

TAYF

THE FRIENDS OF SOQOTRA NEWSLETTER



Adenium obesum subsp. *socotranum* and the Egyptian vulture. Photo by Raquel Vasconcelos, Socotra Island.

Strandings of porcupinefish

Mass stranding of porcupinefish observed on Socotra beaches late March 2021.

The Cucumber trees

The number of *Dendrosicyos socotranus* trees is estimated to be some 6,400-7,000 adult individuals.

Trees catch water from the air

Trees, especially in the mountain areas, play an important role in the hydrological cycle of Socotra.

EDITORIAL

Dear Reader,

We are happy to share the 18th issue of **Tayf**, the annual newsletter of the charity Friends of Soqotra. In 2021, FoS has been running for 20 years! Tayf is the only annual newsletter that is devoted entirely to the Soqotra Archipelago. The annual publication is a result of volunteering work, with contributions by authors, while compilation, layout and translation are done by the Tayf editorial team. An **update** on various types of research related to Soqotra, is shared in this newsletter, which is available in English and in Arabic for free online and in print. The printing costs are covered by membership fees. Digital copies are distributed through WhatsApp with people on Soqotra, and hard copies are brought to the **island** for reading. During my last visit to Soqotra, I witnessed Tayf copies in very remote places on the island, being read with interest and drawings colored in by children!

During the last year, and still, the world has been affected by the global COVID-19 **pandemic**, which also reached Soqotra. On top of other challenges in Soqotra, such as climate change impacts, indirect effects of the war in Yemen, loss of traditions and the loss of natural resources, the pandemic touched many lives directly or indirectly. Therefore, to all who have been personally affected in any way, I would like to convey sincere wishes, strength and good health. As humans, we hope to adapt and overcome individually, and in connection to each other.

As a charity, we had to apply a similar adaptive flexibility regarding our activities. For example, the AGM and **conference** of FoS became a mixed (virtual-real) meeting. Our hosts in Mendel University in **Brno** did an excellent job at combining an interactive real and virtual attendance, with up to 50 attendees in total and 21 excellent presentations, including **Soqotri** speakers. Despite the pandemic, volunteers of FoS and partners have been very active during the past year. In 2020, FoS contributed to various activities on the **ground** in Soqotra, as well as facilitating the communication of scientific **research** through social media. The charity continues to support the successful **Mangrove** Replantation Project in partnership with ARC-WH and the Al Tamek Association in Ghubbah, which is now in its fourth year. In addition, FoS directly contributed to community **cleaning** activities and an awareness sign at the dune site at Erher (Arher) stream, and helped to support local communities in collaboration with the local Al Khair Association in homegarden and environmental activities. A special volume with scientific **papers** related to Soqotra appeared

in 2020 in the academic journal Rendiconti Lincei as a direct result (proceedings) of the FoS annual general meeting in Palermo of 2019. These are true achievements by many contributors including Soqotran researchers. The compilation and publication of such works allows insights in effects of climate change, invasive species and other issues. This in turn helps to raise **awareness** regarding biodiversity conservation based on scientific facts, while also fostering more general protection of the archipelago and of its people. This newsletter contains highlights of the research papers, and basic information for the reader to find further information online.

This year's newsletter further contains some amazing, and sometimes worrying, information about Soqotra. This issue, like many before, illustrates that Soqotra's unique **features** are of global importance. Marine biologists C. Cheung and L. DeVantier, currently living in New Zealand, comment on recent mass **strandings** of porcupine fish on the island's beaches and share information on other places in the world where this phenomenon has been observed. The Russian researcher V. Agofonov shares his insights and observations on two beautiful archetype **stories** in Soqotran folklore, one on the Soqotran Cinderella and another called the Tale of Two Brothers. R. Vasconcelos and B. Tomé talk about **reptiles** on Soqotra and new parasites (not harmful to humans) that were discovered during genetic research. Mendel University shared a variety of recent and ongoing research relating to the endemic **Cucumber Tree** on Soqotra, to **Frankincense trees** and to the importance of **Dragon's Blood Trees** in capturing **water**. In addition, some worrying tendencies in Yemen's only **Ramsar** Site, Detwah Lagoon, are mentioned, a site which definitely needs strong protection to ensure its functioning as a globally important **wetland**. In addition, Tayf presents an interview with two Belgian speleologists and long-time members of FoS, on their experiences and memories about Soqotra and its immense **cave** systems. In the Tayf **kids** section there are dot-to-dot line drawings for coloring, so that all ages can enjoy the newsletter if they wish to do so.

We hope you enjoy the Friends of Soqotra newsletter and that you will remain safe and healthy in 2021. Thank you for your interest in Tayf and in reading about the **biodiversity** and research in the amazing Soqotra Archipelago, and thank you for your continued **support** to FoS.

Your FoS Chairperson,

Dr Kay Van Damme

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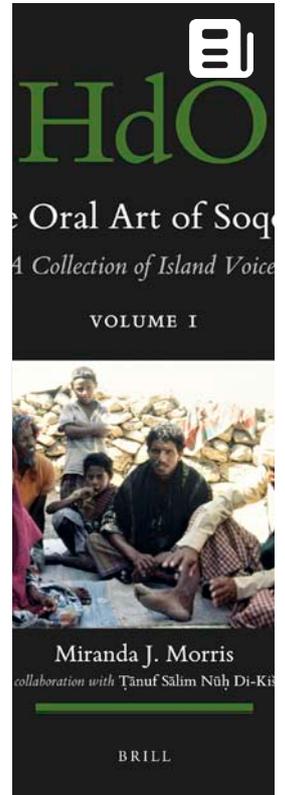
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THE FIRST HYBRID MEETING IN BRNO

By Kay Van Damme

Due to the travel restrictions related to the covid-19 pandemic, the 19th annual meeting of the Friends of Soqotra had an unusual format. Despite the pandemic, the meeting was a success; it was attended by people from all over the world, including participants from Soqotra and Yemen mainland. The majority of the attendees connected virtually to those present in Mendel University in the city of Brno, Czech Republic. It was the third time in the history of the charity that the annual meeting was hosted in the country. As in previous years, scientific outputs, in particular biodiversity conservation tools and progress were openly shared and discussed. The activities of FoS and those realised in collaboration with other organisations since the Palermo meeting in September 2019 were shown. These included activities on the ground (such as the mangrove project) and activities related to awareness (e.g., Connect2Socotra campaign and the covid-19 animated video in Soqotri language).

THE THIRD TIME IN THE CZECH REPUBLIC

The **19th Soqotra Conference and Annual General Meeting of the Friends of Soqotra** was held from September 24th to 27th at Mendel University in Brno, at the Faculty of Forestry and Wood Technology, Czech Republic. The Friends of Soqotra had met before in the Czech Republic on two occasions. In 2008, Mendel University hosted the Annual General Meeting (AGM) in Brno and in 2013 FoS convened in the beautiful Lednice

(Lednice-Valtice Cultural Landscape, the UNESCO World Heritage Site in South Moravia). The two previous meetings took place in a different world. In autumn 2020, the covid-19 pandemic reached its second peak in Europe, resulting in constantly changing health regulations and travel restrictions. No reports of covid-19 were known from the Soqotra Archipelago until this time, however Yemen mainland was unfortunately affected as well. To anticipate the difficulties of having a meeting as in previous years (many members

were not able to travel in 2020), the FoS Committee had approved a proposal of this year's hosts to organise a **mixed** meeting, allowing for attendees to attend virtually or in person. The presentations and discussions were shared through the meeting platform Zoom. Despite the logistic challenges, the Mendel University AGM committee led by Petr Madera and Hana Habrova, organised a smooth and well-attended conference, fully within covid-19 health regulations. Logistics were challenging and included special (boundary) microphones set up on the



Attendees of the 19th FoS hybrid meeting and the contribution of Salem Hamdiah.

tables to capture the discussions of all present in the room for those online. All presentations were shared on the screen for all to participate.

CONFERENCE

The attendees of the conference convened on Thursday the 24th of September for a welcome excursion at Villa Tugendhat in Brno city, an impressive building designed by architect Mies van der Rohe and a cultural UNESCO World Heritage Site. On the 25th of September, the conference programme included a total of 21 presentations divided into five sessions covering updates on fauna, flora, socio-economics, awareness as well as techniques on general biodiversity conservation and monitoring. About 15 people attended in person, adhering to the covid-19 guidelines communicated by Mendel University. There were about 15 attendees in person, including researchers from La

Sapienza University in Rome (Italy), the University of Pavia (Italy), University of Ghent (Belgium); the majority of attendees consisted of members from Mendel University (Czech Republic). Two attendees were present in person from **Yemen**: Abdurraqueb Al-Okaishi (Mendel University) and Salem Hamdiah (Ljubljana University, Slovenia), **PhD students** who presented their main research (by now, Mr Al-Okaishi finished his PhD). Online, through zoom, about **50 attendees** joined the talks on September 25th either as presenters or observers. There was a regular turnover of online attendees, with a constant of about 30-35 attendees online at any time. The Environmental Protection Agency and the Ministry of Water and Environment of Yemen were officially represented by Mr. Waleed Al-Shauibi who joined online from Aden. Representatives from Soqatra were invited (e.g., EPA Soqatra Branch), however they apologized to be unable to participate through

Zoom due to low internet connectivity on the island. The online **speakers** during the conference included representatives of several institutes and nationalities, including CIBIO-InBIO (Porto, Portugal), La Sapienza (Rome, Italy), Pavia (Italy), Ghent University (Belgium), Mendel University (Czech Republic), Ljubljana University (Slovenia) and UNESCO Regional Office (Doha). Speakers of GIZ and FAO presented in their personal capacity on scientific contributions related to Soqatra. Online attendees included people from several countries (Yemen, Italy, Portugal, Switzerland, Germany, Belgium, Jordan, UK and others), including key representatives of the Royal Society for the Conservation of Nature (RSCN) of Jordan, IUCN World Heritage Programme and of the UN Environment Programme (UNEP, Nairobi headquarters).

