

Somaliland Biodiversity Foundation

Looking north from Gacan Libaax, 2017 May 15

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May 2017 Newsletter

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Restoring Gacan Libaax

Gacan Libaax [= Ga’an Libah] is a peak about 2000m high in the Golis Range of northern Somaliland. The name means “Lion’s paw”. The area used to be one of the favorite haunts of lions. The British made it a forest reserve in 1952 and took steps to curb its degradation. Subsequent Somali governments maintained these activities until 1988 when civil war engulfed the country, causing disruption of these activities and reversing the gains that had been made.



Old British building

Today Somaliland’s Ministry of Environment and Rural Development (MoERD), and Candlelight for Environment, Education and Health (Candlelight) are collaborating in maintaining the area’s beauty by resuming establishment of soil bunds, reseeded, tree planting, general conservation work, and community



Research and housing center.

training activities ([Awale et al. 2005](#)). There is housing for visiting researchers and students and an office building is nearly completed. These activities, plus bee-keeping and fibre production, offer new sources of income while aiding restoration



More visitor housing.

of the area’s rich biodiversity. There are no plans to restore lions to the area; the local people are probably glad.

Rains in early May created a rare sight: large pools of water on the sub-coastal Hegebo mountains north of the escarpment (see image at top of page). There were also many plants in flower. Noteworthy species included *Cadia purpurea*, “Salalmac”, *Hydnora johannis*, “Like”, a parasitic plant, and *Aloe grisea*.

Rain will help all the vegetation recover but its ability to do so is limited by the many grazing animals around. Reserves help make people aware of what there is to lose but it is imperative to integrate local people into all aspects of their establishment and maintenance as has been done at Gacan Libaax (Awale et al. 2005). The Somaliland Biodiversity Foundation is looking into how it can assist in this regard.

Featured Species

Cadia purpurea or **Salalmac**



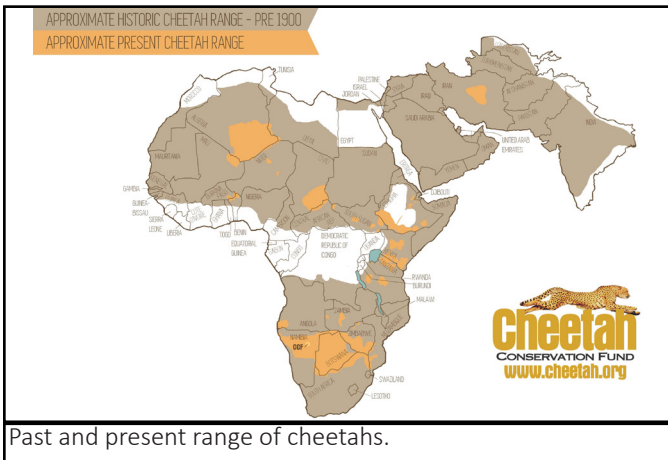
Cadia purpurea or **Salalmac** is a common species in the woodlands on Gacan Libaax. It was in full flower in May. It would make a great garden plant, particularly if a cultivar that retained its petals longer were developed.



Left to right: *Aloe grisea*, the nursery at Gacan Libaax, *Hydnora johannis*.

Cheetahs - in danger of being lost

Cheetahs (*Acinonyx jubatus*) are the fastest mammals on earth, being able to reach speeds of 110 km/h, but they are losing the race for survival. In the 1900s, there were 100,000 wild cheetahs; today there are only about 7,100.



Cheetahs require vast expanses of land with suitable prey, water, and cover to survive. Destruction, fragmentation, and degradation of wild lands all reduce their potential range. Areas that once supported thousands of cheetahs now struggle to support just a handful. In addition, cheetahs are often killed as pests or for their skins and body parts. Another threat is that young cheetahs, having a gentle disposition, may be stolen from their mothers to be sold, illegally, as pets.

Unfortunately, Somaliland is a major source of cheetah cubs. Research by the Cheetah Conservation Fund (CCF) indicates that, during each of the last 12 years, about 300 cheetah cubs per year were smuggled through Somaliland, primarily to

the pet trade in the Arabian Peninsula where having a cheetah cub is a status symbol. Many more died before they could be sold. The taking of so many cubs per year is a major threat because the known cheetah population in the primary source countries, Ethiopia and northern Kenya, is about 300 adults. There is very little information about the abundance of cheetahs in Somaliland.

