



# Somaliland Biodiversity Foundation

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## Ahmed Awale honored



Ahmed Awale

Somalilanders know Ahmed Awale as a passionate environmentalist, educator, author, and humanitarian. They will not have been surprised to learn that he has been honored for his work., but they might have been surprised by how he was honored: he had a scorpion named for him.

When biologists name a species for the first time, the name consists of two words, the first places the species with its relatives, the second makes its name unique. On 31 October 2020, František Kovařík and his colleagues named a species of scorpion they found in Somaliland *Pandinurus awalei*<sup>1</sup>, ‘awalei’ being Latin for “of Awale”.

Ahmed is rightly proud of the honor *Pandinurus awalei* represents, but is quick to point out the need to engage more Somalilanders in learning about Somaliland’s species diversity and its survival is important. To address this need, he teaches at the University of Hargeisa, give talks, and writes. His knowledge, understanding, and devotion to Somaliland’s environment are evident in all he does.

Ahmed has been, and continues to be essential to development of the Somaliland Biodiversity Foundation. He has helped Somaliland be seen as a country interested in scientific research and in developing educational resources for its youth and, by his example, *Pandinurus awalei* demonstrates the critical ingredients for leadership in any science, intellectual curiosity and a passion for the field.



Photo : F. Kovařík

<sup>1</sup>Kovařík, F., Lowe, G., & Elmi, H. S. 2020. Scorpions of the Horn of Africa (Arachnida: Scorpiones). Part XXV. Description of *Pandinurus awalei* sp. n. and the male of *Pandiborellius somalilandus* (Kovařík, 2012), with remarks on recent synonymies (Scorpionidae: Pandininae). *Euscorpius*, No. 322: 1-21.

## Featured Species

Avicennia marina  
(‘Takhay’)



Avicennia marina, or ‘takhay’ in Somali, is a species of mangrove which grows extensively on Saaded-Din Island. It is an evergreen shrub, usually 1-10 m tall, that grows on tidal mudflats. It is fast-growing and quick to regenerate.

It offers many ecological and economic benefits. It stabilizes the shores of estuaries, protects coastlines from flood damage, and serves as an important breeding ground and habitat for many marine species. It is also a source of good firewood and provides browse for camels and goats.

# Plastic pollution in Somaliland

Farhia Ahmed Ibrahim

Somaliland's marine and coastal environments face the same environmental threats found in other parts of the world: plastic pollution, oil spills, habitat conversion, sediment pollution from erosion and surface runoff and erosion, and over-fishing, much of it illegal. Of these, the most recent and most rapidly increasing is plastic pollution. Currently, at least 8 billion kg of plastic enter the world's oceans every year. At this rate, by 2050, the plastic in the oceans will outweigh the fish.

The biggest contributor to plastic pollution, both in the sea and on land, comes from soft drinks and food. Examples include packaging for crisps and candy bars, soft drink bottles, bottle caps, plastic bags, drinking straws, and rings linking beverage bottles together. Many of these are called recyclable, but the process may take 500–1000 years or more. Sometimes all that happens is that the object is ground into smaller, less visible particles.

Plastic bags (lightweight and heavyweight) are among the most lethal plastic killers of ocean animals because they are ingested, intentionally or otherwise. Turtles mistake them for their favourite food, jellyfish, but most marine organisms swallow plastic unintentionally. It is not a healthy addition to their diet.



Farhia displaying plastic excised from the gut of a fish

Where does the plastic come from? Almost all of it comes from the land, primarily from urban areas. Much of the plastic waste on Somaliland's beaches and in its marine waters comes from Hargeisa, Somaliland's capital. The town is bisected by the Maroodi Jeex seasonal watercourse, which drains through the Golis Range into the Gulf

of Aden. It takes with it many tons of plastic waste, some thrown directly into the stream bed, some washed into it during a rainfall. With time, it and the garbage in other



Plastic pollution on a beach near Berbera

wadis, is carried down to the coast. There it is washed out to sea one day, then tossed back on the beach the next day, changing a beautiful shoreline to an eyesore.