IMPRESSION

The meeting on the 25th of September was rich in information and fully transparent, covering a large diversity of topics on animal and plant groups, as well as on conservation and challenges related to the Soqatra Archipelago. The interactive discussions illustrated strong engagement by all attendees and the panellists, in particular highlighting the importance of continued biodiversity conservation. Main impressions included the beauty of Soqotra's biodiversity, the technologies and tools for conservation monitoring as well as the fragility of the local nature and culture under the current socio-economic situation. Most of the work that was presented has been published in 2020 and is available. Information on several groups and habitats was shared. These included an update on the **dragonflies** as an important indicator group for aquatic ecosystems and the challenges these habitats face on the main island. Other terrestrial animal groups were discussed, such as the amazing endemic

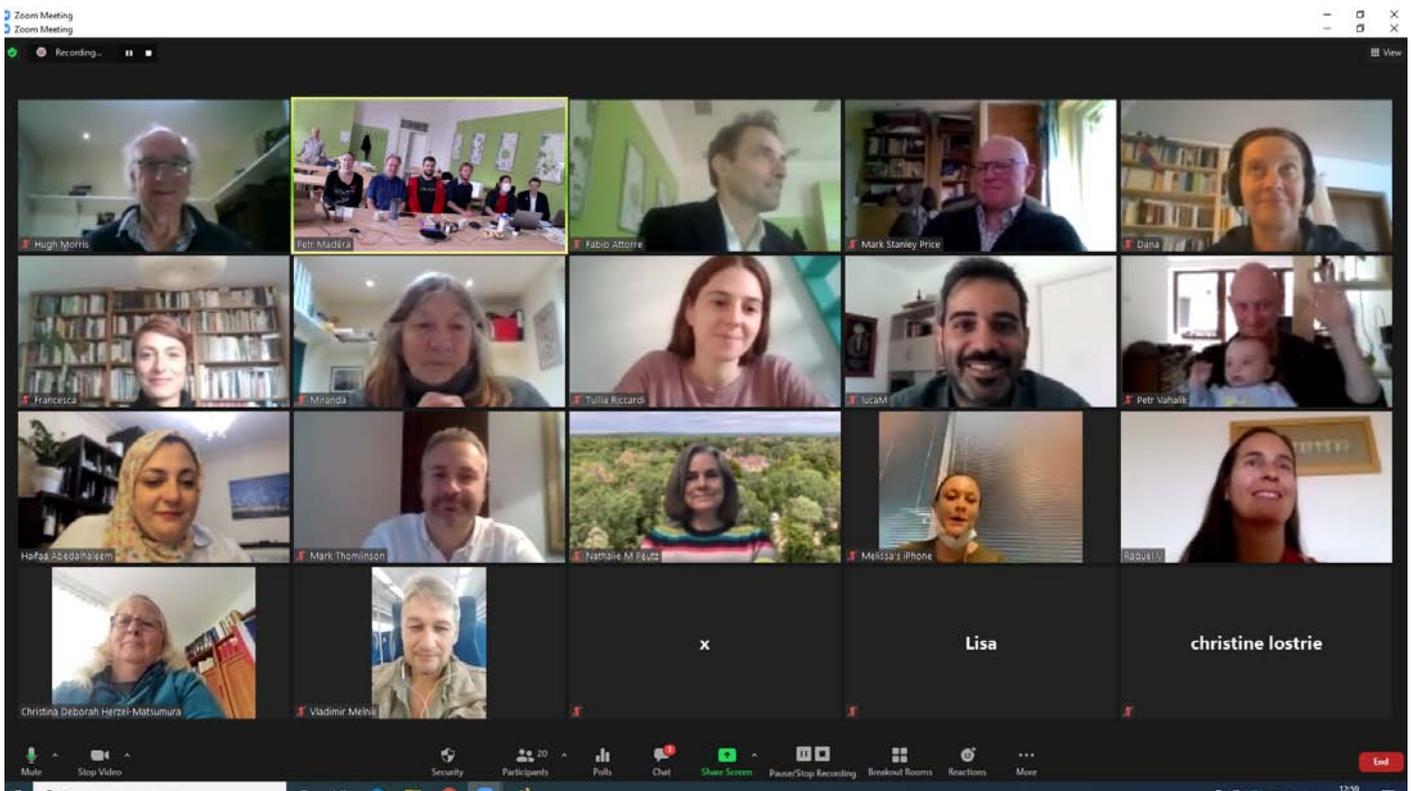
butterflies of Soqotra for which good data are now available to provide a general overview. Amazing research on plants was shown as well. This included a new species of *Boswellia* from Samha Island, threats to *Boswellia* related to **climate change** and conservation efforts and sustainable use of these important trees. An entire session was devoted to Soqotra's most iconic tree species, the Dragon's Blood Tree, which is of high cultural and symbolic importance. In addition, the tree ensures water capture from fog in arid environments and therefore contributes to the island's hydrological cycle.

The socio-economic landscape of Soqotra as well as ongoing threats were discussed in context, as well as a wide range of scientific activities and outputs. The latter activities included contributions by Soqotri co-authors, and much of the work shown was published in the 2020 special issue about Soqotra that appeared in *Rendiconti Lincei*. Related to conservation,

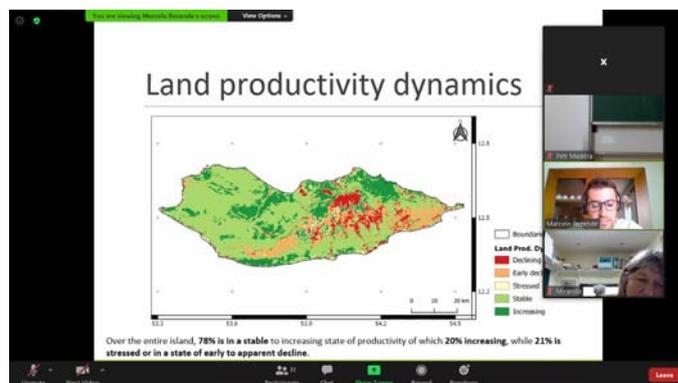
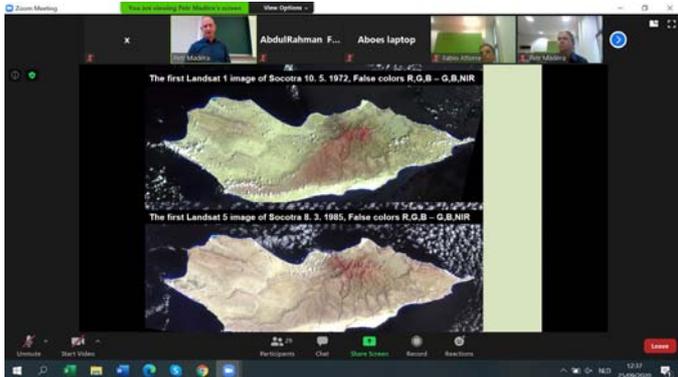
the IUCN World Heritage Outlook assessment tool was presented in detail, which was published online later in 2020 (<https://worldheritageoutlook.iucn.org/explore-sites/wdpaid/903138>). The Director of UNESCO Regional Office (GCC and Yemen) Dr Anna Paolini presented the results of the joint Connect2Soqotra campaign, arguably the most wide-reaching awareness campaign for biodiversity of Soqotra ever realised. All these talks resulted in valuable recommendations and interesting discussions between a diverse group of international and Yemeni attendees, all people with a general **interest** in Soqotra.

AGM

On the 26th of September, during the Annual General Meeting, the FoS committee and members present voted for a new Vice-Chair, Secretary and Treasurer. An overview was given of all activities by FoS to the attendees.



Attendees of the 19th FoS meeting



Printscreens of some of the contributions

The year's financial report was shared online to promote full **transparency**. The activities included also various collaborations with both local NGOs and international organisations, including EPA, the AI-Tamek Association, ARC-WH, UNESCO GCC-Yemen. Notably, FoS reported on **the covid-19 awareness video in Soqotri** language that was posted on YouTube in a collaboration with UNESCO, and the Connect2Socotra campaign under the same collaboration, as well as ground activities, such as the successful mangrove project in Ghubbah with ARC-WH, EPA and the AI-Tamek Association. Suggestions for activities for the coming year were shared, and working groups were set up for each activity of FoS. Finally, the newsletter of Tayf was shared with the attendees, either in hard copy or digital format. A number of copies were given with Salem Hamdiah to take to Socotra island after the meeting. Within 24 hours of a negative covid-19 test at Vienna airport, Salem was able to travel to Cairo and to Socotra carrying copies of **Tayf**, as well as positive outcomes of the meeting and new skills for his PhD on *Boswellia* conservation. Minutes of

the 19th AGM and financial report of the year are available from the website at www.friendsofsoqotra.org

OUTCOMES

The meeting resulted in a few key **outcomes** that emerged from the various discussions. Main points included : (1) All attending institutes offered their continued help in training and capacity building for those who work in relation to Socotra (from Socotra and from Yemen mainland); (2) New working groups/subcommittees in FoS will allow for a smooth functioning of the organisation. Topics include awareness raising, archives, newsletter, local projects, etc.; (3) Existing data that has been published by the presenters is openly available upon request, so that it can provide practical information for conservation in Socotra; (4) FoS continues to provide support and a bridge for networks and people who love and care for Socotra, and in extension, promotes beauty and passion for the amazing culture and nature of Yemen. A report of the meeting was shared with EPA.

ACKNOWLEDGEMENTS

We wish to thank the organising committee of Mendel and the FoS team for their flexibility, realising a meeting during a most unusual year. In particular, many thanks to Hana Habrova, Lukas Karas and Klara Lengalova for their efforts and various contributions.

MORE INFO:

Friends of Soqotra (/Socotra)
www.friendsofsoqotra.org

FoS Meeting 2020

Talks on the 25th of September (2020) included the following speakers and topics::

<https://fraxinus.mendelu.cz/tropicalforestry/odkazy/friends-of-soqotra-19th-international-conference-and-annual-general-meeting/>



DENDROSIKYOS SOCOTRANUS

DISTRIBUTION AND POPULATION CHARACTERISTICS OF THE CUCUMBER TREE

By Abdulwahab Saad Saeed Ali, Hana Habrová



Dendrosicyos socotranus and its typical habitat (15 June 2009, photo Petr Maděra)

THE STUDY FROM 2013

The bottle-trunked endemic succulent tree *Dendrosicyos socotranus* is an extraordinary species from the Cucurbitaceae family, where perennial herbs with prostrate or climbing growth habits are typical. This **unique species** is characterized by a typical swollen water-storing trunk, pendulous branches, and absent tendrils. Its anatomical features present obvious adaptations to the typical seasonally dry habitats of Socotra. *Dendrosicyos socotranus*, a vulnerable species according to the IUCN Red List, has an emblematic value associated with other species that share the anatomical features of bottle trees, such

as the desert rose *Adenium obesum* ssp. *socotranum* and *Dorstenia gigas*. They all create the most characteristic sights in the Socotran landscape for which the island is known for centuries.

We conducted a study throughout Socotra Island to investigate the distribution, population structure, and regeneration potential of the Cucumber Tree. In total, 163 live trees (excluding seedlings) were found in all (24) investigated locations, covering an area of 96 km². The height, stem circumference, fertility and coordinates of each tree were measured and data

regarding the ecotope, land cover, and natural regeneration were recorded. We estimated that there could be more than **6,400** Cucumber Tree individuals among the populations on Socotra Island, excluding seedlings. Most likely, the number is even higher; counting the trees from inaccessible places, and from savanna woodland, it seems that 7,000 individuals is a realistic estimate.

The majority of the trees occur in the “High shrubland with succulents”, “Wadi”, and “Low *Croton-Jatropha* Shrubland” land cover classes. *Dendrosicyos socotranus* usually grows on plains or northern slopes up to 18° at elevations up to 400 m above sea level.

Age structure and connected regeneration status of *D. socotranus* population are neither bad nor optimal, however the species would benefit from more young trees to help ensure its future development. The tree seems recently endangered mainly by habitat destruction, grazing, and overexploitation, but its flowering and fruiting capacity and therefore regeneration potential seem good. In general, the **fertility** of the trees is good, and natural regeneration occurred in 77 % of the locations with adult trees; it was found that 16 % of the individual trees regenerated.

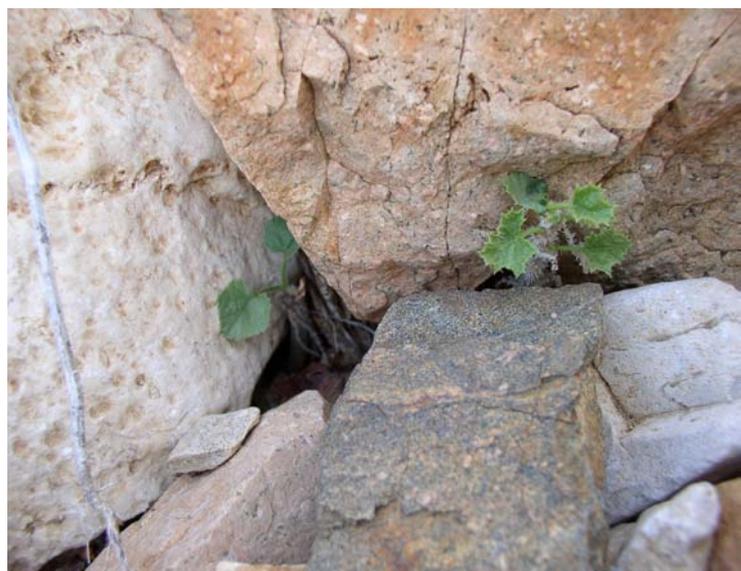
To protect the tree and increase the numbers of young trees, we recommend that *D. socotranus* could be supported by local authorities and communities who could raise awareness about its value and support its growing in home-gardens. Its growth behind the **protection** of fences could be relatively quick, so this could be one of the simple measures for its conservation and maybe expansion, as the majority of the settlements are situated below 500 m above sea level, which are optimal conditions for its growth.