Trade in wild cheetahs has been banned since 1975 by the Convention on International Trade of Endangered Species (CITES) in all but three countries (Namibia, Zimbabwe and Botswana), where strict quotas have been established. Despite that, the illegal trade in cheetahs continues.



Cheetah cubs rescued in 2017.



Participants in the April meeting. Left to right: Bertrand Lafrance, DECAN Wildlife Refuge, Djibouti; Günther Wirth, GIZ's Sustainable Land Management, Somaliland; Hon. Minister Shukri Haji Ismail; Patricia Tricorache, CCF; and Eng. Mohamed Elmi Hussein, MoERD.

To address this problem, In April 2017, the Minister of Environment and Rural Development (MoERD), Shukri Haji Ismail, convened a meeting of ministry representatives and representatives of other entities interested in wildlife conservation, including Patricia Tricorache of CCF, to discuss how to decrease trafficking in Somaliland. The participants agreed on a set of strategies to achieve this goal, for example: raising awareness of the impacts of wildlife trafficking on communities; improving the education and training of enforcement officers in the relevant laws, wildlife recognition, and care of rescued animals; and increasing enforcement collaboration with Ethiopia and Djibouti, Somaliland's neighbours. They also made plans for establishing a collaboration between MoERD and other organizations, such as Colorado State University and CCF, to survey Somaliland's cheetah populations to find out how many there are currently in the country and start monitoring programs.

Somaliland has lost several iconic mammals in the last 150 years (e.g., lions, elephants, rhinoceroses). Why would losing one more hurt? Part of the reason is that it would represent loss of yet another part of the country's heritage but loss of top predators also has a broad impact on ecosystems throughout their range. Cheetahs, like lions, are carnivores that feed on other animals, including many herbivores that eat the vegetation. Loss of vegetation accelerates desertification. Of course, many other factors are contributing to Somaliland's desertification but losing cheetahs would mean losing yet another iconic mammal as well as contributing to desertification. It would also affect local communities because it means a loss of their natural resources and reduces their potential for ecotourism. And it is illegal.

To learn more about the Cheetah Conservation Fund, go to the [Fund's website](http://www.cheetah.org).

Biodiversity Sciences Today - a workshop

On May 22-24, the Somaliland Biodiversity Foundation (SBF) and University of Hargeisa (UoH) co-sponsored a 3-day workshop on “Biodiversity Sciences Today” at the University of Hargeisa. The participants ranged from students in their final year of the Wildlife Sciences program at UoH to individuals with an M.Sc. in fields relating to resource management or agriculture and several years of related experience. The workshop was led by Mary Barkworth, a retired plant taxonomist, SBF board member and manager of two web sites designed for sharing information about species occurrences (OpenHerbarium.org and OpenZooMuseum.org); Garrett Billings, a graduate of Utah State University with considerable experience in plant identification and vegetation mapping in the western U.S.; and Helen Pickering, who works as a volunteer at the Royal Botanic Gardens, Kew, and has co-authored several field guides to plants in different parts of Africa and Oman.

