. The method of measuring the wing span.

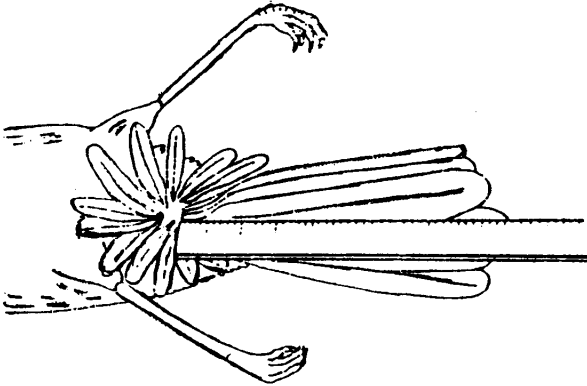


Fig. 1-3. The method of measuring the tail.

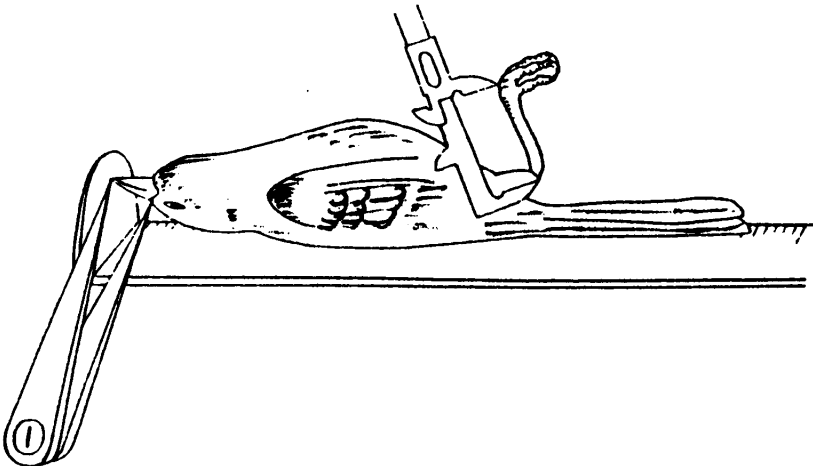


Fig. 1-4. The method of measuring the bills and tarsus.

Fig. 1: Example the method of measuring the bird.

The data for evaluating plants, an example.

Name (Species): Date:

Aufuna Ar. (Vegetation research term): Altitude:

Aufuna Von: Locality:

B-1: M.% (Estimated height) B-2 M % (Second estimated height)

s M % (Shrub) k M % (Grass or herb)

M % (Moss)

Exp. U. Neigung. (Slope and opposite-North, East, South and west.)

Hohe U. M X QM (Size quadrat)

Microrelief % (Dead leaf dropped) Artenzah: (Number of species)



Fig. 2: The method of ecology plants evaluation in the field.

5. The Classification and Identification of Organisms

More than 1,500,000 different kinds of living things have been discovered and more are being detected every day. The task of sifting through these myriad images of life, limbs, colours, teeth, hands, and sorting them into groups is known as classification. Aristotle was very fond of classification and it has infuriated Neo-Platonists and Romantics ever since. As we have seen, however, it is by no means incompatible with a broader conception of life and, treated with care, it can reach up into the world of ideas.

In the process of classification it is essential to look for many shared characteristics and not just for one. For example, animals which fly could form a group but this would mean grouping together animals as different as mischievous sparrows and beautiful butterflies. Birds, as Shakespeare once remarked, can have more in common with fish at times than with butterflies in spite of the superficial connection.

The Character of a classifier has been derided through the ages as somewhat pedantic and almost abnormal. In Japan Abe Kobo's Novel "The woman in the dunes" he depicts a slightly strange collector and classifier of insects sifting through the sands in a obsessional search for new specimens. Yet the careful study of all the main features of organisms is both a natural and a necessary thing if we are to explore any field of knowledge. And so biologists have studied various shapes of bodies, different limbs, different kinds of skeletons, the arrangement of internal organs and other features before they arrive at a competent classification. It is not unlike using a sort of intellectual size.

For this classification organisms are first organized into large groups known as kingdoms such as the animal kingdom or the plant kingdom. Unicellar organisms and fungi, which cannot be placed in either, have been exiled to a kingdom called Protista. Kingdoms are then divided into smaller dominions known as Phyla which are then fragmented further into countries, towns, villages and hamlets if we are to extend the image further. The smallest group of living things is scientifically known as a species.