MORE INFO:

Habrová, H., Vahalík, P., Drápela, K., Ali, A.S.S. Distribution and population characteristics of the Cucumber Tree (*Dendrosicyos socotranus* Balf.f.). Rend. Fis. Acc. Lincei 31, 725–736 (2020). <https://doi.org/10.1007/s12210-020-00927-5>



Abdulwahab and one of the Cucumber trees (February 2011, photo Hana Habrová)

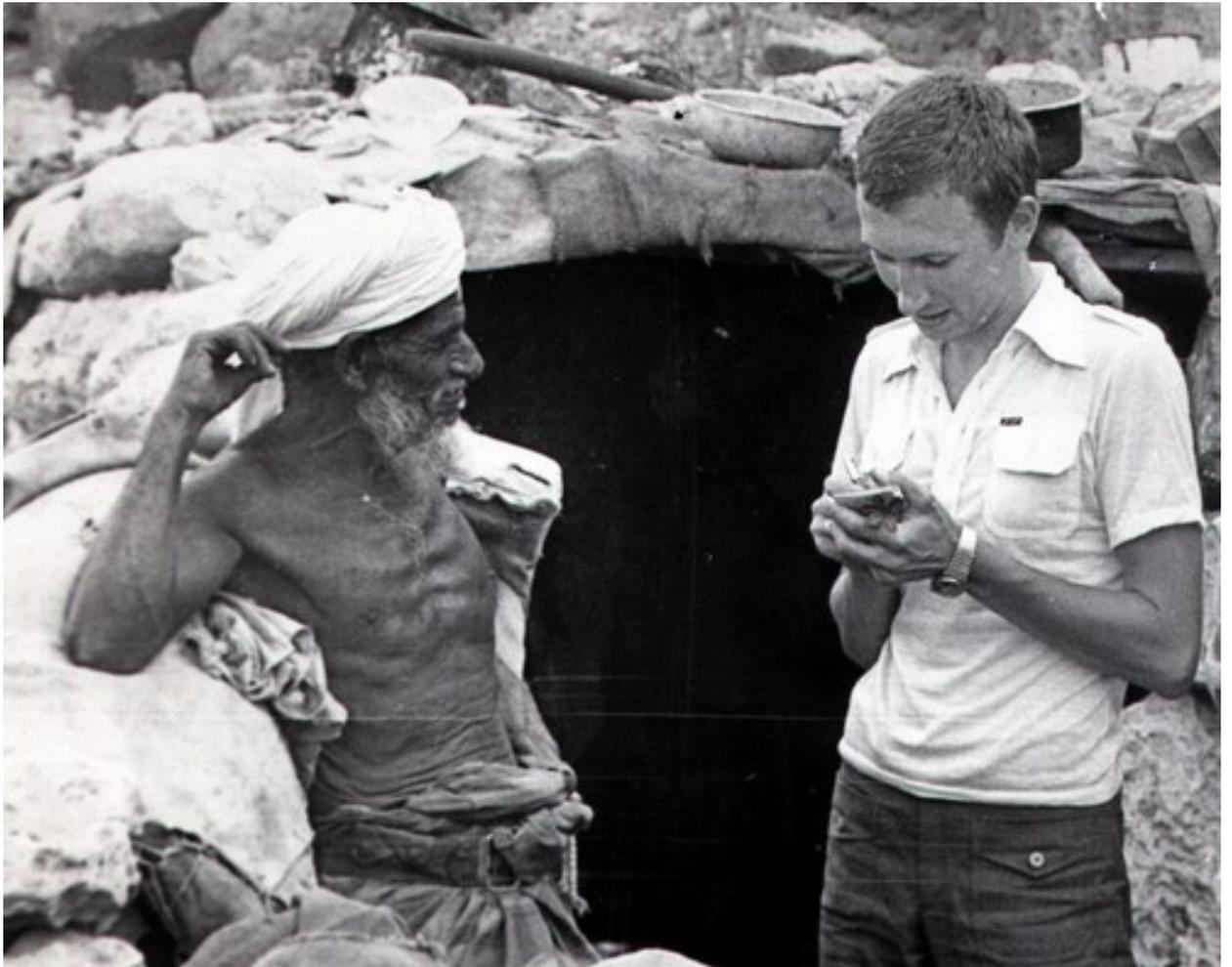


Seedlings of the Cucumber trees are found only in inaccessible places like among stones under adult trees. They are easily destroyed by ubiquitous goats. (May 2006, photo Hana Habrová)



SOQOTRA'S GOLDEN TALES

By Vladimir Agafonov (email: soqotra@yandex.ru)



The author (VA) recorded a wide range of stories on Soqotra Island in 1976 and 1979.

Why do the Soqotri oral folktales matter? And why might they matter more, in fact, than the well-known European tales by the beloved Perrault and the Grimm Brothers? We all know the **stories** that the Grimms collected, such as Snow White or Hansel and Gretel, but how many people know the **amazing** fairytales from Soqotra?

What rich stories could we have had today in our printed library of the World's folk tales if the Grimms,

for instance, had collected their texts not from the German States in the Napoleonic era but from somewhere else? Not from European men and women of local middle-class or aristocracy, often of French ancestry, whose childhoods and youth were spent largely in isolation, comfortably away from the harsh reality the working class lived in. When the famous Grimm Brothers met the people they interviewed and wrote down the now well-known fairytales, these people were living in highly

bureaucratic, industrialized, individualized societies, with easy access to printed resources and libraries, including folklore books.

What if they would have collected their folklore tales from Soqotra? Like David Mueller did in 1899, when he was heading the Austrian South Arabian linguistic expedition to this fabulous Yemeni island. Sure, this is only a speculative construct. And we are not even considering the huge **language** barriers, which the magnificent linguist D. Mueller overcame surprisingly easily.

Mueller's Soqotran respondents in 1899, just like their ancestors before them and their descendants even until the end of 1970s, were living mainly in open air and/or caves, or rapidly constructed temporary houses, without formal education, making fire with tinder and treating dangerous diseases by cauterization with hot iron. Despite the harsh conditions of everyday life in the "Island of Bliss", especially during summer times when life becomes extremely uneasy because of the South-West monsoon, the people of Soqotra have amazed everyone with their peacefulness, hospitality, modesty, hard work and **quiet pride**. These features can be clearly seen in the Soqotrans for many generations.

The Soqotrans still maintain their Modern Semitic Arabian Language quite well, despite of its very old origin and archaic grammar (the Soqotri language now exists as a number of local **dialects** with almost the same level of archaism). Keeping the language alive for centuries, however, could not have been achieved without constant and targeted parenting and education, encouraged by the family and the community. And the Soqotri really have - since a very long time - a wonderful tool for this: the oral literature with all its prose and poetic genres. And above all - the Soqotri folktales.

In the 18th-19th century Europe of the Grimm Brothers, folktales had remained in the population almost by chance. These stories had become largely individual memories, remnants of the once-existing folklore fairy tale wealth. The stories had largely lost their utilitarian significance and they were still lingering mainly among **women**, who play a huge role in folklore maintenance. However, through their mothers, many Europeans connected to the significance and energy of these beautiful "children's" tales. Like Johann W. von Goethe whose desire to compose music came from his mother's bedtime stories ("From my mother... the joy in making stories"). Europeans

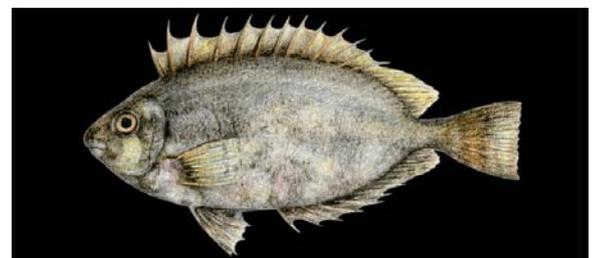
created a new literary genre based on folk tales heard in their childhood, which the Grimms named "the Children's and Household Tales", a literary fairytale. At the same time, they tried to recreate the images, plots and stylistics of folk tales as close as possible and reproduce the spirit and flavor of this archetypal oral folk art when writing their author's tales.

Some of such stories were almost indistinguishable from the actual folk tales, just like Pushkin's "Tale of the Fisherman and the Fish". This tale is about a fisherman who manages to catch a Golden Fish which promises to fulfill any wish in exchange for his freedom. This tale was written in verse and based on the Grimms' tale "The Fisherman and his Wife".

You may ask, "Okay this is all very interesting, but what about Soqotra? And its folktales?"

Let us look at a story of a Soqotri girl named **Mahazeló (the Unloved)** by her neighbours (the Soqotran Cinderella), the Fishermen, and a fish that grants wishes (s'seysino). In this archetypal Soqotri oral folktale, the s'seysino plays a similar role to that of a grant-wishing flounder fish in one of Grimm's tales (number 19, "The Fisherman and his Wife") or that of a little white bird which plays the role of the Fairy Godmother in another one of Grimm's tales (number 21, "Aschenputtel", a version of Cinderella). **Animals** play key roles in these archetypal tales.

The Soqotran **storyteller** is Saad Muhammad Saad Abbud (Sa'd Muhammad Sa'd 'Abbūd) from Qarya, near Qarya lagoon, on the North-Eastern shore of Soqotra Island. It is here transcribed from a fragment of a tape-recording that I made in 1980.



The rivulated rabbitfish, also known as the marbled spinefoot (Siganus rivulatus), is a common, edible fish living around Soqotra's coasts. In the local folktale of Mehazeló, the fish transforms into a maiden, granting wishes to a girl in despair. Source <https://www.kojuribukupiti.org/wp-content/uploads/2016/10/rabbitfish-rect.png>

MEHAZELÓ (THE UNLOVED)

(original fragment)

1. 'an ɬoy šom káne l-ħa-tú ɖayáfe
2. gíref séybíbhon, gíref 'agg we d-(h)i 'áze
3. kay géhem diš ɖayáfe
4. 'ímer (h)e-s: we ħa-tú 'íne ší-ħen nuš góniye d-bámbo we góniye d-migdere...
5. nuš góniye d-migdére, we nuš góniye d-bámbo
6. we nuš góniye d-ša'ír, we nuš góniye d-írhez
7. nígaf-es 'id qá'r
8. 'ímer: tilóqit min kulli škímo
9. tikéli-is d-si d-góniye!..
10. 'éšer-es 'éfe d-ši-ná'a 'ogníyo fáħro -
11. we loɬ nígef.
12. 'ímer: bi kulli škímo lóqet-is d-si di-d-éhe -d-si d-góniye
13. 'af dégen šaláti, zem nišábaħ ħán-hen min ɖayáfe!
14. 'oméro: 'aħ, ħa-tó'o šé-ken!?' ('ígek l-ifrír.)
15. 'aħ, 'iṭóhor šé-ken d-firíro?!
16. 'ímer: bíši firíro! ħa mo-š firíro!
17. ba'd aš-šalá, zem nišábaħ ħan - 'o ksen min kullu škímo d-se b-góniye -
18. zú'a mo-š 'ed!
19. 'iz'emó, tibóš, we se tibóš, tibóš
20. 'aṭóf dikére d-si séysino.
21. ɬaháro d-taħ, 'oméro:
22. 'e séysino*, 'e séysino!
23. ħáro ħey wa 'éyzako.
24. 'e séysino, 'e séysino!
25. ho d-še-n(')á - Meħazeló!