It is important to encourage people to use less plastic, for example, by using metal water bottles when traveling, and refraining from purchasing individually wrapped snacks. Banning the importation of single-use plastic bags has had some impact, reducing the number of plastic bags tangled in the branches of trees, but it must also be made easier to leave the spaces they use garbage free. One way to do this is by providing garbage containers (not plastic!) where people gather. Of course, there must also be arrangements for garbage pickup and effective garbage disposal. Posters (paper, not plastic) encouraging their use, and clean-up campaigns are effective tools for encouraging people not to litter.

Most people in Somaliland throw out little plastic compared to the rest of the world, but lack of effective garbage collection and disposal means a high proportion of the plastic used ends up under bushes, on beaches, and in the coastal waters. We Somalilanders need to focus on promoting effective garbage disposal, starting with our own practices but extending to promoting good practices in areas where people gather.

# Zeila and Tokhoshi

Ahmed Ibrahim Awale

The historic coastal town of Zeila is located in northwestern Somaliland, near the border with Djibouti. It lies in the coastal plain. The vegetation is dominated by shrubs and grasses, including *Suaeda aegyptiaca*, *Panicum turgidum*, and *Cenchrus divinus*, but it lacks trees.

Zeila is a town of great antiquity and has been mentioned by many travelers, including the anonymous Greek merchant who wrote *The Periplus of the Erythrean Sea* in the middle of the 1<sup>st</sup> century CE. Another celebrated traveller, Ibn Batuta, a Muslim Berber-Moroccan explorer, visited Zeila in 1331.

The availability of potable water has always been a major challenge for the residents of Zeila. Richard Burton, on his way to the walled city of Harar in 1855, commented:

*Their greatest hardship is the want of the pure element; the Hissi or well, is about four miles distant from the town, and all the pits within the walls supply brackish or bitter water, fit only for external use. This is probably the reason why vegetables are unknown, and why a horse, a mule, or even a dog, is not to be found in the place.*

Because the wells of Tokhoshi have always been the life line of Zeila, the Egyptian Governors of the town used to be responsible for the wells and for the transportation of their water to Zeila in skins, as explained by Walsh, the British Administrator in Somaliland from 1884-1932. Now a borehole, sunk into Tokhoshi's seasonal river bed supplies water to Zeila.

Tokhoshi is also famed for its artisanal salt works. The area around the town is dotted with thousands of shallow holes dug to the sea level. An intricate balance between the sea water inflow and surface evaporation results in the formation of salt crystals that are valued by cooks for the taste they add to food and by pastoralists as salt licks for their livestock.

Because the area is, on average, only 1 m above sea level, the effect of hurricane Sagar on the salt works was devastating, jeopardizing the sole means of livelihood of hundreds of households .

One important feature around Tokhoshi is the doum palm (*Hyphaene thebatica*), known in Somali as 'Bahaash'. It has been used as a source of food and for matting, basket

making, rope and string making, and thatch. Sadly, its numbers are declining. Other species once present in the area have already disappeared. They include *Tamarix aphylla* ('dhuur'), which used to be abundant in the wadi of Tokhoshi and *Lawsonia inermis* ('wild' henna'), another species Burton mentions as growing in the seasonal watercourse.

The improved access to drinking water in Zeila not only makes life easier for its residents, it creates an environment conducive to tree planting. Recently, Candlelight NGO (candlelightsom.org) distributed 250 *Conocarpus lancifolius* ('Dhamas') seedlings in Zeila to help 'green' the town. The organization is also working on establishing a small nursery for raising shade and ornamental species such as *Delonix regina* and *Bougainvillea*, and on extending the mangrove stands in the inter-tidal zone. More recently, The Municipality of Zeila and the Regional Office of the Ministry of Environment, have made the tree planting campaign a priority issue, bringing in more seedlings for planting in Zeila.