A species can be defined as a group of organisms that can mate together and subsequently spawn offspring. Humans, dogs, dandelions and cowslips are examples of four different types of species. Usually members of one species cannot mate with another. Humans, for example, cannot breed with geese.

(1). Identifying Organisms with a Key

And so let us move closer to specific definition, always keeping before us the final end and always adhering to the strictures of scientific truth. The Kagoshima sky has been sprayed rusty gray by Sakurajima and a thousand insects with ash between their wings, as in their eyes seem to be swarming between my eyes and the eye of this winter sun. Let us concentrate on the interesting example of the beetle.

A key is vital in any attempt at classification and one of the commonest and simplest types of Key consists of brief descriptions of the organism arranged in numbered pairs like Augustan

rhyming couplets. First one must study and learn the technical names for the parts of the beetle then look at the beetle and read the first pair of descriptions, judiciously decide which description is most appropriate for the said beetle and find the number written at the end of the said description. Go to the sentence that is prefigured by this number and then read the description and see once again whether it is compatible with the beetle in question. Eventually you will come to a sentence without a number after it and this will be the Beetle in question. You have the name of the Beetle and you can begin again with another Beetle.

(2). An Example: Key for five Beetles:

1. Hind legs pointed and fringed with hair. Diving Beetle.
2. Wing cases either very small or very large. This group is the Rove Beetle.
3. Jaws small or barely distinguishable. The Stag Beetle.
4. Tufta or hairs at the tip of the Antennae. The Cockchafer Beetle.
5. Antennae longer than the body or shorter than the body. The Long-eared Beetle or the Weevil Beetle.

6. Compiling the Specimens of Insects and Plants

(1). Insect

Due to the amount of Insects in the world the study of them is as extensive as it is complex. In most cases we can use the method of classification previously employed for the Beetle but Moths, Dragonflies, Butterflies and other types require a special technique. The bigger the size, the easier for the specimen to be compiled and classified. Smaller specimens need more care and they must be set on small, hard paper.

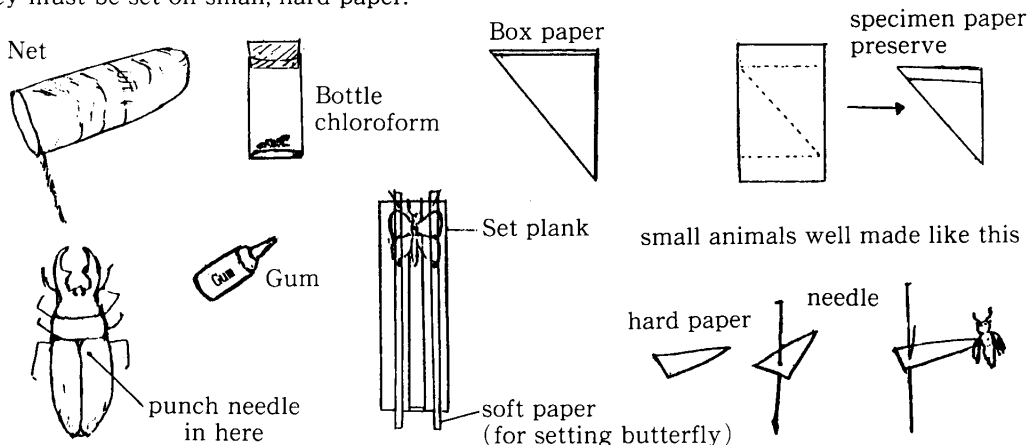


Fig. 3: Equipment of Insect collecting and setting system.

(2). Plant Setting

Plants are an invaluable part of a Natural History Museum and reproducing the natural ecological conditions of a plants habitat clearly is the most fundamental problem that we face.

Plants should be dug from the ground but their roots should be left intact. Specimens are washed to remove the soil and other extraneous matters and are then pressed with paper or newspaper. Then they are put inside a drier for a few days. The specimens then must be set on hard and dry paper and then labeled.