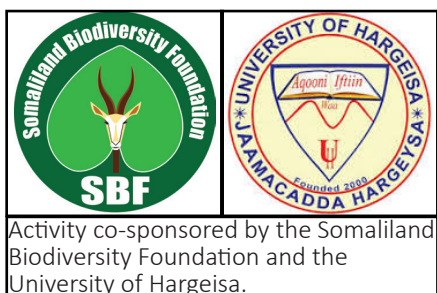
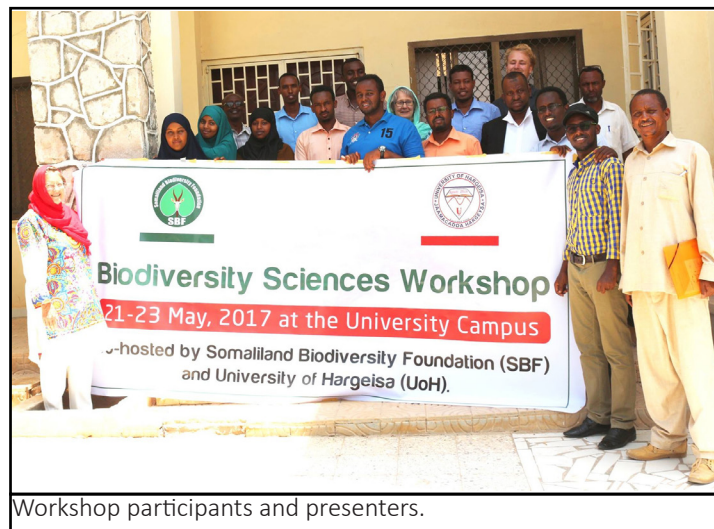
The workshop was opened by Dr. Mohamud Yussuf Muse, President of the University of Hargeisa, who welcomed the participants and presenters on behalf of the university. While highlighting the uniqueness of the training, he also stressed on the importance of biodiversity sciences and its relevance to our context, for using in the maintenance of the rich diversity which is under the threat of multifarious anthropogenic challenges. He also encouraged the participants in their full participation in the discussions in order to maximize the knowledge to be gained from the workshop.

In the first presentation it was explained that the phrase “biodiversity sciences” encompasses what used to be called taxonomy and ecology but also fields such as geography, geographic information systems, informatics, and computer sciences, disciplines that are transforming our ability to share information and learn about the species that make up the world’s ecosystems. It is this ability to rapidly share and re-use information that distinguishes the world of biodiversity sciences today from the recent past. It requires, however, greater adherence to standards than in the past. Nevertheless, despite all that is new, the foundation of biodiversity sciences is understanding the diversity of organisms that make up our world, in other words, systematics and taxonomy.

Comparison of past and present practices in biodiversity museums	
PAST	PRESENT
Researcher visits museum	Museum enters label/ collection data into a database.
Researcher copies label/ catalog data into notebook	Museum publishes data to web in standardized form.
Researcher publishes paper	Anyone can download data for reuse (with acknowledgment)
Others must copy data for themselves	

The participants were introduced to, or reminded of, terms used to describe plants so they would be better able to verify identifications and shown how to prepare and document plant specimens. They were also introduced to the use of GPS units and establishing plots for one kind of vegetation analysis. Helen used photographs she had taken to demonstrate what makes a good plant picture and also provided a few samples of not so good photographs. The initial plan called for having the participants upload data from one of their own collections, with an image, to OpenHerbarium but time ran out.

The participants were also asked to suggest how the workshop could be improved. Their comments were very helpful and will guide the planning of future workshops. For example, introductory materials will be made available on the web ahead of time. These resources will be free to anyone interested and provided in both Somali and English. This will increase their value well beyond any workshop. Participants will also be asked to provide a picture of themselves and a short (no more than half a page) summary, in English, of their background and interests. Alternatively, they could provide a short video that accomplishes the same goal — helping presenters get to know the participants.



Activity co-sponsored by the Somaliland Biodiversity Foundation and the University of Hargeisa.

Workshop participants and presenters.

Sisal - a new income source

Somali women traditionally made rope and twine using fibers of two native plant species, *Sansevieria ehrenbergii* and *S. forskaoiliana* [= *S. abyssinnica*], “Xaskul” and “Xig”, respectively, in Somali. These are both slow growing species that rarely form dense stands. “Sisal”, *Agave sisalana*, is a larger, faster growing Central American species that is an excellent source of fiber for rope and mats. It was introduced to Africa by Germany in 1893 and, by 1906, 887 metric tons of fiber per year were being exported from German East Africa (Anonymous 1908). It was introduced to various locations in Somaliland in the 1950s with the greatest concentration being in Mandhera, an area northwest of the Gacan Libaax forest reserve.



Women from Go'da Weyn working with sisal.

In 2016, Candlelight for Environment, Education and Health, with financial support from the International Solidarity Foundation of Finland, initiated a project on sisal production, processing, and value addition in Go'da Weyn and Go'da Yar, two villages near Gacan Libaax. Project activities included providing decorticating machines to make it easier to extract the fibre, twining machines for producing twine of differing thicknesses, and training in the production of door mats, handbags, and ropes. To ensure adequate supplies of sisal, thousands of plants have been raised and distributed from a local nursery.

