



# Somaliland Biodiversity Foundation

December 2024—Newsletter 11

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## Looking ahead

Since its start in 2016, the Foundation has focused primarily on starting a biodiversity museum at the University of Hargeisa by building a plant collection. A few years ago, it added the equipment for starting an insect collection. In 2025, we shall start similar collections at two other universities, Amoud University at Borama in western Somaliland and the University of Burao in central Somaliland. Both institutions have active programs in related disciplines and an interest in starting such collections.

The Foundation is also sponsoring a 4-day workshop for representatives of all three universities in February. The workshop will have two goals, instruction on how to share collection records regionally and globally and identifying inexpensive projects that would benefit from collaboration and demonstrate the value of such collections, locally, nationally, and globally.

This is an ambitious program, significantly more ambitious than our efforts to date. We are asking for your assistance in making it possible. Any amount would be helpful. Dissecting microscopes, which are essential for studying both plants and insects, cost \$1000. At the other end of the scale, standard forceps, cost \$3 each. In other words, any donation would be helpful. If you can, [please help!](#)

Mary E. Barkworth

## Featured Species

### *Edithcolea grandis*

“Persian carpet flower” or “Xamakow”



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*Edithcolea grandis*, Xamakow in Somali, is a succulent plant species that grows throughout the Horn of Africa, Yemen and Socotra.

The genus is named after Edith Cole (1859–1940), who collected the type material for this plant with Lort Philips in 1895, during a botanical expedition (1894–1895) in British Somaliland. The English name of the plant is ‘Persian carpet flower’ alluding to the colorful texture of the patterns on the petals that are reminiscent of the woven carpets of the middle east.

Text and photograph: Ahmed I. Awale

# Swayne's locations today

Faisal Jama Gelle and Stephen Johnson

Between 1887 and 1893, Capt. H.G.C. Swayne, a big game hunter, visited numerous locations in Somaliland. He described many of these locations in his book<sup>1</sup>. In November 2024, Faisal Jama Gelle (SBF) and Ismael Esse Hayir (Ministry of Environment and Climate Change), with funding from the Rift Valley Institute, revisited three villages Swayne described. Their purpose was to compare Swayne's descriptions of the three locations with their present condition and, through interviews, understand better the impact of the loss of many once-dominant organisms over the past 140 years has had on local communities in once thriving ecosystems.

Swayne took numerous photographs, made sketches, and wrote narrative descriptions of the flora, fauna, and ecology as he travelled through Somaliland. The descriptions are not detailed, but his work provides valuable insights into Somaliland's environment in the late nineteenth century. Because Swayne was a big game hunter, focused on the animals he encountered but he

also provided short descriptions of the vegetation. Among the animals he recorded were antelopes, Soemmerring's gazelles, kudu, elephants, Waller's gazelles, lions, wart-hogs, spotted hyenas, and baboon. The plants he mentioned were aloes, armo (*Cissus* sp.), and qudhac (*Vachellia tortilis*), hig (*Dracaena* sp.).

Faisal and Ismael were only able to visit three of the sites Swayne visited, none of which he had photographed. Two, Jalelo and Hunboweyne, are in Maroodijeh, and the third, Hiinweyne is near Dalaw village in Sahil. In each, they interviewed local elders and took photographs.

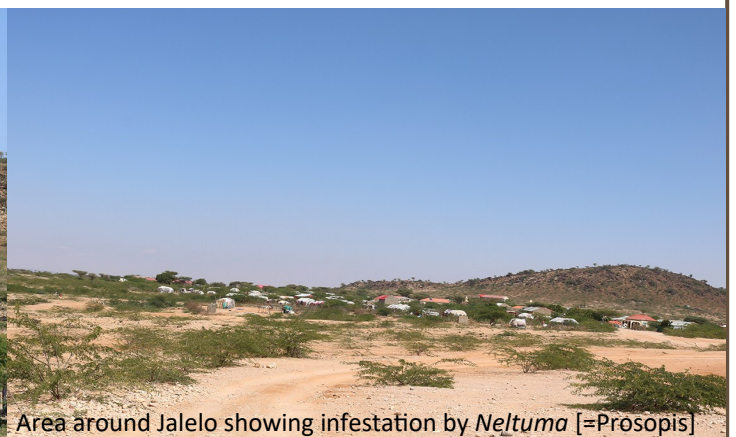
The visits took place from November 24-27, after Somaliland's presidential election. The interview recordings are still being transcribed and translated. This article focuses on the contrast between Swayne's descriptions of the three sites and their current condition. The full report of this exploratory project, together with analyses of the elders' comments will be published in 2025.