Then one day, there was a feast
The old men were invited, the old man and his wife,
to join this feast
They said to her:
"with us are half a sack of corn and a sack of wheat,
half a sack of wheat, and half a sack of maize,
and half a sack of oats, and half a sack of rice..."
They dispersed it all over the house
They said, "Pick up every grain put it into the sack...!"
The people arrive there and all this food which-(is)-now-here
and then they dispersed (it)
They said, "Each grain, collect it into the sack...
until the prayer, when we come back home from the feast in the morning!"
She said, "Oh, can I come with you?
Oh, shall I go with you to the dance?!"
They said, "No dances! Here are your dances!
after the prayer, when we come back home in the morning - if we will not find each grain in the sack -

the life will be taken from you!"
She sat and cried, and she cried, cried until she remembered her s'ey sino-fish
She went to the shore and said:
"Oh, s'ey sino*, oh, s'ey sino!
They torture me, and I feel bad!
Oh, s'ey sino, oh, s'ey sino!
Now it is me, Mehazeló...!"

* the wish fish "s'ey sino" is identified as the rabbit fish *Siganus rivulatus*

Of course, the story is much longer. The small fragment above is in its purest form, directly from the recording. The end of the story, with English editing by John Farrar, reads:

Before she had sung it three times the fish was there, it jumped out of the sea onto the shore and turned into a maiden. The maiden-fish gathered

lots of birds and ordered which must gather wheat, which must gather maize, which must gather oats, and which must gather rice, and that the task must be completed before sunrise!

The birds went to work and the maiden-fish gave Mehazelo a beautiful red dress embroidered with silver and five beautiful silver bracelets for

each hand and two big silver bracelets for her legs. "Pick up your dress and let us go quickly to the feast!" the maiden-fish said. "Oh, no! I can't!" Mahazelo said. "They will know me." "Don't worry about anything!" the maiden-fish said.

And they went to the feast. On the road they passed along a deep stream. Mehazelo washed her face with clean water and her long hair fell into the stream. While she washed her legs one of her big silver bracelets fell from her leg. But the stream was very deep and she was unable to reach the bracelet.

Mehazelo and the maiden-fish came to the feast, danced and played there and before sunrise returned home. The maiden-fish once more became a fish with a spine and went back into the sea. Mehazelo put on her old dress and went back to work. When the old man and his wife came back they found all the grain had been sorted into their sacks.

The same morning the Sultan's slaves took his camels to a camel drinking pool. The slaves saw that there was something shining at the bottom of the stream. One of the slaves who knew how to dive plunged into the stream and picked up the big silver bracelet from the very bottom. Another slave saw a piece of very long hair in the water. He picked it up, wound it on his finger and made a little ball! The slaves went to the Sultan and told him what had happened and what they had found. The young Sultan had a problem, he could not find a bride. "Go, find me the lady of this excellent bracelet and of this beautiful hair!" he said. "She must be tall and well-shaped as my bride must be!"

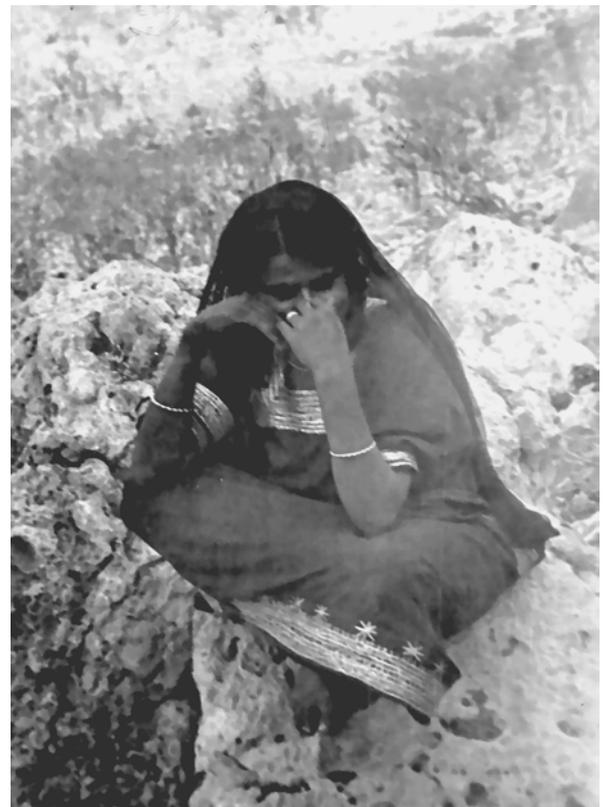
The Sultan's servants went from house to house, from village to village. They tried the bracelet on every girl in the villages but it was always too large! They also let down all of the village girl's hair but their hair was always too short. The people didn't understand this so they were so frightened! Finally the Sultan's men came to the fisherman's house.

"Well," they said. "Who is here in your house?" "My old noisy wife, no one more," the old man said. "Have you told the truth?" asked the Sultan's men. "Well" he said, "I also have a lowly girl here but hardly you want her." "We have an order!" the servants said, "Let her come here!" When they

tried the silver bracelet onto her it fitted! When they asked her to untie her hair they saw that it was her hair! So the Sultan's men hurried back to their lord with the happy news.

That very day the Sultan sent an expensive present to the old fisherman and soon there was a great wedding.

Until the second half of the 1970s at least, almost **every** Soqotran living on or off the island, whether this would be an educated person studying or working in Aden or the Gulf or shepherding in highlands of Soqotra - knew this fairytale. In addition, they knew dozens of fairytale texts in Soqotri language and a traditional scenography of storytelling, keeping all in their memory and mind. Along with the smallest plot details of each story. The people of Soqotra could tell such stories without hesitation or stammering and with **excellent** acting at night time to their children or friends. It was an aftermath of the day-after-day fairytale therapy - in the end of each hard day's night - inside every Soqotran family.



Fatima bint Salem Abdallah from Mauna, Muri Area, Soqotra Island, who shared the Tale of the Two Brothers with the author. Photo by VA, 1979.

It was also a result of a high oral philological education, good **moral** and strong guidance for life given

THE TALE OF TWO BROTHERS

1. tru 'ági ya'tiđáno, ya'tiđáno - 'in 'égi 'a'hó.
2. 'ómar: 'aḥ, nínhi!
3. 'ómar: 'a?
4. 'ómar: 'iním yi'ezín-ki?
5. 'ómar: ye'ezín-ki? néfa'en 'áže.

6. - mon - néfa'en 'áže? 'ep! bídik!
7. 'ómar: suwá', bídik. 'in kar 'ol bídik!
8. sfer, sfer hag - wa yhi bá'al.
9. 'úqal, ḥími t-š d-hi 'íže, wa d-se hag, šéher-a-s,
10. 'úqal 'íyhe ḥa.
11. 'igébe 'íže, 'igébe hag, šéher-a-s.
12. we šéher-a-s 'ol 'igíb (h)i-s.
13. 'in 'áđin d-hi min nínhi,
14. we ḥtáram (h)o-s de t-'iḥterám d-hi nínhi.
15. min 'ayyámat-ullá 'imé'e d-se b-'ag gédaḥ.
16. ṭo 'imé'e - beđaré d-se ḥaláq,
17. beđake d-se ḥanq,
18. beđaré d-se sárwil - *śá'al 'aqálo.
19. 'oméro: ya'! 'a tqab de-hé! ber ho 'aryána!
20. 'ómar: mon ta t-šigé?
21. 'oméro: d-(h)et nínhi!
22. d-(h)et nínhi de t-'úqalk het 'ínhe de-ḥá -
23. šége b-e té-ne.
24. 'ómar: suwá'!
25. 'ómar: ná'a, fel ho-š l-išgá-š?
26. 'omére: ná'a, tšóge-š, tšóge-š 'ínhe -
27. teqáđof mo-y hed, teqáđof mo-y hed!
28. 'um ba'd 'ol " tšóge-š - tiqáđof mo-y hed " - ṭáhar.
29. w-ol 'ad bíleq, kíse min 'ol yiḥéleb l-hi 'iléyten,
30. ṭo kíse min 'ol yeḥéleb l-hi 'iléyten -
31. qóđof mo-y hed be sáyre.
32. 'ómar: hat! 'ol 'ómark ha-k?
33. bíši d-yi'ezín-ki k-ol mére?
34. ṭáhar w-ol 'ad bíleg - khon giššés
- ...

"Two men love each other, love each other - because the two men (are) brothers.

One of them said, "Oh, brother!"

The other said, "What?"

He (the first) said, "What will divide us two?"

He (the second) said, "(What) will divide us two? A deed of a woman."

"Who - a deed of a woman? Ep! (You) lied!"

He (the second) said, "Good, (I) lied! But (I) didn't lie!"

The man went away, went away - and he got married.

(He) left, (he) got married for him (self), (left) his wife and that man -

her brother-in-law, (he) left them both here.

The woman wanted, the woman wanted that man, her brother-in-law.

And her brother-in-law didn't want her.

Because (he) loved his elder brother and respected her, the same respect

(as he had) for his elder brother.

One day of the days of Allah (she) heard her man come (home).

Once (she) heard this, (she) tore her dress, broke her necklace,

tore her pantaloons - made herself abandoned(?).

She said, "Hey you! Don't enter! Because I (am) naked!"

He (her husband) said, "Who did (it) so?"

She said, "Your brother! Your brother who left you with me here -

he made me like this now."

He said, "Well." He said, "Now, what (is there for me) to do to him for you?"

She said, "Now, (what should you) do to him, (you) do to him for me...

- cut off his hand, cut off his hand!" (note: here "a hand" is an euphemism)

After this "do to him - cut off his hand" - (he) went (away)

and (he) didn't save it for later, (he) found (him) milking his cows.

Once (he had) found (him) milking his cows - (he) cut off his hand with a knife.

He (the younger brother) said, "You! Didn't (I) say you?

nothing (will) divide us two except a woman?

He (the younger brother) went away and became a castrate..."



Family building a temporary house in Mauna, Muri Area, Soqotra Island. Photo by VA, 1979.

through and with the help of the only then available (oral) textbooks, anthologies and monographs - the oldest fairytales of the island. And it was here for centuries, when Soqotra and the most of its people lived in natural isolation from the outside world in the ocean, being also isolated in their language, traditional culture, and their way of life. Moreover, and it should be taken into account by scientists, the isolation of the Soqotrans happened a very long time ago, apparently at

least three thousand years or more. This should have led to the conservation of elements and motives of the most ancient Proto-Semitic and even Hamito-Semitic fairy tale folklore basis.

That is why the existence and even popularity of the next story, **The Tale of Two Brothers**, has remained inside the living Soqotri oral folklore. Similar tales are found which are very old and potentially related, for example in ancient **Egypt** (recorded by Inena, or Ennana on a papyrus for Prince Seti-Merenptah).

