

Digitizing and data basing of bee specimens in Thailand

Programme:BIFA

Project ID: BIFA5_005

Project lead organization:Chulalongkorn University, Department of Biology

Project implementation period:1/7/2020 - 30/6/2021

Report approved: 1/6/2021

Narrative Midterm report

Executive Summary

The purpose of this project is to mobilize at least 8,000 processed occurrence records of Thai bees deposited at Chulalongkorn University Natural History Museum to GBIF. Activities included in this project are transcription of label data, mapping species distribution, photographing of specimens, assigning QR codes, transcription of data to GBIF platform for delivery, and holding a workshop to showcase and demonstrate the use of the database.

In this mid-term report, we are please to share that the transcription of the label data is completed for 7,925 specimens (163 species). In addition, we completed the photographing of 2,193 specimens that made a total number of 9000+ images that are currently published in GBIF. Georeferencing data are completed and validated for 7,073 specimens. Mapping of species distribution using QGIS program will be implemented in the next phase. Despite surpassing many of our milestones, the process of generating and attaching QR codes to our specimens and link to our database is still at an infancy stage due to the delay in obtaining suitable equipment.

The project implementation has been more or less efficient despite the COVID-19 pandemic problem in Thailand and around the world. We currently hired three recent graduate students as full time workers on this project with one PhD student working part time. The communications among all of the staffs in this project are very effective, because we work in the same facility everyday and we have the project meeting every week to discuss our short comings. Despite the obstacles we faced during this COVID-19 pandemic, we are optimistic that we will achieve our goals at the end of the project deadline.

Progress against milestones

Has your project published at least one dataset through GBIF.org?: Yes

Dataset published:

Dataset	DOI
Database and digitization of bees in Thailand	doi.org/10.15468/tf4ejd

Has at least one member of your project team received certification following the BIFA capacity enhancement workshop?: Yes

Name of the workshop participant:Pakorn Nalinrachatakan

Certification obtained: Basic Badge

Report on Activities

Activity progress summary

The progress of the activities are described as follows:

1. A mandatory meeting @ GBIF workshop: We attended the GBIF workshop during the 20-24 July 2020. Mr. Pakorn Nalinrachatakan, our project technician, is later certified with a "Basic" badge for the training.

2. Sorting, identification, validation of specimen data for registration into GBIF: We completed the sorting, identification, validation, and transcribing of 7,925 specimens data in CSV format stored in GoogleDrive link and published in GBIF (doi.org/10.15468/tf4ejd).

3. Photographing of specimens and associated labels: 9000+ high-resolution images of bees specimens and their labels are captured from 2,193 specimens. Despite the fact that more than 9000+ images were captured, we only cover a quarter of the label images. This is because we decided to capture three views (dorsal, frontal, lateral) instead of one (dorsal) and a label image for each specimens. This attempt delayed us from finishing capturing label data. For the remaining time of the project, we will focus on meeting our goal to provide 8000+ label images by capturing only the dorsal view and label images of the specimens.

4. Mapping of species distribution: Georeferencing data are completed and validated for 7,073 specimens. Mapping of species distribution using QGIS program will be implemented in the next phase of the work. The process involving QGIS program to create map of species distribution will be fairly fast because the georeference data of the specimens are mostly validated.

5. Transcription of data to GBIF platform and upload processed records: We published our first database in GBIF platform in the following doi.org/10.15468/tf4ejd

6. Attaching QR codes to specimens and link to database: The process of generating and attaching QR codes to our specimens and link to our database is only started due to the delay in obtaining suitable equipment. Nevertheless, this problem should be overcome swiftly when the equipment is available. The attaching of QR code to specimens and linking to the database should be completed by the time at the end of the project or before.