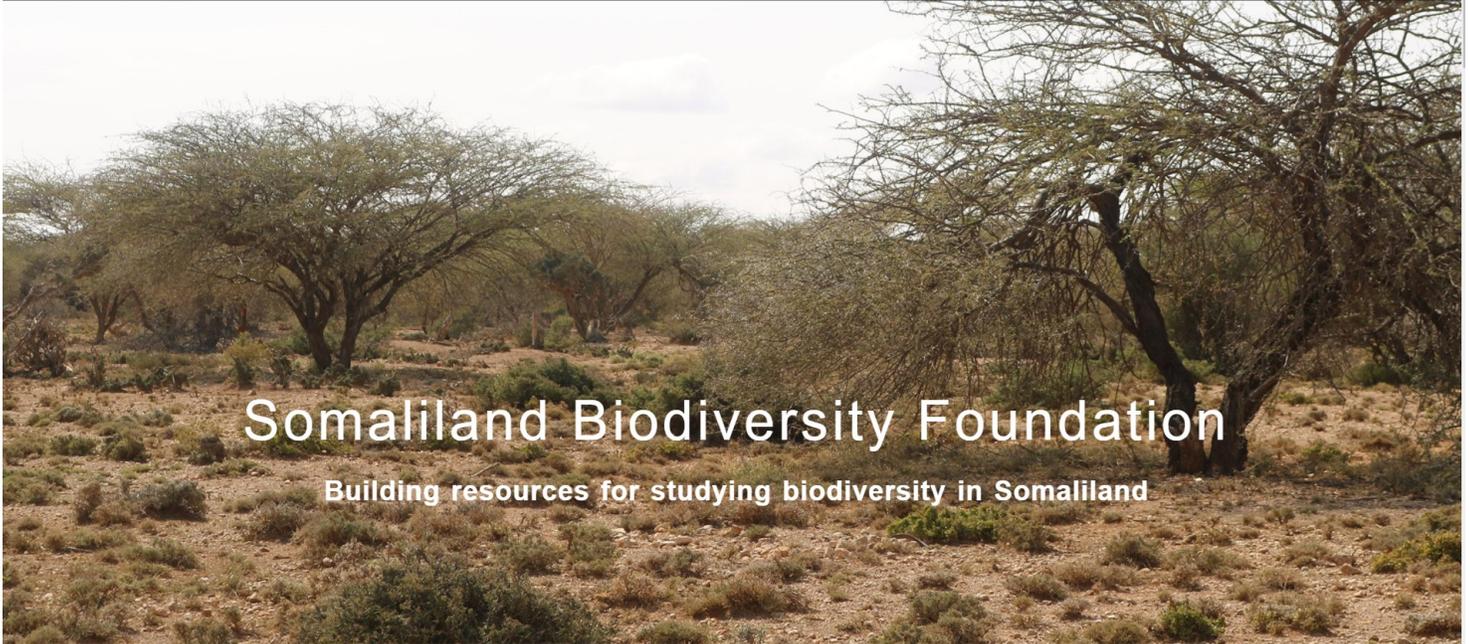
*Suaeda aegyptiaca* in Zeila with a tomb in the background  
Photo: Ahmed Awale

Burton, R.F. 1856. First footsteps in East Africa. Tylston and Edwards .

Walsh, L.P. 1932. Under the Flag: And Somali Coast Stories. Melrose Publishers.

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## Overhauling the Foundation's Website

Mary Barkworth

One feature is the search function. Click the magnifying glass and enter a word or phrase to search for. The site will return a list of pages and newsletters in which the word/phrase is used. This search tool plus another new feature, dropdown menus, make it easier to locate resources within the site. Ali has also improved the site's visibility to search engines, adding the many keywords and tags this requires.

"What we do" contains short descriptions of the Foundation's current activities plus a few we hope to develop. For now, our focus is on developing information about Laas Geel's biodiversity and materials for use in teaching, including outlines of teaching modules for the Plant Taxonomy course Faisal will be teaching at the University of Hargeisa. Each teaching unit will include an outline of the topic, accessible references, and suggested activities. They will, as far as possible, draw on Somaliland plants for examples.

The "For you" tab includes links to downloadable posters, a description of the web sites being used to share information (which will be written after the Newsletter has been sent out), and a searchable database of references relating to Somaliland's biodiversity and history. We thank Ahmed and Tomáš Mazuch, both of whom have been collecting articles and books about the book for several

decades, for sharing information from their libraries. Some of the references cannot be downloaded but, knowing something exists is the first step to finding it.