## Jalelo

**Swayne:** A hot, dry location near the Hembeweina river. The riverbed is occasionally a sanctuary for elephants, offering them water and food in the form of creepers, aloes, and date palms. The area immediately around Jalelo is dominated by dense reeds up to 10 feet tall. Large trees such as date palms and *Vachellia* trees grow in the forest around the river.



Hillsides around Jalelo



Area around Jalelo showing infestation by *Neltuma* [=Prosopis]

Today the hillsides around the village have scattered *Vachellia tortilis* (Qurac) trees and lots of bare soil. In many areas, almost the only species present is the invasive weed *Neltuma juliflora* [= *Prosopis juliflora*].

## Reference

Swayne, H.G.C. (1895) Seventeen trips through Somaliland: a record of exploration and big game shooting, 1885 to 1893. Rowland War and Co., Ltd., The Jungle, Picadilly. Also available, for free, as an ebook, at <https://www.gutenberg.org/files/57907/57907-h/57907-h.htm> and from [Amazon](#) in multiple formats.



## Hunboweyne

**Swayne:** Hunboweyne is located along the Issutugan river. The river has a broad, dry, sandy bed bordered by thick forest with dense underbrush that includes a number of aloes. The riverbed itself has patches of grass and pools of water as well as wide, dry, sandy strips. Date palms grow near the river.



River bed showing vehicle tracks



Today the river is seasonal, having no visible water much of the year, and little of it is bordered by thick forest with dense underbrush. In addition, *Neltuma juliflora* [= *Proposis juliflora*] now forms a dense cover over much of the surrounding area. Aloes are still present, as is the occasional palm tree, but the value of the land available to local communities has severely decreased.

## Hiinweyne

**Swayne:** Hiinweyne is in a valley with numerous ravines, rocky hillsides, and steep terrain. The area around has large, flat-topped *Vachellia* trees and dense underbrush with numerous aloes. The trees are covered with thick masses of lianas, which have heart-shaped, thick, rubbery leaves full of sap. The hillsides feature scrubby vegetation and areas of rugged, rocky terrain. A stream runs through the camp.



River bed



Road to Dalaw, showing scattered *Vachellia* trees

Today, the terrain has not changed but there are few large *Vachellia* trees and the understory is formed of low shrubs. Aloes and the lianas (probably *Cissus* sp.) Swayne mentions are still present but not abundant. Driving to the nearby village of Dalaw reveals extensive area of bare soil with scattered low trees and shrubs, some being species of *Vachellia*.

This pilot study was made possible by a small research award from the 'Local Histories of Climate Change in the Horn of Africa' project at the University of Pennsylvania, with support from the staff at the Rift Valley Institute.

Photos by Faisal Jama Gelle



# My journey domesticating Yeheb nut

(*Cordeauxia edulis*)

Ahmed I. Awale



A young Yeheb plant

Photo: Ahmed I. Awale

and its slow growth rate. Heavy grazing pressure and the indiscriminate harvesting of the nuts for food and sale combined with cutting of its branches for shelter material and firewood, has led to the decline of Yeheb stands. The seeds are not as high in protein as some of the commonly cultivated pulses such as soya beans, but they are relatively high in energy rich compounds such as fats, sugars, and starch. They have a sweetish taste and are often preferred to the usual diet of dates and rice. According to an old Somali proverb ‘*fadhi iyo fuud*

*Yicibeed la isla waa*” “A soup prepared from Yeheb is hard to come by,” which means one who sits idle will not get yeheb soup].

In the 1970s and 1980’s, the National Range Agency in Somalia established several protected areas in central Somalia to protect it from grazing. In addition, in the mid 1980’s, 50 plants were established at the Central Agricultural Research Station (CARS) in Afgooye, near Mogadishu, Somalia. These plants grew slowly but flowered and developed abundant nuts. Today, similar efforts are being made by the Somali Pastoral and Agro-Pastoral Research Institute (SoRPARI) in southeastern Ethiopia. Yeheb has also been evaluated in other countries, including the USA.

My interest in the domestication of Yeheb started in 2004 when I planted three individuals grown from seed on a farm near Hargeisa, the capital of

For more than two decades, I have been working to promote conservation of the environment in Somaliland and neighboring areas where Somalis live. One major concern are the highly valued species now under threat of extinction. This last interest has led me to try domesticating valued regional species that, if cultivated, would improve the livelihoods of Somali communities while developing reliable seed sources for propagation of such species. Yeheb nut (= *Cordeauxia edulis* Hemsl.) is at the top of my list of such species.

In 1907, Yeheb was “very common” in its native range of Central Somalia and eastern Ethiopia. Even in 1930 it made up about 50% of the woody vegetation in that region, but today it is considered endangered (IUCN 2024). Why the decline? Primarily overgrazing and overuse, made worse by the increasing frequency and severity of droughts

Somaliland. Unfortunately, none of them survived. Later investigation revealed the root systems were obstructed by the underlying rock, which caused poor drainage and waterlogging in addition to being a physical obstacle.