As a result of this project, families in the two villages have a new source of income and the demand placed on the local, slow growing native species has been greatly reduced. Sisal plants are also used to form very effective living fences and their stems are used in construction. Because of its long flowering time, sisal is also good for honey production although some consider the honey to have an unpleasant flavor. Wikipedia also lists other potential uses which could be developed if there is a demand.

A concern with any introduced species is its potential weediness. *Agave sisalana* is reproducing and becoming established but it is relatively easy to control. It is also effective in reducing gullying. Nevertheless, its spread should be monitored to make sure that it does not become a problem.



A mature sisal plantation in Kenya.

It would also be interesting to follow up on a statement by Fitzpatrick (1910) that “lengthy experiments proved that the wild growth [of *Sansevera ehrenbergii*] can be largely increased by cultivation”. In the meantime, *Agave sisalana* offers a much needed source of income to people living in poverty with potential for further development and is helping protect native species from over use while reducing gulleying.



Use of sisal stems in construction

Additional References

- Anonymous 1908. Cultivation of sisal hemp in German East Africa. Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew) 1908:300-302.
- Awale, A.I., M.E. Killeh, and A.A. Mohamed. 2005. [Integrated community-based resource management in the grazing lands of Ga'an libah, Somaliland: case study](#). Report by Candlelight for Health, Education and Environment to the Food and Agricultural Organization.
- Barnett, David T. & Thomas J. Stohlgren. 2003. A nested-intensity design for surveying plant diversity. *Biodiversity and Conservation* 12: 255–278.
- Fitzpatrick 1910. Letter to the editor. *Spectator* 1910 May 28, p. 14. <http://archive.spectator.co.uk/article/28th-may-1910/14/the-e-pacuation-of-somaliland-to-m-editor-of-ter>
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Gacan Libaax Field Trip

In May 2017, the Somaliland Biodiversity Foundation (SBF) and the University of Hargeisa sponsored a field trip to Gacan. There were seven participants: Abdikarim A. Ismail, Umulkhair M. Deria, Abdimajid Ali Elmi, seniors in the Environmental Science Program at the University of Hargeisa; Garrett Billings, Helen Pickering, Ahmed Awale and Mary Barkworth of SBF. Their goals were to increase the number of plant species known from Gacan Libaax while gaining experience in making plant collections and conducting vegetation surveys and start development of new resources for learning about Somaliland's plant diversity.



One of the as yet unidentified plants at Gacan Libaax

On days 1 and 2, the focus was on making well-documented herbarium specimens. The specimens were prepared by the students after being photographed by Helen and/or Garrett. The best of their images will be made available via [OpenHerbarium](#). Ahmed, Helen, and Bixi (see [Newsletter 2. p. 2](#)) could identify some specimens on the spot but several they could not. The biggest problem in many areas was that the plants had been grazed almost to ground level.

We minimized how much we took so as not to add too greatly to the damage. Duplicates of all the specimens were prepared for Helen to take back to Kew which has many staff members with extensive experience in Africa who have agreed to help identify them.

On day 3, Garrett Billings introduced the participants to a method for assessing and monitoring plant diversity and cover. The method, Intensive Modified Whittaker, ([Barnett & Stohlgren 2003](#)), is relatively easy to explain but marking the corner of a plot that falls in dense shrubs or among acacias requires determination. The other problem was making a species list for the plots, including the plants not in flower. At that point, Ahmed asked for assistance from local staff of Candlelight for Environment, Education and Health (Candlelight) and the Ministry of Environment and Rural Development (MoERD). The value of their knowledge quickly became evident, as they were able to give a Somali name for most species.



Back from the field. Garrett Billings with plant presses; Helen in the background.

We were fortunate to be at Gacan Libaax after rain. It made the impact of the rock barriers clear. There was more vegetative growth behind them, more plants in the crevices between their rocks, and less gullying downstream. We also saw the extreme overgrazing and starving animals that reflect the many years of drought that Somaliland has experienced recently. Unfortunately, for many young people such overgrazing seems the norm because it has been that way all their lives.