Ali has also added another database, one that will be linked to the "News" page. It will show Somaliland's "new" species. Some will be species that have only been recently described, such as *Panurinus awalei*. Others will be species previously described but not previously documented from Somaliland. Having the database will make it easier to prepare the annual report as well as highlight an important reason for the Foundation's existence, encouraging interest in Somaliland's plants and animals. It is hard to preserve species that are not known to exist.

The databases will grow slowly but, once the online forms for data entry are completed, we shall be seeking help in developing them. At that point, we shall activate the "login" button, but only those authorized to enter data will be able to log in. Others should submit using the "Contact Us" page.

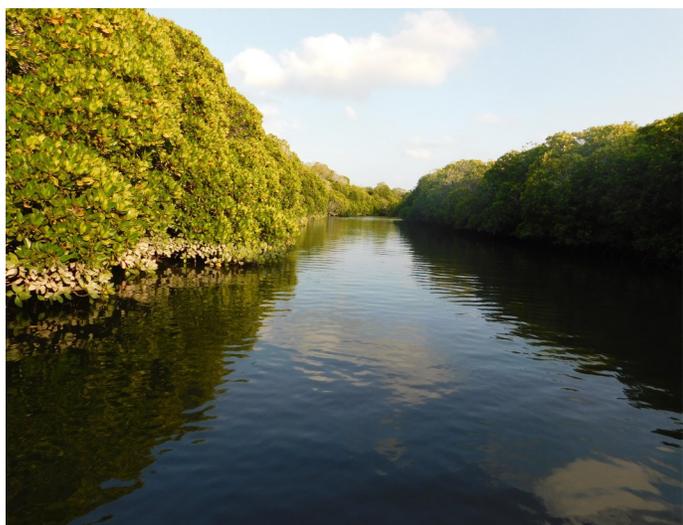
The next changes to the web site will reflect the need to develop the Plant Taxonomy course. We had understood the date to be September, so a lot of progress needs to be made, starting immediately.

# Major Museum Activities in 2020

Faisal Jama Gelle

## Collecting

As with most biodiversity museums, the top priority for SBF's Biodiversity Museum in 2020 was collecting and studying more plants. Last year, its collecting activities started in January with a visit to Laas Geel by Ahmed Awale, Helen Pickering, and me to Laas Geel. Our goal was to add to our knowledge of the area's diversity and take advantage of Helen's abilities as a photographer to aid us in preparing



Saad-ed-Din Island

Photo: Ahmed Awale

one or more posters relating to the plants of the area.

After the Laas Geel trip, we took one through western Somaliland. Our destination was the historic port and town of Zeila and the famed island of Saad-ed-Din, approximately 16 kms away from the coast. The road from Hargeisa and Zeila is biogeographically interesting, taking travelers from the upland areas of Oogo and descending to the Guban lowland and passing through many changes in vegetation. We passed through Agabar village, where the landscape is dominated by the invasive *Prosopis juliflora* ('Garanwaa'). The tiny dikdik antelope (*Madoqua sp.*) was common everywhere, but we also saw a herd of Geranuk (*Gazella walleri*). On our way to the coast, we made several stops to collect specimens of species not yet in the Museum. These included *Dobera glabra* ('Garas'), *Delonix regia* (*Lebi*), *Euphorbia godana*, and others.

The vegetation in the sub-coastal and coastal areas was dominated by *Balanites rotundifolia* ('Kulan'), *Boscia minimifolia* ('Maygaag'), *Balanites aegyptiaca* (*Quud*), *Leptadenia pyrotechnica* (*Moroh*), *Cenchrus divisus* [= *Pennisetum dichotomum*, =*Pennisetum divisum*] (*Darif*), and *Panicum turgidum* (*Dungaare*) and others. The area near Zeila hosts salt-tolerant plants such as *Suaeda monoica* [often called *Suaeda fruticosa* in the past] ('Xudhuun').

Saad-ed-Din island is uninhabited but frequented by artisanal fishermen. The grass and shrub vegetation is more or less the same as on the inland plains, except that the tidal and subtidal areas are dominated by two mangrove species namely, *Avicennia marina* (*Takhay*) and *Bruguiera gymnorrhiza* ('Qandal').

