

iCMoB VISIT TO THE NATIONAL MUSEUMS OF KENYA, BOTANY DEPARTMENT

EAST AFRICAN HERBARIUM.

National museums of Kenya being an East African Herbarium centre has a mandate to help other institutions in the region to become better in growth, documentation and preservation of both living and voucher specimens. Linking the University and industries being a major objective of AFRICA-*ai*-JAPAN Project and with the determination to come up with a Natural Product Research Centre, a representative team from iCMoB subtask force made a benchmarking visit to National Museums of Kenya on 12th February 2021 in a bid to understand the processes involved in setting up as well as identify areas in the institution that would offer basis for linkages.

iCMoB Team Present

Dr. Joseph Wakibia – Lead person

Mr. Bernard Kinyua – Member

Mr. John Kamau – Member

Objectives of the visit

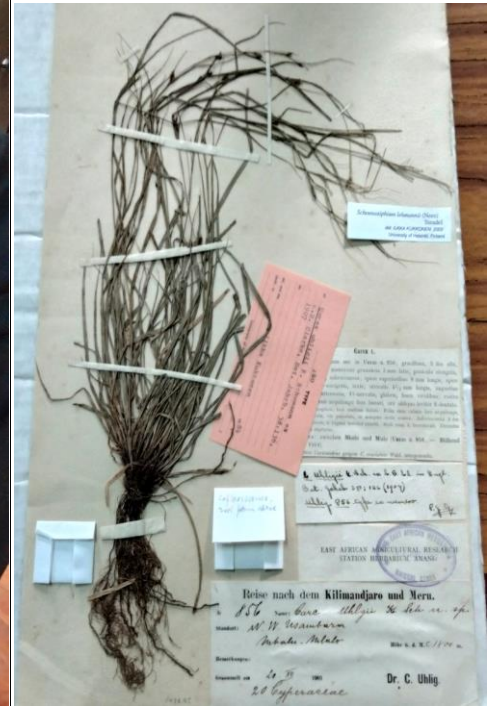
- Benchmark and enlighten with the recent advances in herbarium such as digitalization
- Familiarization on the structural building and equipment of the institution.
- Familiarize with the process of setting up an herbarium section, botanical garden also rules and regulations involved.

Institution history

Dr. Musila who heads the department of Botany (East African Herbarium) was our host and he started by sharing a brief history of the institution.

The East African Herbarium (EAH) was founded at Amani institute, Tanzania, as satellite of the Berlin Dahlen Herbarium, Germany. After the First World War, it became a satellite of the Royal Botanical Gardens. Later it was administered as part of East Africa Agriculture and Forestry Research Organization. Amani collections were moved to Nairobi in 1950 and merged with the Corydon memorial museum (Now National Museums of Kenya) under the now Kenya Agricultural & Livestock Research Organization (KALRO) until 1982 where it was adopted by NMK to be a department of botanical sciences.

The herbarium currently has the largest collection in tropical Africa. More than a million preserved collections and still collecting, the EAH is a national and regional repository and reference centre for plant and fungi diversity. Identification of specimens and verification of names is a key function. It has a comprehensive databank with over 4000 type specimen, 3000 lower plants, 5000 fungi and 2000 botanical illustration. The collections have been acquired through various expedition and collaborative programs over the last 114 years.



iCMoB team being briefed by Dr. Musila about latest advances in herbarium

Research Programmes

The EAH undertakes research in plant taxonomy, conservation and biodiversity assessment. The key users of the department are taxonomists, ecologists, conservationists, students, environmentalists, plant breeders, horticulturists, pharmaceuticals prospectors, veterinaries, forensic investigators and palaeontologists.

