



Somaliland Biodiversity Foundation

ACTIVITY REPORT FOR 2018

Museum

In 2018, the area outside the museum was fenced off and a succulent garden established. The original idea was to keep the fenced area as a “natural” area, but it was subsequently decided to use some of the area for planting succulents. Having the succulents so close to the museum makes it easy to watch and record their development.

The University built an attractive narrow step in front of the museum building to protect the museum from flooding, extending it for about 4 meters on one side of the door. This area is now being used as a stand for the potted succulents.

The foundation had installed to aid in maintenance of the succulents. Later, a gutter was installed under the roof of the museum building to deflect the water from the roof (and those entering the museum) into the water tank, thereby contributing to water conservation on campus.

An insect cabinet was ordered but the pattern used called for glass of a thickness not available in Somaliland. This was discovered before Barkworth left in May. Although she returned with glass of the right thickness in November, the cabinet could not be completed before the end of the year.

In November, Barkworth and Faisal Gelle spent 4 days at the herbarium of National Museums Kenya. Their purpose was to review specimens of *Aloe* in connection with development of the paper on the Red Somali Aloe, but it also introduced Gelle to the largest herbarium (1 million specimens) in the region, one that contains many specimens from Somaliland. During their time there, Barkworth raised the possibility of formal training opportunities there for Gelle and, after listening to what would be offered, it was agreed to initiate such training in 2019.

Anjanette DeCarlo and Stephen Johnson, working with Ahmed Mohamed Dhunkaal, asked for assistance in confirming that morphologically and chemically distinct plants of *Boswellia* represent a hitherto unrecognized species. Barkworth advised them to send a specimen to and work with Mats Thulin, author of the family treatment in the *Flora of Somalia*, because of his familiarity with the genus and access to specimens of all currently recognized species growing in the Horn of Africa. They deposited what was, at the time, a potential holotype in the herbarium. Holotypes are of global significance because they fix the meaning of a name.

The herbarium collection doubled in size, reaching 265 specimens, thanks primarily to collections by Pickering and a third kind of cactus was discovered, growing in a graveyard in Hargeysa. Images have been sent to Dr. Lucas Majure, an expert on *Opuntia* for identification.

Publications

Helen Pickering agreed with Dr. Jama of the Red Sea Culture Centre to restrict her proposed book on the plants of Somaliland to those of Central Somaliland so that it could be completed in time for launching at the Hargeysa International Book Fair in July. They also agreed to make the book available in both English and Somali. The English version was launched at the 2018 Book Fair. Publication of the Somali version has been delayed.

Pickering provided most of the financial support for publication of the two books, but the Foundation supported Faisal Gelle's work on developing the initial Somali translation which was then edited by Awale for publication. Pending publication of the Somali version, the Somali version of the descriptions have been posted to OpenHerbarium, along with Pickering's images.

Preparation of papers on two potentially new species from Somaliland was begun. As part of the process, holotype specimens were deposited in the herbarium. Holotypes are specimens that fix the meaning of biological names. They are, therefore, of great importance.

Outreach

The herbarium of the museum was formally registered with [Index herbariorum](#), the international registry of the world's herbaria, in August. Its formal code is HARG. In October, it was approved as a data publisher by the Global Biodiversity Information Facility (GBIF), becoming the first herbarium from eastern tropical Africa to be a GBIF data provider. One advantage of being a data provider is that GBIF tracks use of data downloaded from its site. In March, 2019, data from 136 several data providers, including HARG, were used to generate a map of the distribution of *Acacia saligna* for Wikipedia

About 150 keys from the *Flora of Somalia* (Thulin 1993, 1995, 1999, 2006) were placed online in [Keybase](#). This makes them accessible online and enables linking of the names to descriptive pages generated by OpenHerbarium. Admittedly, many of the pages contain no information at present but it is easiest to generate the links when adding the keys. The wording in some of the keys is somewhat simplified from that in the published *Flora* and a few reflect taxonomic changes, but such editorial changes are few. Several images, including all those from *Introduction to plants in Central Somaliland*, have been added to OpenHerbarium and those from Tomáš Mazuch's Facebook postings added to OpenZooMuseum.

None of the above web sites receives much traffic at present but building them to the point where they are useful takes time. Moreover, they are being developed as primarily as resources for people with a basic background in plant taxonomy, one that includes learning use keys and some technical terminology. With help from Ahmed and Faisal, Somali names and descriptions, based on those in *Introduction to plants of Central Somaliland*, have been added to some taxa.

At a meeting in the US, Dr. Lisa Philander of the University of Minnesota inquired about obtaining plants of representative common native plant species to help establish a Horn of Africa section at the University's Biocultural Diversity Conservation Center. The University of Minnesota is in an area where there are many members of the Somali Diaspora and there is interest in helping them and their children understand more about their heritage, including the relationship between the area's ecology and culture. Barkworth promised to ask about the process that would be involved in obtaining the necessary export permits.

The Ministry of Environment and Rural Development established a committee to examine the question, but it held only one meeting and no progress has been made.

Education

In 2018, the Foundation contributed to expanding educational opportunities in Somaliland: by encouraging completion of *Introduction to Plants of Central Somaliland*; assigning Gelle responsibility for the initial translation of Pickering's book; advertising publication of the English edition at meetings in the US and via Facebook; and by making preliminary arrangements for Gelle to obtain training in plant taxonomy and herbarium management at the East African herbarium (EA) of National Museums Kenya.

Working on the translation of Pickering's book helped Gelle expand his knowledge of botanical terminology, thereby enabling him to be of greater assistance in reviewing specimens of Aloe at EA. No workshops were held, largely because there did not seem to be an appropriate target group. He also accompanied her on some of her fieldwork, thereby improving his knowledge of Somaliland's plants.

No course proposals were developed for consideration by the University of Hargeisa.

Talks

Awale, Ahmed Ibrahim and Mary Barkworth. 2018. Why a Somaliland Biodiversity Foundation. Presented to the Somali Studies International Association.

Barkworth, Mary E. 2018. Mobilizing data in two developing countries, Pakistan and Somaliland. Presented to Biodiversity Information Standards.

Barkworth, Mary E., Ahmed I. Awale, F. Jama Gelle, H. Pickering, and Mohamed Abdul Warsame. 2018. Progress in building a biodiversity program in Somaliland. Presented to the Botanical Society of America.

Pickering, Helen and Ahmed Awale. 2018. Introduction to plants in Central Somaliland, a new book designed for a general audience. Presented to the Hargeysa International Book Fair.

Meetings

Gelle represented the Foundation at various meetings such as the following:

Gelle, Faisal Jama. May, 2018. Waste management during the rainy season: identifying and decreasing the obstacles to management.

Gelle, Faisal Jama. July, 2018. Environmental Sector Coordination. Meeting called by Ministry of Environment and Rural Development.