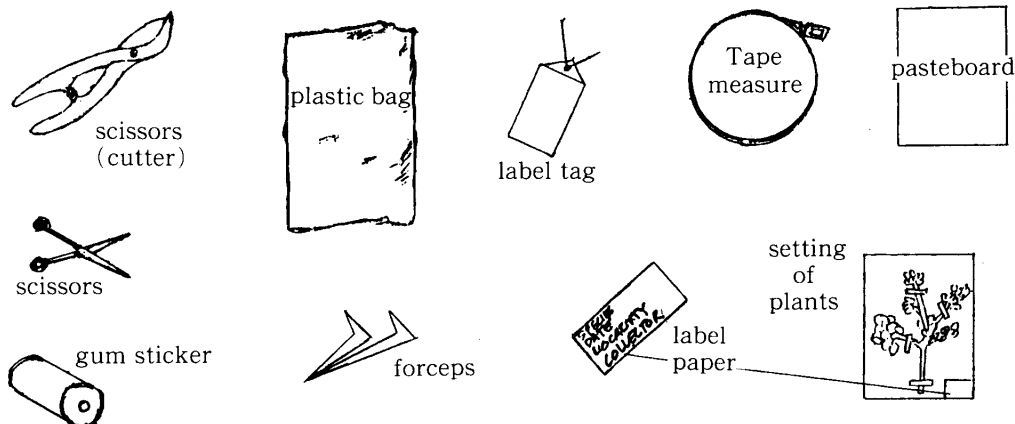


Fig. 3: Equipment of plants collecting and setting system.

7. Animal Mounting

I studied how to mount various types of animal with the expert Takao Hakusei at Ono Cho. He has been mounting animals now for some time and it can be said without exaggeration that he has penetrated further into the subject than anyone I have ever met. However as his mounting methods and mounting techniques, for obvious reasons, are secrets of the company I am not at liberty to disclose them to the gentle reader here. For my part I can only say that his mounting of animals was a joy to watch and in the short space of my study I experienced many new sensations and understood many things which I hope to disseminate to the public of Malaysia. But further than this I cannot wander, for I must hold my tongue.



Plate: The photo shows some mounting activity in the mounting course.

8. Museum Management

A museum is of course not a profit-making organization. Its objective is to serve society, to allow society to utilize it for educational and leisure purposes and because of this we must diligently collect specimens and present them in the most accessible and useful ways possible. We must not cease from the mental might involved in this process.

A museum has an overall administrative organization and yet every section is in a sense self-contained. Every activity thus effects every other activity and discussion between specialized departments is what we aim to perfect if the museum is to achieve its objectives.

In terms of finance there is no fixed allocation for us and it largely depends on the necessities of each department as they arise. However, normally we can justify claims to a high portion of official budget because of the importance of our public service. And again though museums differ in specific needs they are universal in their need to purchase specialist equipment in order to fulfill their aims to the best of their ability.

9. Planetarium

The Planetarium is a partial activity of the science museum in Kagoshima and it displays the earth, stars, moon and fossils brilliantly using slides and models. Also in the exhibitions we can trace the progress of science in the story of man's exploration of the moon. This was all very new and very wonderful for me but with the wonder came difficulty in understanding every aspect of its dazzling achievement. Yet after a while I learnt about the theory of the slide show and the specific machines employed in its presentation. More poetically, it inspired me to carry out my only practical investigations and like the English writer Coleridge at Christ's hospital School I observed the movements of the moon and plucked flowers from the galaxy.

CONCLUSION

I have thus discovered a great deal about Museums and I have discovered a brave new world of fieldwork techniques here in Japan. My only regret is that with so much concentration on academic work my social life suffered and I was not able to experience as much of Japan's Neon-lit social life as I wanted to. Perhaps if I had but more time I would have been able to understand Japanese culture a little more and thus have been able to understand more of the Japanese in the textbooks I had to crawl through like an inky spider. The barrier of language was surely a difficult one to overcome.

And yet language and the differences of culture and museum style did not prevent me from forming a general relationship with my fellow works and with my study which cut across the line of cultural differences. I studied Japanese in Kanoya for a while and after this the fieldwork was easy but then something happened to my stomach and my studies were interrupted by a period of hospitalization that lasted for two weeks. In that time I contravened many of the hospital rules and I fear caused more problems than I should have and yet the rules were written in Kanji and were too complex, too blurred in my foreign mind, to read.

During my stay here I have met many wonderful friends and have received the help of many generous people. To the teachers at Kanoya I give my heartfelt thanks and to my supervisor and to that master Mr. Takao who has mounted more animals in his time than I had imagined within the scope of human capabilities I likewise bare gratitude which I can not express. The Sugimoto family that took me to Mount Fuji and the Terada family and Mr. Nakamura I also owe much as I do to everyone who made my stay profitable and possible. Thank you.