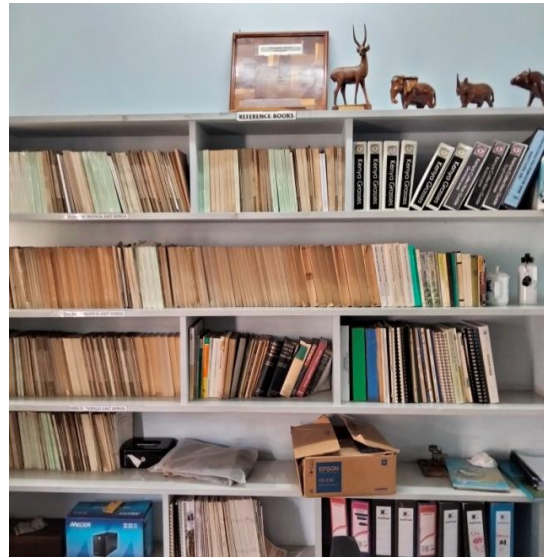
Our Key topic on that day was on instrumentation, infrastructure and structural building design and we were equipped with more knowledge and ideas on how to start an herbarium.

Herbarium Library

It's very necessary and useful to have an herbarium library with common books of reference which should not be borrowed to avoid disappearance and damage since most of these reference books are hardly found. Among the books that we need are;

1. Kenya trees and shrubs & lilies (NMK)
2. Upland Kenya wild flowers and ferns - 3rd edition ADQ Agnew
3. Plants at work – principles of biological series (F.C Stewards)
4. Beautiful plants of Kenya
5. Dry land plants of Africa
6. Journals, annual reports and bulletins

The library should have a good computer for digital updates, a good digital Camera, cupboards made of hardwood or metal, Ladder, Bench for drying and sits



Shelves with reference books, journals and bulletins



Bench for specimen laying process



cabinets made of hardwood



For capturing data electronically



cabinets locally made using hardwood.

The building

- Avoid fire in the herbarium at all
- Equip the building with fire extinguisher
- No food at all should be taken in the herbarium since food attracts pests
- Be careful about water – the building should be waterproof
- Some parts of the building should be permanently closed to avoid pests and dust
- Windows should remain closed at all time
- Fumigation should be done at least once a year

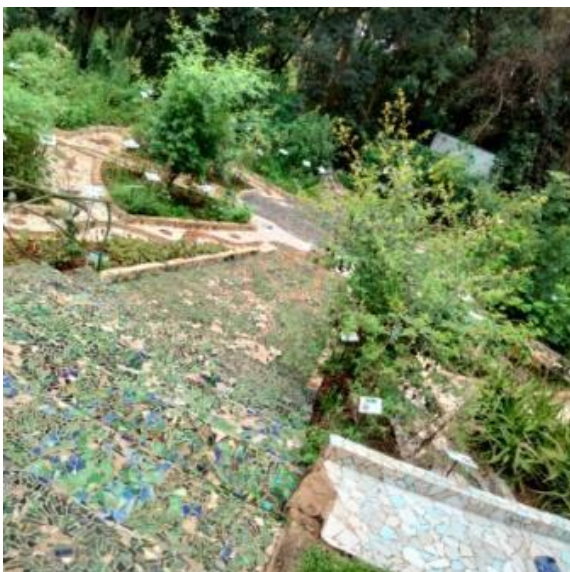
Consumables

- Mounting sheets
- Species cover
- Genus cover
- Mounting glue (wooden glue)
- Gum Arabica
- Brushes and razors
- Needles and thread

Other equipment we came across included, deep freezer, electric dryer, grinder, secateurs, GPS for field work, lens eye loupe among others. Another key point we noted was that a curator who ensures that day to day routine activities in the herbarium are conducted is very important. At least curation should be done every 3 days so as to update and maintain the specimens.

Botanical Garden

The Nairobi Botanical Garden maintains a living collection of medicinal, food, rare and threatened plants species displayed in various units such as succulent garden and orchid house. It also undertakes a public education programme in specialized fields such as environmental conservation. We admitted that our JKUAT Botanical Garden is good and rich in medicinal plants.



Section of the Nairobi botanical garden.

Potential collaboration areas (JKUAT-National Museums of Kenya)

- The institution having a mandate to help other upcoming herbarium in the region shall support us as we set up our facility. Dr. Musila echoed that he and his team can also travel to JKUAT to assist where necessary.
- The institution will help us in authentication of specimens, and through our partnership, they also said they can assist us to work with their equipment in their facility where need arises, and this is a great link between the University and the institution.
- The institution offers trainings and internships to students through the educational department and this will benefit our JKUAT students

We left the facility having accomplished our visit objectives.



ICMoB team with Dr. Musila after the facility walk