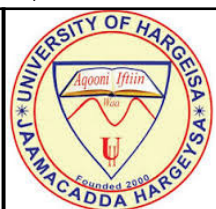
The number of plant species known from Gacan Libaax was increased from 52 to 61 by the fieldtrip. It, [and the corresponding list for animals](#), were increased further by addition of taxa mentioned in Awale et al. (2005). The list of plant species will increase further when the unknowns are identified but generating a good list, one that is documented by specimens, will require more work. A possibility, if funding can be obtained, would be for SBF, the Biodiversity Museum, and MoERD to collaborate in training local staff in making herbarium specimens with Somali names and label information in Somali. These labels would be used to prepare labels in English and, after appropriate identification, the scientific name. Information from the English label would be shared via OpenHerbarium. This will help integrate the local officers' knowledge with that in the *Flora of Somalia* and other scientific publications while ensuring that the appropriate scientific name is associated with a particular Somali name. Having specimens with labels in Somali and English at Gacan Libaax will also assist in outreach to local people and school groups.



Preparing specimens and entering data for use in generating labels. From left to right Garrett Billings, Mary Barkworth, Addimajid A. Elmi, Abdikarim A. Ismail, Umulkhair M. Deria



One of the many rock barriers constructed by local staff and visiting students to reduce soil erosion.

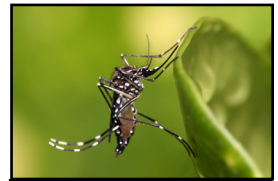


Activity co-sponsored by the Somaliland Biodiversity Foundation and the University of Hargeisa.

The list of species from Gacan Libaax identified so far can be seen by going to [OpenHerbarium](#) (<http://openherbarium.org>) and then selecting "Flora Projects", "Somaliland", "Plants of Gacan Libaax". To see the list with images, select "show as images" in the box on the top right of the screen followed by "Rebuild list".

Insects - they are everywhere (almost)

Say “insect” and people will think of different kinds of insect. Some may think first of mosquitoes, others of ants and still others of bees; some may think of how insects can damage plants, others of insects as pollinators, and still others of insects as a source of food. This diversity of reactions is not surprising because scientists estimate there are about 9 million insect species, far more than any other animal group. They exist almost everywhere, often in great abundance, and are an important part of almost all ecosystems. The two areas where they are not abundant are oceans, where their cousins the crustaceans are dominant, and Antarctica, which has only one insect species, *Belgica antarctica* which, at 2-6 mm long, is the largest completely terrestrial animal on the continent. Elsewhere, insects are both abundant and diverse.



Aedes aegypti (mosquito). Image by Muhammad Mahdi Karim



Apis mellifera (honey bee)

Pollination is probably the most appreciated role of insects because without pollination fruits such as papayas, watermelons, and mangoes would not develop. The shapes, color, size, and scent of flowers make them memorable to potential pollinators. This is important because, for successful pollination, flowers need pollen from another flower of the same species so pollinators must be able to recognize flowers. If an insect remembers that a particular kind of flower had good, accessible nectar, it will seek other flowers of the same kind as it continues foraging. Size and shape also dictate which insects can be a pollinator: small flowers require small pollinators.

Farmers can use knowledge of pollinators to increase their yields. Some pollinators, like the European honey bee, like hives; others, including many bees, prefer a hole in the ground or an open space in a pile of wood. No pollinator wants to travel more than necessary for food and pollen so by providing pollinator housing near an orchard, farmers can increase their yields. But first they need to find out what the best pollinators are for their crops.

Butterflies, dragonflies, and wasps are beautiful and conspicuous flying insects but they differ greatly in their interactions with other organisms. Adult butterflies are pollinators that visit flowers for their nectar. Adult dragonflies are ferocious predators, grabbing other insects, such as mosquitoes and gnats, out of the air and eating them. Adult wasps eat a wide range of invertebrates such as other insects and spiders. The larvae of butterflies and dragonflies are herbivores, eating plants. Many butterfly larvae like the same plants as humans so they count as agricultural pests but dragonfly larvae eat aquatic plants that are not important to humans. Most wasps have parasitic larvae. The eggs are laid in other invertebrates or in their larvae which they eat as they develop. Encouraging wasps that lay their eggs in insect pests is often an effective and inexpensive means of pest control.