I translated this beautiful tale from Soqotra with the help of a recording fragment in Soqotri language, of 1979: a Soqotran woman, **Fatima bint Salem Abdallah**, is telling the Story of the Two

Brothers while sitting with her sewing machine and continuing sewing before her parents and the two younger brothers in front of their little caves on the mountain Mauna in the Muri area. The sound of the woman **churning butter** is heard in the background.

In the Old Egyptian papyrus depicting the Two Brothers story, the writer Inena solved the last scene of this fragment in a literary and romantic way, not allowing the older brother to commit a bloody crime against his younger brother - the main positive hero of the fairy tale. Instead of the events in the Soqotri version, the younger brother himself performs a self-sacrificing act to prove his innocence. "Then he took a sharp knife and maimed himself, casting the flesh into the water as food for the fish. Then he became very weak and faint." (The Tale of the Two Brothers: A Fairy Tale of Ancient Egypt; the D'Orbiney Papyrus in Hieratic, Charles E. Moldenke, 1898:98). The Soqotri story ends in a slightly different way, but with the same outcome.

There are **many more** stories like this on the island. Soqotra still has a huge, untouched, ancient folklore. It is still alive in the daily oral autochthonous language tradition among elders and it remains a very little-studied source. A study of the fairy tales of Soqotra could however significantly **advance** the research and understanding of both the folklore of the World and the dynamics of connections and life in antiquity. Stories that remain for centuries, even millennia, are among the most important forms of intangible heritage in human history. Soqotra is famous for its stories, which we should all hope, will live on in the future.

MORE INFO:

Transcription of the Soqotri and translation is by the author. The original sound fragments in the Soqotri language of 1979-1980 have been kindly shared with FoS and are available for free online at www.friendsofsoqotra.org. The complete version of the Mehazeló story is available from the author at webpages <https://socotra.info/mehazelo-cinderella-of-soqotra.-soqotri-folk-tale-from-qarya.html>. The tale of Two Brothers is available from the same website at <https://socotra.info/tale-of-two-brothers-soqotri-folk-tale.html> and other stories are here <https://socotra.info/socotra-fairy-tales.html>. See also The Friends of Soqotra newsletter of July 2005 (Tayf 2). The both fragments are also at the website of Semitisches Tonarchiv / The Audioarchive of Semitic languages of the University of Heidelberg (Germany) - <http://semarch.ub.uni-heidelberg.de/#archive>.



POTENTIAL IMPORTANCE OF MOUNTAIN CLOUD FORESTS AND WOODLANDS FOR CAPTURING

HORIZONTAL PRECIPITATION

By Hana Kalivodová, Martin Culek, Martin Cermák, Petr Madera & Hana Habrová

Horizontal precipitation is a very important source of water on Socotra Island where semiarid cloud forests with endemic dragon's blood trees (*Dracaena cinnabari*) occur. Arborescent dragon trees have characteristic straight long leaves arranged in dense leaf rosettes, forming **umbrella-shaped** hemispheric crowns as an adaptation for effective mist harvesting. As a result, dragon trees are typical representatives of semiarid cloud forests in geographically different areas around the world growing in seasonally arid climates with annual rainfall of 200–500 mm and mean temperatures of 18–20 °C.

Currently, measurements of horizontal precipitation in semiarid cloud forests are very rare and are mostly based on measurements using nets; only individual case studies have focused on throughfall below the canopy with in situ measurements. On Socotra, the **horizontal precipitation** has only been measured using nets during a short period from June to September 2004 during the summer monsoon season. In 2020, the importance *Dracaena cinnabari* and their populations for horizontal precipitation capture were estimated. The estimation was based on a detailed description of the aboveground biomass structure of the dragon's blood trees stands and populations. The aboveground biomass was described with non-destructive methods. An example of a well-preserved forest was measured in terms of the basic biometric characteristics of each tree, and the trees were divided into three classes based on crown projections. For each class, we took detailed measurements of one representative tree. All measured and counted growth characteristics were converted on the stand level. The tree population at the whole island level was

investigated using remotely sensed data.

The estimation of horizontal precipitation was performed using detailed and precise evaluation of the available climate data in half-hour intervals and the ambulatory direct measurements. In 2009, a fog drip was experimentally measured on Socotra Island in the peak areas of the Haggeher Mountains (1,467 m a.s.l.) under the canopy of *D. cinnabari* trees. It was calculated that the average fog drip was 0.18 mm per hour. According to extensive research on *D. cinnabari* biomass and its distribution, it was possible to estimate the total crown projection for all subpopulations (1,657,797 m²). According to the meteorological data measured at three sites at various altitudes (440, 705 and 1,450 m a.s.l.), the probability of fog drip situation (air humidity above 97%) and its duration were assessed. All dragon's blood tree subpopulations were divided into one of three altitudinal zones (lower plains, upper plains, mountain) as the input data for the total fog drip calculations

The mean annual horizontal precipitation below the crown of the dragon's blood tree was estimated to be **792 mm** in the highest altitudinal zone (951–1,545 m a.s.l.), 373 mm in the middle altitudinal zone (601–950 m a.s.l.) and 46 mm in the lowest altitudinal zone (180–600 m a.s.l.). Our model showed that the horizontal precipitation exceeded 40 % of the total annual precipitation, the total annual gain in horizontal precipitation captured by dragon's blood tree populations was calculated as 360,517 m³. The **decline** in the dragon's blood tree forest could cause the loss of additional water from the island's hydrological cycle—every single tree is capable to gain 4.5 m³ of water by means of a fog drip, but in the moun-



A typical view of the dragon's blood tree cloud forest, Skant, Socotra Island, photo by Martin Cermák



Even a tiny shrub of *Hypericum scrophulorum* (Hypericaceae) shows the ability to capture moisture from the air and yield fog drip (Mornheir, Socotra Island, 24.6.2009) photo by Martin Cermák

tains, it could be approximately **14.7 m³**.
The vegetation of semi-arid and arid areas is under intense pressure from civilization and extreme climatic conditions, particularly on Socotra Island. This paper has shown the ability of *D. cinnabari* trees to **capture** water from fog, which is a feature that is very important for this species itself as well as for its ecosystems and for the water regime of the whole island. This flagship tree species of Socotra Island is vanishing rapidly due to age and disturbances, and almost **no regeneration** or

young trees are present in the landscape; thus, a decrease in the island's water regime can be expected. Because *D. cinnabari* also acts as a shelter and a nursing tree for other plant species and related wildlife, the biodiversity of this unique island is also threatened.

MORE INFO:

<https://doi.org/10.1007/s12210-020-00933-7>

PARASITES IN A HOTSPOT

Raquel Vasconcelos, Beatriz Tomé, Ana Perera

Although **parasites** represent a major component of biodiversity, they remain poorly assessed, especially in remote regions such as Socotra, the largest and most biologically diverse archipelago in Arabia. In this study, we screened 26 species of reptiles from Socotra, including skinks, snakes, lizards, geckos, and chameleons, for apicomplexan parasites. Using genetics, we detected various blood and tissue parasites.

Skinks were the most parasitized reptiles (**Fig. 1**), which contrasted with studies from other areas. This is probably because skinks have more generalist diets and use a wider variety of habitats in Socotra than in those other areas. Geckos harboured the highest diversity of parasites in the archipelago (**Fig. 1**), which was expected given the many different species unique from Socotra. We also found a correlation between the size of the island and the diversity of parasites: the largest island of Socotra harboured a higher parasites diversity than Abd al Kuri, Samha and Darsa. These parasites were related to others found in

reptiles from Arabia, North Africa and Asia. However, almost all Socotran parasites were unique to the archipelago, probably representing undescribed endemic species.

This study emphasizes the **importance** of screening parasites in wild hosts from remote regions and of considering host ecology to understand disease transmission across taxa. Although Socotran vertebrates might be quite well known, the diversity of invertebrates, and specially microorganisms, such as parasites, needs to be explored if we want to achieve a clearer picture of its biological richness.

MORE INFO:

Tomé B, Maia J, Perera A, Carranza S, Vasconcelos R (2021). Parasites in a hotspot: diversity and specificity patterns of apicomplexans infecting reptiles from the Socotra Archipelago. *Parasitology*, 148: 42-52. <https://doi.org/10.1017/S0031182020002000>.

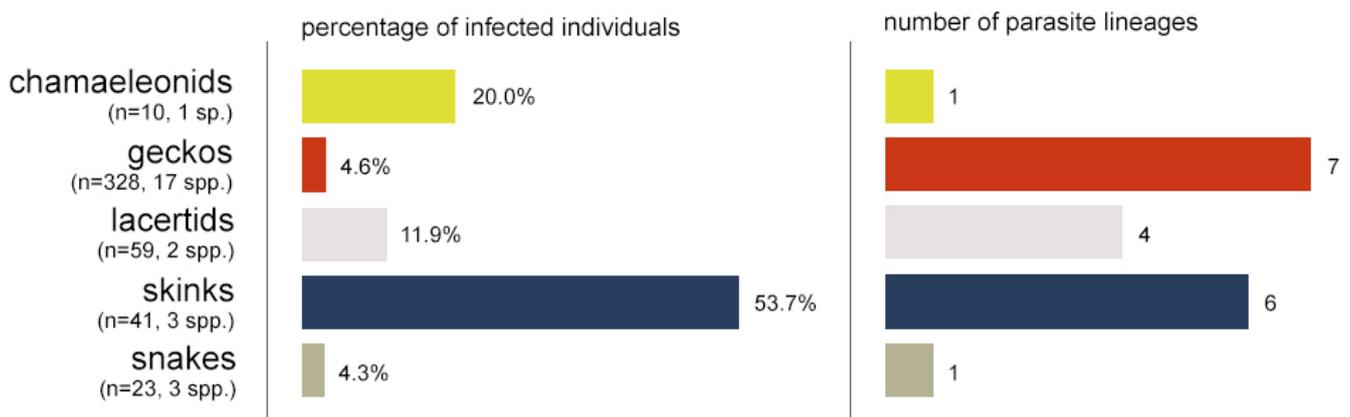
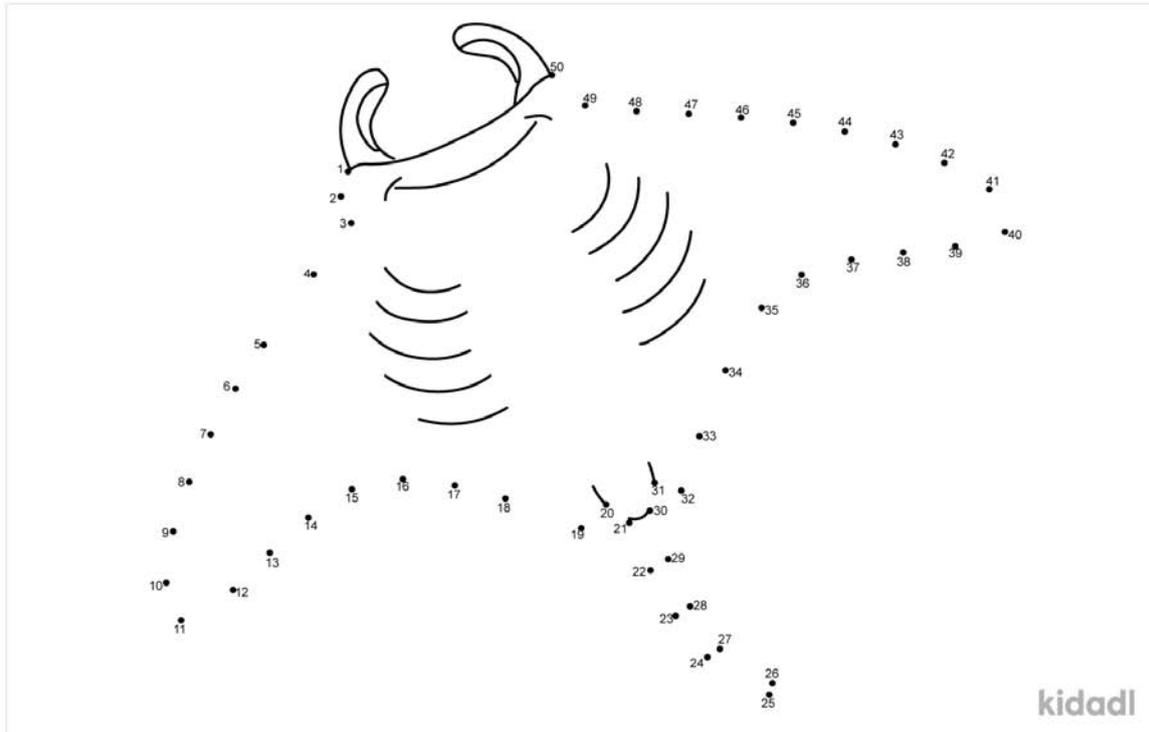


Fig. 1. Percentage of infected individuals and number of parasite lineages found per reptile group. The number of individuals (n) and species (spp.) sampled per group is given between brackets.