Completed activities

Activity name: Mandatory Meeting @ BIFA workshop

Description: Mandatory Meeting @ BIFA workshop

Start Date - End Date: 20/7/2020 - 24/7/2020

Verification Sources: In report attachment

Report on Deliverables

Deliverables progress summary

We pledged to provide a dataset containing approximately 8,000 occurrence records of bee specimens deposited at the Chulalongkorn University Natural History Museum, Thailand delivered to GBIF by the 30th of June 2021. Currently, the first dataset of our work is published on GBIF platform (doi.org/10.15468/tf4ejd). This dataset includes the transcription of the label data for 7,925 specimens (163 species), Images of 2,193 specimens with three views (dorsal, frontal, and lateral) and labels resulted in more than 9000+ pictures. Also, 7,073 specimens occurrence records are completed with georeferencing data. Please refer to the Activity Progress Summary for highlight of some delayed deliverables.

Progress towards deliverables

Title: Bees of Thailand

Type: Dataset

Status update: This dataset includes the transcription of the label data for 7,925 specimens (163 species), Images of 2,193 specimens with three views (dorsal, frontal, and lateral) and labels resulted in more than 9000+ pictures. Also, 7,073 specimens occurrence records are completed with georeferencing data.

Dataset scope: Occurrence records of bees in Thailand

Expected number of records: 7925

Data holder: Natapot Warrit
Data host institution: Chulalongkorn University
Sampling method:
% complete: 65
DOI: doi.org/10.15468/tf4ejd
Expected date of publication: 2021-06-30

Communications and visibility

Occurrence record database of bees in Thailand will be produced and published to GBIF, and also be used as a template for creating website relating to biodiversity information in Thailand hosted by the National Science and Technology Developing Agency (NSTDA). Taxonomically important records of certain species resulted from this work will be published in scientific journals to complement the database in the future. The processes and methods of digitization of bee occurrence records will be disseminated and shared with other research collections, universities, and institutions in Thailand through communications to the NSTDA website and other social media. In June 2021, a workshop on Thai bee databasing is planned at Chulalongkorn University, Bangkok, which will bring together students and researchers interested in pollination ecology, conservation, and bee taxonomy to familiarize and learn how to efficiently utilize the information provided in the database, and also to advertise information regarding the importance of pollinators to the public. For further communication and dissemination of the project, we are more than happy to liaise with the GBIF Secretariat to help advertising of biodiversity data sharing to other Thai research institutions. In addition, working with the GBIF Secretariat in the future will surely provide opportunity for us to gain future insights and update our knowledge in biodiversity information management.

Monitoring and evaluation

Monitoring and evaluation findings

For a current evaluation and assessment of the project outputs and deliverables, please refer to the Activity Progress Summary and Deliverables Progress Summary sections.

The project implementation has been more or less efficient despite the COVID-19 pandemic situation in Thailand and around the world. We currently hired three recent graduate students as full time workers on this project with one PhD student working part time. Many undergraduate students were employed as well on hourly stipends. The communications among all of the staffs in this project are very effective, because we work in the same facility everyday and we have the project meeting every week to discuss our short comings.

Our experiences communicating with GBIF secretariat, personnel, and Helpdesk have been very productive and helpful to our ability to complete the first half of the project. We initially encountered difficulty mobilizing our dataset to IPT in GBIF because our institution has no previous contact with GBIF. Assistance from the Helpdesk has been particularly very helpful and generous in guiding us to the right direction by establishing contact with the IPT platform for us to deliver the dataset.

Impact of COVID-19 pandemic on project implementation

The project has been conducted consistently from the beginning in July; however, intermittent university shut-downs from COVID-19 situation has delayed our works slightly. The shut-down of the university prohibited us from gaining access to collection, photographic equipment, and computer including server for database storage. Nevertheless, we were able to compensate the time lost and keep up with our work. The major impact COVID-19 epidemic has on us is the difficulty in obtaining suitable equipment and computer to initiate the project because trades were disrupt from the pandemic. We have to wait for suitable equipment to arrive before we can proceed with our work. This is the case for obtaining appropriate QR code printer and other computer components to link the QR code to our dataset. However, despite the obstacles we faced during this pandemic, we are optimistic that we will achieve our goals at the end of the deadline.

GBIF leads the Biodiversity Information Fund for Asia (BIFA), a programme funded by the Ministry of the Environment, Government of Japan. The programme provides supplementary support for activities addressing the needs of regional researchers and policymakers through mobilization and use of biodiversity data.