I made a second attempt to grow Yeheb in 2016 using seeds from Central Somalia, planting them in a better location near Adadley, a town, approximately 90 km east of Hargeisa. That same year, I also received more Yeheb seedlings from Dr. Muna Ismail, from The Yeheb Project, a UK-based non-governmental organization working on the restoration and conservation of Yeheb. The young trees started flowering after five years but failed to set pods until 8 years later, in mid-2024! In its natural habitat, Yeheb takes 4-5 year to produce pods.

I am still investigating why pod production has taken so long at Adadley. It is probably partially attributable to ecological and edaphic factors. According to the literature, Yeheb thrives at elevations of 100–1000 m. The elevation of the Adadley site is over 1400 m and it has colder winters than other locations where Yeheb grows.

In September 2024, I planted seeds from the original Adadley plants in 16 × 30 cm seedling bags containing a medium loamy soil from the farm. They had an 80% germination rate, but seedling survival was only 50%. Nevertheless, I hope that the fact that my Yeheb shrubs are bearing fruit in a location in the Somali region that is different from their native habitat will inspire others to try growing it elsewhere in the region and that, with continued planting of new seeds from new plantings, strains better adapted to different habitats will emerge.

Here are some lessons I have learned about growing Yeheb:

- Weevils and moth larvae also like Yeheb seeds! Only seeds with no visible holes should be planted.
- The seeds germinate best in fine to coarse sand

or a mixture of grit and loamy sand. Germination takes about two weeks.

- Germinated seeds develop tap roots that quickly reached the bottom of the 30 cm long seedling bags.
- The tap roots are easily damaged during transportation so seed bags with germinated seeds should be placed near the planting site. Alternatively, seeds can be planted directly in the ground.
- Yeheb is drought-resistant once the taproot reaches underground moisture, but the more moisture a mature plant gets, the more nuts it will produce.



Yeheb plant with pod

Photo: Ahmed I. Awale

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*Continued on page 8*



# Insect species added!

Mustafe Abdulkadir Abdurahman



*Psycoda cinerea* (a Drain fly or Sewer gnat) is a small fly found in sewers, toilets, and other moist areas. It causes an asthmatic reaction in some people.



*Halyomorpha halys*, Brown marmorated stink bug, feeds on a variety of plants and is active during the day. It produces a bad smell as a defense mechanism.



*Lepisma saccharinum*, Silverfish, is a nocturnal, wingless insect. The English name refers to its silvery color and fish-like movements. Silverfish digest cellulose, thanks to its gut microbes, and can cause allergies and respiratory problems in some people.

In the last Newsletter, Mary Barkworth reported that GBIF had only 523 insect records from Somaliland. At her urging, I photographed some of the I see everyday and sent them to her to share on the internet.

All the pictures are of living insects and were taken with my phone's camera. I also used the cell phone to obtain the latitude, longitude, and elevation of the places where I took the pictures.

The images are now on the web as part of the [HARGZ-I](#) collection. This collection is for imaged-based animal records prepared by people associated with the Biodiversity Museum on the University of Hargeisa campus. So far, I have sent Mary images of 14 insects, 11 identified to species.

Surprisingly, only 13 of the images I sent were of species reported to GBIF from Somaliland. All are common species in Somaliland.

I have posted the photographs I could not identify to iNaturalist hoping they would attract the attention of people who could do so. It is, however, possible that they cannot be identified to species without more detailed images or images of different parts.

Some of my identifications have been questioned by others on iNaturalist. This highlights the need to develop better resources for insect identification in Somaliland.

What have I learned from my experience? Primarily that, if Somaliland's insect collections are to reflect all its insect diversity, a conscious effort must be made to include the "ordinary species", those we encounter every day, not just those that prefer less disturbed locations.

I have also learned that, thanks to digital technology, it is relatively easy to make image-documented evidence of the presence of distinctive species available on the web.

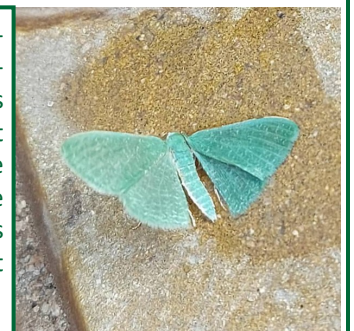
Specimen records are always better than image-based records because specimens can be examined in detail. This is sometimes essential for accurate species identification but, as I have found, so little is known about Somaliland's insects that, for now, a cell phone with a camera is sufficient for adding to what is known about Somaliland's insects. This will be true even if some of the identifications provided are corrected. If that happens, the record in HARGZ-I can be corrected.