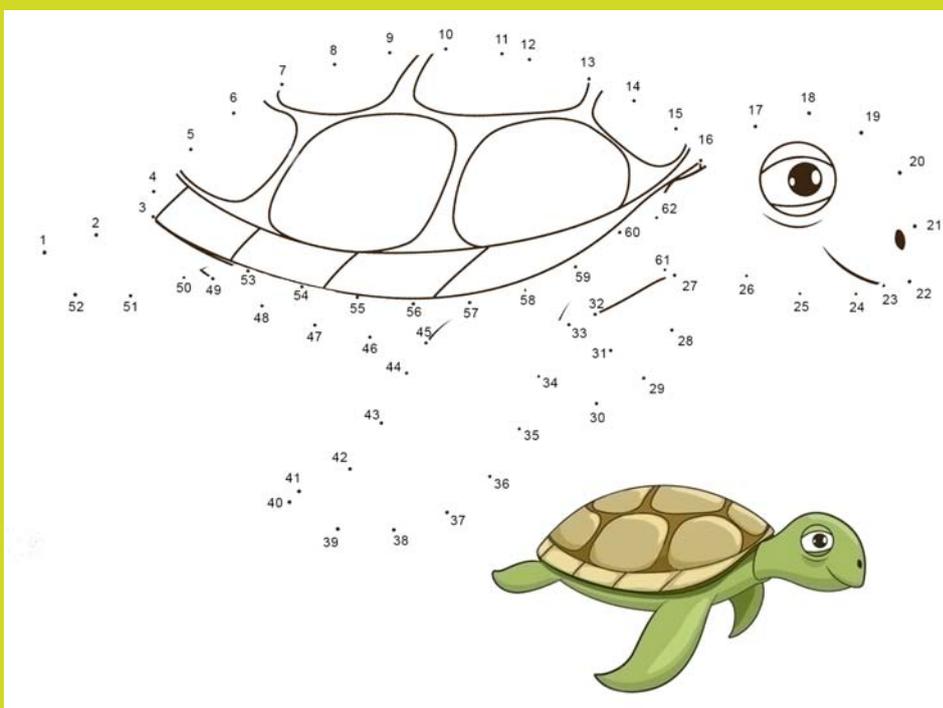


CHILDREN'S SECTION

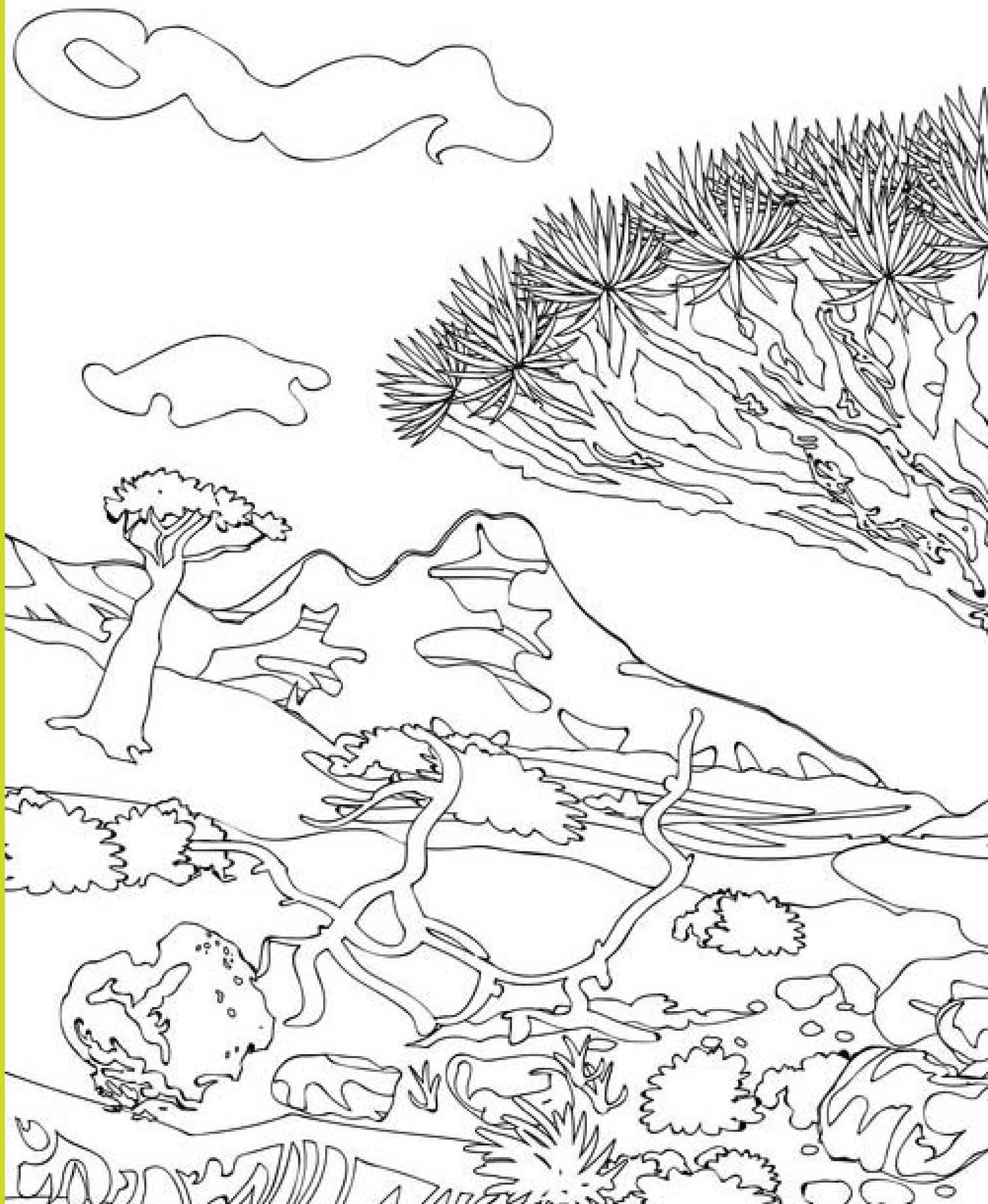
Did you know that sea turtles and dolphins are endangered in seas around the world? They need your help to protect them! What do these animals mean to you and how can you help them in Socotra? Here are some drawings to complete if you like! They can be in any colour you wish!