We made more collections on the trip back to Hargeisa through Borama. Two notable collections were of *Mimusops angel* (*Canjeel*) and *Dracaena schizantha* ("Mooli") which had found refuge over a grave. *Mimusops angel* is recorded in the *Flora of Somalia* as being known only in N3 [Northeastern Somalia]. Now it can be added to the list of species known from Somaliland. *Dracaena ombet* is one of



*Dracaena ombet*

Photo: Ahmed Awale

Somaliland's many endangered species. Our collection was limited to a few leaves, enough to document its presence without endangering its ability to survive.

In September, Ahmed and I made another trip, this time to the Marso area, located to the west of Sheikh town. We

## Major Museum Activities

(contd. From Page 5)

went there via Gacan Libaah, the Garbo Kayle cave near Gacan Libaah, Iskudar, Halo permanent stream, then through Qoldhob pass, the only vehicle access road to Marso ledge which leads to Kal-waraabe, and finally Kulmiye village. We made several more collections, including *Aloe jucunda*, but Ahmed was hoping to find *Cyanotis somaliensis* ('Baar'), which was first collected from the area in 1895. The area's habitat looks as it did at that time, but we did not succeed in finding the species. It may still be there but, in the short time available to us, we were unable to find it.

Garbo Kayle rock shelter has interesting rock paintings but, unlike the caves at Laas Geel, humans have used the caves at Garbo Kayle for shelter, and soot from their fires now makes it difficult to see the paintings. *Prehistoric Paintings in British Somaliland* M. Burkitt & P.E. Glover (1946), shows tracings made by Glover and his wife of some of the paintings. They include representations of humans and lizards and lions and plus some animals with stylized horns. Some of the pictures in the article include a fig tree that was hanging over the cliff in 1946, when the picture was taken. We were glad to see it is still thriving.

At Halo water point, we succeeded in collecting specimens from several plants we had not collected previously. They included *Pavetta venenata* ('Ruqumbaa'), *Ficus palmata* ('Qulcis'), and *Saccharum ravennae* (Alaalo). The place is famed for its permanent spring water and has been an important destination for pastoralists and their livestock. It is visited less frequently nowadays because of the establishment of water points in the form of earthen water reservoirs (Balleh) and in-ground cemented water tanks (Berkad) in the waterless plateau south of the Golis Mountains.

Road access to the area was difficult, bumpy and narrow, but the landscape was rewarding, displaying a diversity of beautiful species in addition to the three dominant species: *Juniperus procera* (Dayib), *Buxus hildebrandtii* (Dhosoq), and *Dodonaea viscosa* (Xayramad). The spectacular landscape brought new energy and refreshment to our tired souls.

The escarpment just a couple of kilometers north of Kulmiye village afforded a panoramic view of the Guban low land to the North with Berbera port, about 40 km away, in the distance. We collected *Commelina petersii* (Baar

*Biyood*), *Olea europaea subsp. africana* (Weger), *Tarchonanthus camphoratus* (Adaadi) plus several other species from the escarpment.

In September, Ahmed and I made one more field trip, this time to Jarrato pass, on the road between Adadlay and Mandhera. Our purpose was to collect detailed data and more specimens of *Anacampseros* L., which Ahmed saw during one of his earlier trips to the area. We collected a living plant which is now growing in the succulent garden of the Biodiversity Museum. This will allow us to monitor its growth and find out whether it is an undescribed species or another locality for *A. vespertina*, a species currently known from only two localities, one from near Dacar budhuq, the other in



*Anacampseros*

Photo: Ahmed Awale

northeast Somalia.

These field trips added seventy-four more specimens to the herbarium. We collected a duplicate of each specimen in case it becomes necessary to send it to an expert elsewhere in exchange for identification. The additional specimens, plus others made by Ahmed Ahmed on his travels around Somaliland all enrich the Biodiversity Museum which grew by about 100 herbarium specimens and ten living plants. Equally importantly, we learned

## Major Museum activities

(contd. From

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more about Somaliland's plant diversity, identifying some questions, such as whether *Dracaena* includes two variants that differ in their leaf width, and perhaps other features or only one, as treated in the *Flora of Somalia*. We look forward to sharing our knowledge and following up on the questions we identified in future.