*Lucilia sericata*, Common green bottle fly, is a type blow fly that is found on feces. It sometimes causes diarrhea in people. Here it is resting on a guava leaf.



*Ephestia kuehniella*, Mediterranean flour moth, is a pest of cereal crops. They are active at night. This one was attracted by the light in front of my home.



This is one of the images posted to iNaturalist. It is an Emerald moth, but that name is used for about 2,300 different species! It probably cannot be identified to species, maybe not even to genus, from this image, but posting it to iNat will help us find out.

# More benefits from the insect workshops

The two insect workshops led by Dr. Tharina Bird, have been one of the Foundation's most successful activities. Between them, they have involved 31 students, 16 last year, 15 this year. More importantly, the students came away from each with enthusiasm for what they learned, a desire to learn more, and a desire to help others learn more.

## Thank you, Tharina!

The 2024 workshop was held at the Geed-Deeble Botanical Garden. Without being asked, Hadia Ahmed Bihi, one of the participants, sent me a report she had written about the workshop. It conveys well the value of such workshops. With her permission, it is available on the Foundation's website. Other results of the second workshop:

- A WhatsApp group interested in building the insect collection at the University of Hargeisa,

engaging in research projects, and developing resources for learning about Somaliland's insects.

- A group committed to documenting the insect diversity of Geed-Deeble Botanical Garden.

My introduction to Mustafe Abdulkadir, the Entomology instructor at the University of Hargeisa. The article on the previous page, and registration of HARGZ-I with GBIF is a direct consequence of that introduction.

Before Hadia sent her report, I asked students in the WhatsApp group to respond to a questionnaire about the insect workshop. Their responses similar, although shorter, than those reflected in Hadia's report: appreciation for the increased insight and skills they had gained about insects, their diversity, importance, and study. The Foundation will strive to assist them in their efforts. It would be crazy not to.

# So much more to do!

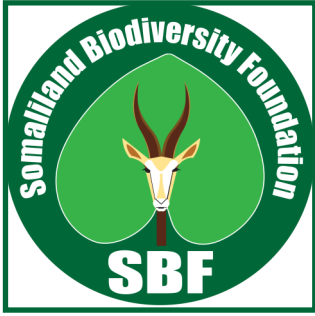
Last summer, I used GBIF to build a taxonomic backbone of scientific names and initiate a checklists of Somaliland's insects in Open-ZooMuseum. I was shocked by how few species GBIF knew of for Somaliland: 50 families, 189 genera, and 214 species. More names have been added since them, but there are many, many more to add.

The problem is that information about Somaliland's species is widely scattered. Google Scholar is great tool for finding papers, but creating a comprehensive insect checklist for Somaliland is going to be a significant undertaking.

## Why would an insect checklist be useful?

It would make creating identification resources easier and encourage focusing on the biology of the species involved, e.g., finding out where and when different species lay their eggs, attract mates, and what they eat. Answers to such questions can suggest ways of encouraging beneficial insects and impeding harmful insects. But names are needed for communication.

There is a long way to go, including developing the resources, physical, educational, and human, for doing so. But the process is underway!



# Foundation news

## 2024 Update

The Foundation's activities since the last newsletter are reflected in the articles by [Faisal Jama Gelle](#) and [Stephen Johnson](#) and by [Mustafe Abdulkadir Abdurahman](#).

**Dennis and Jon Herlocker** have scanned and posted online several reports and report summaries about the rangelands of northern Somalia (aka Somaliland + Puntland) on his [website](#). Scroll down the linked page to find citations and download links.

## 2025

As stated on page 1, a major decision made in 2024 was that there need to be more centres for collection-based biodiversity studies in Somaliland. Consequently, early in 2025 the Foundation will purchase as many of the items needed to start plant and insect collections at Amoud University and the University of Burao as possible. Once each collection is started, it will be registered with [OpenHerbarium](#) (Plants), [OpenZooMuseum](#) (animals), [GrSciColl](#) (all collections) and, once a collection has 50 well-documented specimens, with [GBIF](#).

Other planned activities include:

- Issuing the first biodiversity challenge, for adding to the documented distribution of the four species of *Ziziphus* known to grow in Somaliland.
- Issuing, subject to agreement with MoECC, a "Tree growing" challenge.
- Developing a proposal for funding a meeting that will focus on presentations by faculty and students from the three universities and representatives other organizations in Somaliland working to develop engagement by Somalilanders in the conservation and management of the country's biodiversity.
- Improve the Foundation's website by adding more downloadable resources and updating legacy pages.

Mary E. Barkworth

## References (cont. from p. 5)

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