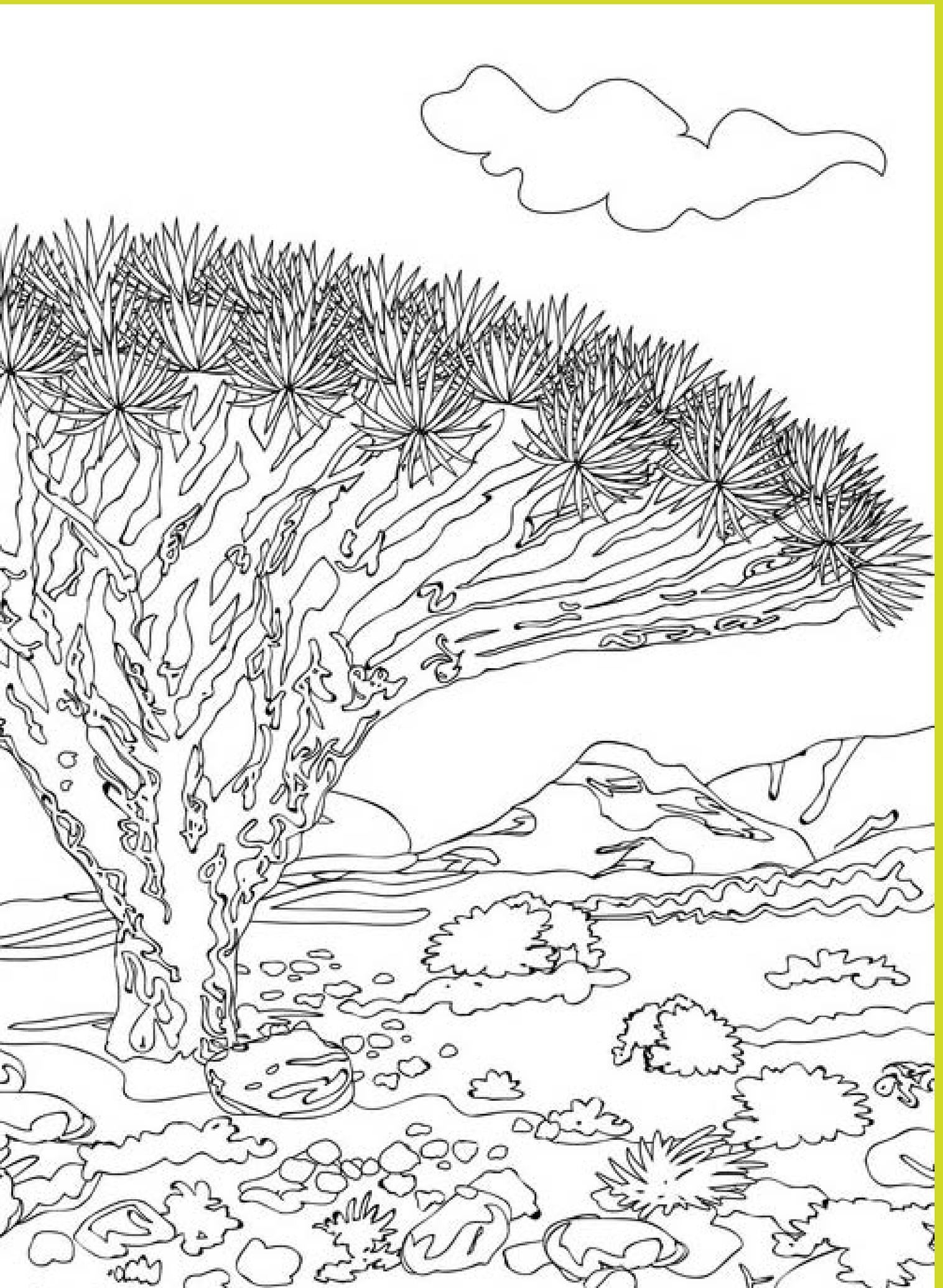


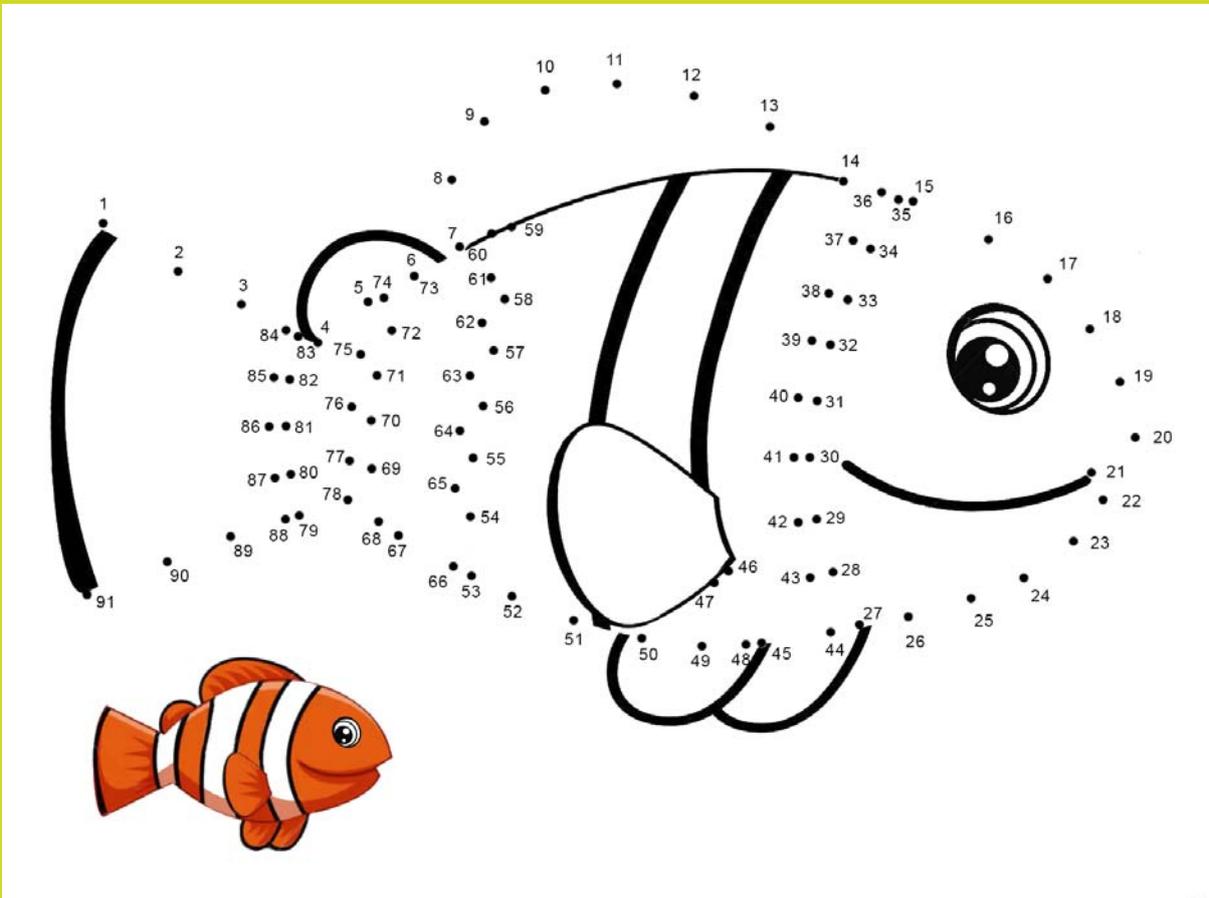
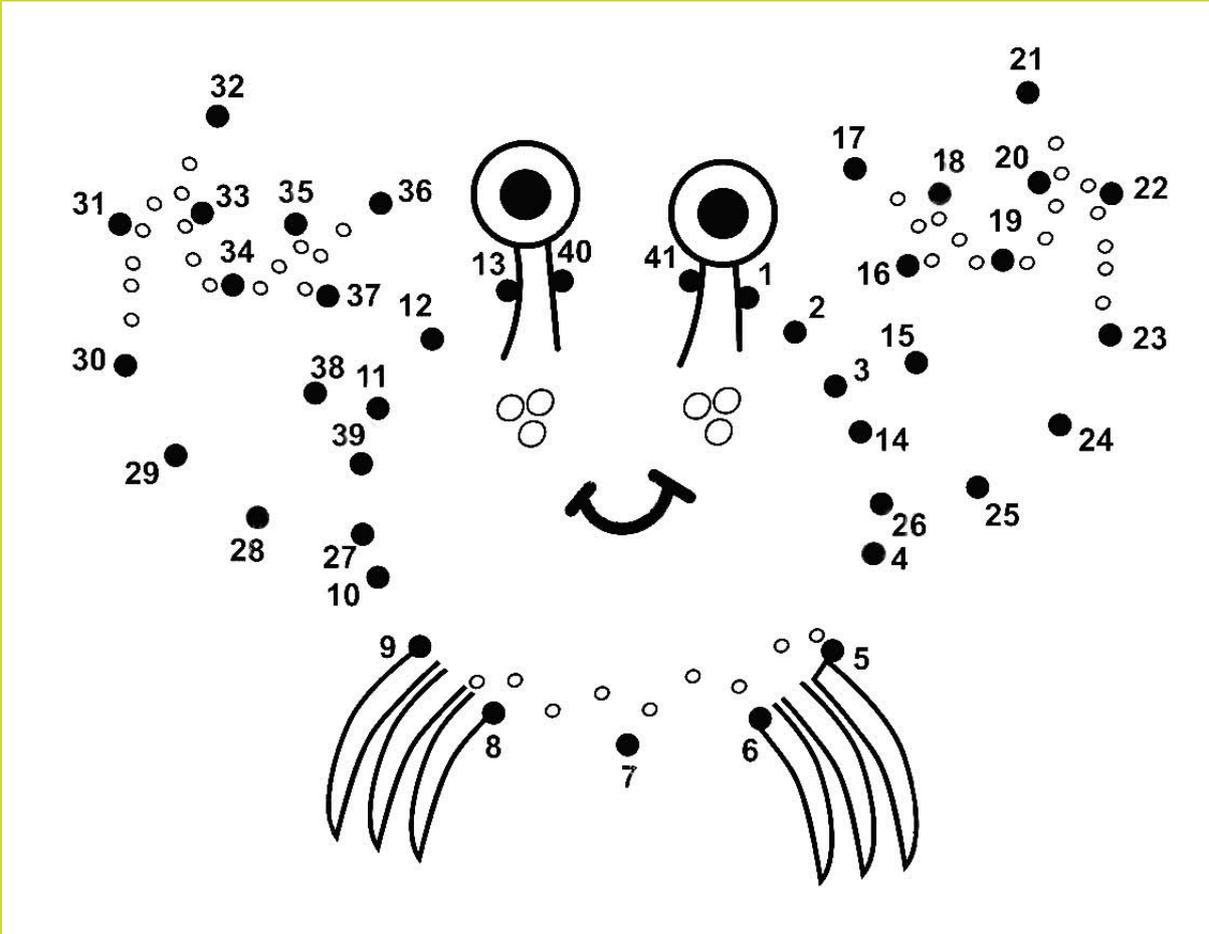
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NEW BOOK:

THE ORAL ART OF SOQOTRA

A COLLECTION OF ISLAND VOICES

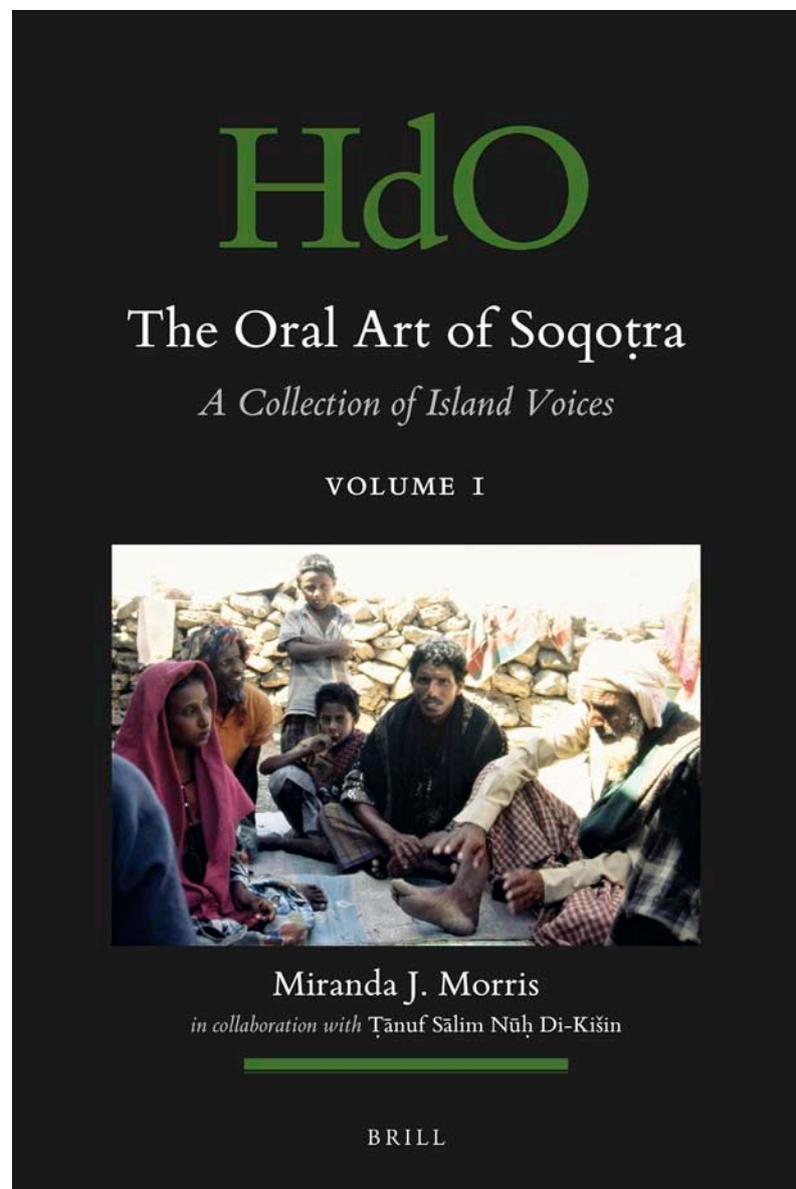
By: Tayf Team

On June 17th 2021, a **new book** appeared on the unique Socotri language. The following summary is presented on the publisher's website. "In the bilingual English-Arabic work, *The Oral Art of Soqotra: A Collection of Island Voices*, Miranda Morris and Tānuf Sālim Di-Kišin, in collaboration with Soqotrans from all parts of the island, present over a thousand examples of **poems** and songs, prayers, lullabies, work-chants, messages in code, riddles, examples of community wisdom encapsulated in poetic couplets, and stories centered on a short poem or exchange of poems. These were documented by oral transmission directly to the authors, or through **recordings** collected by them. They are presented in Soqotri (transcribed phonetically in Roman and in Arabic script), and in English and Arabic translation."

The book is three volumes with the overall title of **The Oral Art of Soqotra**. A Collection of Island Voices, the publisher is Brill in the Series Handbook of Oriental Studies. The Brill website shows 'Volume 1' but in fact it is one volume divided in three parts. The complete set is now available, as is the e-book. Dr M. Morris notes that the work is in fact presented in three languages: Soqotri (transcribed phonetically in Roman and in Arabic script), and in English and Arabic translation, and that it is possible to play the recordings by scanning the **QR codes** in the book with the smartphone camera. The FoS team wishes to congratulate Dr M. Morris and Tānuf Sālim Di-Kišin with their outstanding work.