Ground-dwelling insects are important to soil health. Their tunnels allow air and water to penetrate the soil. Both are essential for the plant roots and fungal hyphae that live below ground and for the insects themselves. Insects also make the soil more fertile by taking above ground organic matter below ground and depositing their feces in the tunnels they form.



Mastotermes darwiniensis, an Australian termite

Termites, which are more closely related to cockroaches than ants, are ground-dwelling insects although it is often the above ground portion of their nests, termite mounds, that are best known. They form conspicuous parts of the landscape in many parts of the world, including Somaliland, and often indicate the presence of below ground moisture. All termites eat wood, digesting it with the aid of microorganisms that live in their gut. Some termites live in, and eat, dried wood rather than mounds. They are helpful when the dead wood is a fallen tree or branch but not when the dead wood is part of a building.



A dung beetle rolling a ball of dung.

Dung beetles are also important to soil health. Most of them eat dung, processing it into compounds that plants and fungi can use. Some dung beetles roll dung into balls which they bury in their nests; others simply build their nests in or below dung. One problem for the rollers is finding their way back to their nest. Some navigate by the sun, others by the stars. Dung beetles are very fussy about the kind of dung they eat, a fact that led Australia to introduce foreign dung beetles to cope with the dung of sheep, cattle, and horses. It has been one of the more successful experiences in biological control through introduction of a non-native organism.

Want to learn more about insects? Here are two places to start:

Martins, Dino. 2014. [Our friends the pollinators: a handbook of pollinator diversity and conservation in East Africa](#). Can be downloaded for free. TEDTalks. Multiple dates. Playlist (11 talks): [Insects are awesome](#).

Frankincense on CNN

On April 21st, the US news channel CNN aired a documentary on Inside Africa that focused on the Somaliland frankincense trade. The documentary follows the research and advocacy work being done by **Anjanette DeCarlo** and her team members, including **Stephen Johnson**, **Ahmed Derei Elmi**, and **Abdinasir Ahmed Jama**.

The documentary shows the beauty of the Cal Madow mountains, and the complexity of the issues facing the frankincense economy. Local people have relied upon and taken care of the trees for thousands of years, passing their trees and their trade from father to son. However, increasing demand for frankincense and the globalization of the trade is putting mounting pressure on the trees. This is leading to overharvesting and degradation in some areas of the frankincense forests, threatening the industry and the livelihoods of thousands of people. Luckily, there is a growing coalition working to protect the frankincense industry.

The documentary can be watched online on the CNN Inside Africa website, by clicking on the links below:

Part 1: [Introduction](#).

Part 2: [Somaliland's role in the global frankincense trade](#).

Part 3. [Tracking down the frankincense tree](#).

Rock Art at Laas Geel



Laas Geel has what have been described as some of the best preserved and oldest rock art paintings in Africa. Before arriving in Somaliland, we (Helen Pickering, Garrett Billings, and Mary Barkworth) had decided we would really like to see them and fixed on Friday, May 11, the day after we arrived, as the only possible day. We should have told Ahmed Awale ahead of time. He met us at the hotel, helped us deliver equipment to the Biodiversity Museum but, on hearing of our desire, explained that we needed a permit, a police escort, and a 4-wheel drive vehicle. We thought all was lost but then Ahmed swung into action and the next day saw all four of us driving to Laas Geel together with the police escort required when foreigners are present.

The rock art is fantastic. The colors are incredibly vivid and the pictures very clear. The caves and their artwork were brought to the world's attention by the French archaeologist Xavier Guthertz of Paul Valery University who first explored the caves in December, 2002 and came back a year later for a detailed examination. Local people were aware of the paintings but considered the caves to be inhabited by evil spirits so avoided them. This helped preserve the paintings from damage other than that caused by exposure to weather. Most of the paintings are, however, protected from weathering by the rock's overhang and by the area's very dry climate.



"Laas Geel" means "watering place for camels". That, and the two dry streams that come together in front of the cave complex indicate that at one time the area was wetter than now. It must have been even wetter when the paintings were made because many of them are of cattle. Other animals depicted include birds, antelopes, monkeys, and giraffes all suggesting a wetter climate than has been seen in the region for some time. Today, the area is very sparsely inhabited and the only large animals we saw were goats.