## Other news from the museum

### Extending the garden

The fence in front of the museum has been extended to the far end of the building. This expansion makes it possible for the garden to accommodate more plants, increasing its



Extension of SBF succulent garden

Photo: Faisal Jama

ability to serve as an ex-situ conservation site and enabling close observation of the species being cultivated.

### Visit to Djibouti Medicinal Herbarium

Dr. Fatouma Abdul-latif, Director of the Center of Research and Studies on Medicinal Plants of Djibouti, invited me to represent SBF at a two-day conference in Djibouti about "Studies and research of medicine and medicinal plants". Posters, presentations and discussions relating to medicinal plants dominated the conference, which was held at the 'Aqalka Ummadda'. SBF presented a poster on "Documenting the biodiversity of Laas Geel".

After the conference, I visited the Center of Research and Studies on Medicinal Plants of Djibouti and presented a copy of "Introduction to Plants in Central Somaliland" to



Conference posters on display

Photo: Faisal Jama

Dr. Fatouma Abdulladif and she gave me a copy of her book, '*Plantes médicinales de la République de Djibouti*', for the Somaliland Biodiversity Foundation. Because there is great similarity between the floras of Djibouti and Somaliland, we are looking forward to increasing the collaboration between our two institutions, particularly in areas relating to conservation and biodiversity conservation.



Dr. Fatouma Abdul-latif and Faisal Jama exchanging books.

### Extending the herbarium network

In summer, 2021, Mary and I reached out to Dr. Kordofani Maha Ahmed Yousif (University of Khartoum), Dr. Fatouma Mohamed Abdoul-Latif (National Herbarium of Djibouti), Dr. Sileshi Nemomissa (National Herbarium of Ethiopia), Abdinasir Aweys (Herbarium of the Somali Region Pastoral and Agro-pastoral Research Institute), Dr. Mutuku Musili (National Museums of Kenya), and Dr. Patrick Mutiso

## Extending the herbarium network

(contd. From Page 7)

(University of Nairobi) inviting them to join OpenHerbarium so it could become more useful throughout Northeast Africa by using it share their specimen records. All responded positively. Most of these herbaria have already databased many of their records, but none are, as yet, are sharing them on the web. All agreed doing so would be useful because it would provide a much clearer picture of the distribution of plant species in Northeast Africa than is currently possible IN 2021, we shall also attempt to include a herbarium from Egypt.

We made little progress because covid-restrictions meant most people had to work from home where they had poor internet access. We tried using cell phones, but that too was difficult. More seriously, without access to their herbaria, the existing data were inaccessible, making it impossible to use them to establish effective procedures for data sharing. This meant we could not demonstrate the potential benefits the proposed collaboration within our own insitutions, nor to potential funding sources.

We are renewing our efforts this spring. Our first goal will be to obtain support for an in-person workshop in Hargeisa. This would enable all involved to learn how to use OpenHerbarium and get to know each other. In the meantime, Helen Pickering and Mary have posted checklists for Sudan and South Sudan, based on Darbyshire et al. (2015) in *The Plants of Sudan and South Sudan: an annotated checklist* and of medicinal species included in *Plantes médicinales de la République de Djibouti* by M.Abdoul-latif et al. (2018) to OpenHerbarium (see under “Flora projects”).



## Somaliland’s mammals: a new checklist

In late 2020, T. Mazuch, A. Barre, and A. Awale compiled a checklist of terrestrial mammals known from Somaliland. It is based on multiple literature sources and is the first such compilation to have been made in several decades. Mary has since posted the list of species to OpenZooMuseum (look under the misnamed “Flora Checklists” tab)..She added a few species often overlooked in such checklists, humans and their livestock. Ignoring such species is to ignore Somaliland’s dominant animal species.

This spring, Faisal and Ahmed will be inviting students at the University of Hargeisa to enhance the checklist’s value by adding images and image-vouchered records to OpenZooMuseum. Adding images will make the checklist more useful for teaching; adding image-based records will contribute useful data on where different species can be seen in Somaliland. Being involved in these processes will help students become familiar with ways of building permanent accessible data resources concerning Somaliland’s biodiversity.



*Ammodorcas clarkei*

Drawing by Joseph Smit



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