How old are the paintings? Estimates based on pigment flakes suggest 5500-4500 years old. Other estimates are that they may be up to 11,000 years old. By way of comparison, the Nile valley was settled about 9,000 years ago and the kingdoms of upper and lower Egypt were united about 5,000 years ago.

It is not just the rock art that was impressive. The views from the cave are amazing. Our visit was simply a sight-seeing trip but when a bunch of botanists travel to a place they have never seen before, stops to collect and photograph plants along the way are inevitable.



The site is definitely worth a visit but remember to make plans ahead of time. Most hotels can probably arrange for the necessary permit, driver, vehicle, and police escort but 48 hours advance notice, or longer, is advisable.

The information above comes from a display at Laas Geel and the web, primarily [Cyark](#) and [Ancient Origins](#). The images are from Helen Pickering and Garrett Billings.

Other Foundation News

Several things have happened since the last newsletter. One was the appointment of Warsame M. Ahmed, Director of Research and Community Service of the University of Hargeisa, to the Somaliland Biodiversity Foundation's Board as the university's representative. His presence on the board will help improve the interaction between UoH and SBF.



Helen Pickering, trapped by a "wait-a-bit" thorn bush.

SBF has also benefited from the involvement of Helen Pickering, a volunteer at the Royal Botanic Gardens, Kew, who has travelled extensively in many parts of the world, including Africa, looking at plants. Her co-authored book, [Field Guide to the Wild plants of Oman](#) enabled her to recognize several of the plants seen in May. She is planning to develop a similar book for Somaliland. She is also making it easy for SBF to tap into the experience of Kew's botanists for further help with identifications and has helped us connect with Sebsebe Demissew, Keeper of National Herbarium of Ethiopia, who has expressed interest in working with SBF in building the herbarium at the University of Hargeisa. She contributed many of the images used in this newsletter.

John Lavranos, who collected succulents in Africa for over 50 years donated many reprints to the Biodiversity Museum. His legacy is reflected in [John Lavranos, a legacy of botanical discoveries](#) by Dylan P. Hannon. In addition, **Andrea Cattabriga** of Italy is working on publishing a [book on John's botanical](#) explorations based on John's field notes and his field notes and interviews with him.

Paul Evangelista, a professor at Colorado State University, met with **Stephen Johnson**, **Garrett Billings**, and **Mary Barkworth** to discuss possible collaborations. He also shared the [website](#) that he and Nick

Young have created for use by people in Ethiopia wishing to learn how to use geospatial analysis in natural resource applications. Anyone can use the web site. It differs from most such sites in drawing on examples from Ethiopia. Ethiopia is not Somaliland but it is nearby. If there is sufficient interest, it may be possible to obtain support for creating a site that draws on examples from Somaliland or perhaps, in order to serve a larger number of Somalis, the whole Horn of Africa. Two advantages of such localization are that students learn better when course material refers to places they know. It helps them learn about their own region.

Stephen Johnson has been awarded a grant by the Mohamed Bin Zayed Species Conservation Fund for a survey of *Draceana ombet*, the Dragon's Blood Tree, in Somaliland, particularly in the Daalo.

Garrett Billings assisted with fieldwork, the workshop, and by taking pictures and videos of his first visit to Africa. Several of his pictures appear in this Newsletter. He is a recent graduate of Utah State University.

The University of Hargeisa is advertising for a Museum Assistant. The position will be partly funded by SBF. The ideal candidate will have a master's degree, be knowledgeable about Somaliland's plants, excited at a position that will require learning more about them, and be fluent in English and Somali. Anyone interested should contact the university's Department of Human Resources for the formal job description.

The newsletter is going to be a semi-annual publication with the next issue being published in November, 2017.

We thank all those whose assistance makes the work of the Foundation possible.

Make Your Support Visible

Want to make your support for the Foundation visible? Purchase [items bearing the Foundation's logo](#), such as luggage tags, on Zazzle (<https://www.zazzle.com/somalilandbiofdn>) set up by Sandy Long. All royalties and referral premiums generated from such purchases will be donated to the Foundation. Purchase costs are not tax deductible.



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