MORE INFO:

The Oral Art of Soqotra, A Collection of Island Voices by Miranda J. Morris and Tānuf Sālim Di-Kišin (2021), Series: Handbook of Oriental Studies. Section 1 The Near and Middle East, Volume: 151. [E-Book (PDF) / ISBN: 978-90-04-44735-6 / Publication Date: 17 Jun 2021 and Hardback / ISBN: 978-90-04-44672-4 / Publication Date: 17 Jun 2021]. Available online via Brill Publishers <https://brill.com/view/title/55729>. Price (excl. VAT) from 599 USD.





MASS STRANDINGS OF PORCUPINEFISH IN SOCOTRA

By Catherine Cheung (cpscheung@gmail.com)

Recently, our dear friend Kay Van Damme sent Lyndon and I two photos of mass stranding of porcupinefish observed on Socotra beaches late March 2021. The photos were taken at the beach in Steroh along the southern coast of Socotra, however the same phenomenon was observed in several areas along the north coast as well, albeit in varying intensity (KVD, pers. obs.).

At Steroh, thousands of decomposing small fish could be observed over only a few tens of meters, which likely belong to the family *Diodontidae* (porcupine pufferfish or **porcupinefish**). They were seen along the beaches and in particular along the edges of the drying lagoon (*khor Steroh*), and the decomposition indicated a potential recent event (in the last weeks to months). According to Salem Hamdiah living in Qalaansiyah, the recent strandings started in October 2020 and occurred on several occasions since. Living in the north of Socotra, in Rosh, where the phenomenon was also observed, Wagdi Omar mentioned that it could be linked to “**rough seas**”. There are five porcupinefish known from around Socotra and potentially the strandings may include more than one species. The local people of Steroh find these strandings a real **nuisance** as the fish spines can easily cause wounds for bare feet (KVD, pers. obs.). The strandings may include more than one species. The photos sparked our curiosity, so here’s a light article on what I managed to discover about this phenomenon, mainly from the internet.

Coincidentally, a **similar event** also happened in South Africa around the same time, albeit of a different pufferfish species, *Amblyrhynchotes honckenii*, a species belonging to the family Tetraodontidae or puffers. The Daily Mail UK reported on the 29th March 2021 that hundreds of highly poisonous pufferfish were found on a beach in Cape Town. The mass stranding was discovered by Dr. Tess Gridley, Honorary Research Associate at University of Cape Town who focuses her research on bioacoustics in cetaceans.

In a statement, the South African Department of Environment, Forestry and Fisheries said, “*The fish mortalities in False Bay are exclusively of the evil-eye pufferfish with counts of 300 to 400 dead fish per km of shore.*” The department warned that the dead fish all carried the **neurotoxin** tetrodotoxin and should not be eaten. Tetrodotoxin is apparently more lethal than cyanide, paralyzing the diaphragm, causing respiratory failure and eventually death. One dog was reported to have been killed, according to the AfriOceans Conservation Alliance. Green turtles have also died or became ill from eating dead pufferfish in the Caribbean Sea.

While **no definitive cause** has been identified for this mass stranding event, an article in the Mossel Bay Advertiser laid out a range of potential causes of a widespread stranding event from Cape Town to Port Elizabeth back in January 2020. These included toxic algal bloom, stormy weather especially during pufferfish mass spawning events, dumping of bycatch or seismic testing associated with oil and gas exploration or military exercises. Notably, seismic testing or survey involves firing airguns repeatedly from vessels at tremendous volume to bounce bubbles off the seabed and return a profile of the geology beneath. It has been shown to harm or affect the behaviour of marine mammals, penguins, fish, squids, lobsters, scallops and zooplankton.

As an example, a 1958 paper published in the Journal of the Oceanographical Society of Japan gave a hypothetical explanation for the **migration** mechanism of the porcupine pufferfish *Diodon halacanthus* (*Diodontidae*) which also occurs around Socotra. It describes young pufferfish, having hatched in the southern region of Japan, getting carried northwards by the Kuroshio and Tsushima Currents into the Japan Sea over the summer months. Once inside the Japan Sea, they drift northwards far offshore and are rarely seen by coastal fishermen. From autumn to early spring however, the northwest

monsoon generates a drift current that carries the puffer southwards to the coastal waters. Stormy weather at this time may result in mass stranding of the puffer, a relatively common winter observation in Japan.



Thousands of porcupinefish (*Diodontidae*) stranded at khor Steroh and the surrounding beaches in southern Socotra, March 2021. Photo by Kay Van Damme

Wild weather has also been blamed for a 2018 mass stranding of a porcupine pufferfish species along-with hundreds of dead seabirds including petrels, prions and penguins along the Bay of Plenty in New Zealand.

To determine the cause of the stranding on Socotra, local **information** is needed. Here are a number of questions for local people of Socotra living along the coasts and researchers to help narrow down the cause of the event:

- Are there anecdotal records or **memories** of similar, perhaps seasonal, events previously?
- Do local fishermen know when and where spawning aggregations of pufferfish occur around Socotra?
- What was the weather and sea condition like in the period prior to the stranding?
- Did local fishermen observe unusual commercial fishing activities prior to the event?
- Was there any known seismic testing being conducted around Socotra during that period?

would encourage local researchers and villagers to talk to each other. Maybe this could be the start of a citizen science project? There is so much to learn from indigenous observations and by working together.



Close up of the stranded animals at Steroh, March 2021. Photo by Kay Van Damme

Furthermore, with climate change, rising ocean **temperatures** are driving changes in some species distribution. An alarming case concerns the shift of a poisonous pufferfish species *Takifugu stictonotus* (Tetraodontidae) northwards, breeding with an even more poisonous species *Takifugu snyderi* in the north-west Pacific. The hybrid fugu (pufferfish in Japanese) has variable toxicity and it is difficult to tell it apart from its parent species. This creates an extra food safety risk as fugu is a traditional Japanese delicacy. It requires highly skilled chefs to prepare them safely in different ways depending on the species. Confusion of species identification could result in human fatality.

The bigger picture though is the complex, sometimes unexpected, far-ranging consequences of **climate change** on ecosystems and the species, including ourselves, that depend on them for survival.

LINKS REFERRED TO IN THE TEXT (in order of the text) are pasted below:

<https://theconversation.com/profiles/tess-gridley-1174379>

<https://www.dailymail.co.uk/news/article-9412027/British-expat-finds-hundreds-lethal-puffer-fish-washed-South-Africa.html>

<https://www.frontiersin.org/articles/10.3389/fvets.2019.00466/full>

<https://www.mosselbayadvertiser.com/News/Article/General/likely-reasons-for-pufferfish-strandings-202001150847>

https://www.jstage.jst.go.jp/article/kaiyou1942/14/3/14_3_109/_article

<https://www.nzherald.co.nz/bay-of-plenty-times/news/hundreds-of-dead-birds-and-38-pufferfish-wash-up-on-mount-beach/LKKA5HYFPUETHQ22JBCWEMZRY/>

<https://www.bbc.com/news/blogs-news-from-elsewhere-40092580>

<https://www.popularmechanics.com/science/animals/a25462139/climate-change-pufferfish-mutant-hybrids/>

SCIENTIFIC PAPERS ABOUT SOCOTRA (2020)

By Kay Van Damme

In 2020, again a number of scientific publications about Socotra appeared in academic journals. More than a third of the articles in this period were directly facilitated through FoS activities (proceedings of the FoS Conference). Indeed, one of the core FoS missions is to promote high-quality scientific research about Socotra, and to help to communicate this research. In addition, a number of books appeared this year about the islands. Below is a brief compilation using the online academic libraries of Web of Science and Google Scholar. New animals described in this period include several invertebrates.

Several studies have involved Yemeni researchers from Socotra. A third of the publications in the *Rendiconti Lincei* special issue (the proceedings of the FoS meeting in Palermo 2019). Unfortunately all these publications have appeared in English, which is why we have translated the brief overview for Arabic readers in Tayf's Arabic version.

SPECIAL PUBLICATIONS ON TERRESTRIAL BIODIVERSITY

Two special issues including papers on Socotra terrestrial biodiversity, were published in 2020. Both collections are proceedings directly emerging from key conferences related to Socotra. The first appearing in 2020 was a special issue edited by P. Maděra and colleagues in the journal *Forests*. They are the proceedings of the first global **Dragon Blood Tree Conference** in Brno (CZ). All papers are available online for free, and Socotra-specific papers are mentioned below. The second is a special publication, devoted entirely to Socotra and edited by F. Attorre and K. Van Damme, entitled "**Socotra biodiversity research and nature conservation**" which appeared in the journal *Rendiconti Lincei, Science Fisiche e Naturali* (Attorre & Van Damme, 2020). The latter collection includes 13 papers about Socotra. The volume is a direct result from the 18th FoS Conference and AGM, held in Palermo in 2019. The contents of these publications have been incorporated in the IUCN Outlook Assessment of 2020 for Socotra (<https://worldheritageoutlook.iucn.org/explore-sites/wdpaid/903138>), which illustrates the importance of the FoS conferences for scientific research and conservation for the Archipelago.

TERRESTRIAL AND AQUATIC FAUNA

Socotra has many unique species, especially among the invertebrates. Discoveries include two new species of small and beautiful land **molluscs** (Neubert & Bochud, 2020; *Rendiconti Lincei*). Living in and around water, the **dragonflies** of Socotra are key **indicator** species. An **atlas** of all dragonfly species of Socotra is now available online for free (Van Damme et al., 2020; *Rendiconti Lincei*). A list of indigenous names is included for the amazing dragonflies. The freely available app can be used on a mobile phone, so that observation of dragonflies in the future can be easier for local researchers (www.dragonfliesofsocotra.org). The authors observed a decline of dragonfly richness over the last 50 years in the Hadiboh Plain, due to development, including the disappearance in this area of the endemic **Socotra Bluet** (*Azuragrion granti*).

Among the land vertebrates, there were a few studies this year on the bird populations of Socotra Cormorants, a species that, despite its name, is not unique to Socotra. Researchers from Portugal and Spain looked into the **parasites** living in Socotra's endemic **reptiles** and they found high diversity of parasites, with probably several new species (Tomé et al., 2020; *Parasitology*). These parasites are not dangerous to human health, and the Socotran reptiles are **harmless**.

THE RED PALM WEEVIL AND OTHER INVASIVES

Invasive species do not belong to Socotra. They are a major **threat** to biodiversity, especially on islands. They may lead to the **extinction** of entire species, as they did in several other islands in the world. Three new animal records were added to Socotra's "blacklist" of exotics this year. One is the Mediterranean Recluse Spider, a small toxic **spider** which may cause harm to human health by biting people (Hula & Niebodova, 2020; *Rendiconti Lincei*). The species likely came on the islands with wood and other materials for building. It is most likely this invasive spider is the reason of a new local **story** that states that "*researchers have added poison to the scorpions on Socotra*", because in the last few years people have complained of stronger toxic reactions (to this new spider). However, scorpions cannot be made more poisonous, and researchers did not bring this poisonous spider: it came by trade and import of materials from other countries, a known pathway for invasives. The other two new records are invasives that affect **palm** trees in Socotra. The authors Witt et al. (2020; *Rendiconti Lincei*) describe how the **Red Palm Weevil** and the Dubas Bug, both imported with exotic palm trees, may lead to a true devastation of the local date palm culture if no action is taken. The import of exotic plants and animals on Socotra without **biosecurity**, is dangerous to nature, yet also to human **health** and livelihoods.

FLORA

There have been a few studies on plant systematics and identification this year, which show that plant **biodiversity** of the island is still higher than we know. One study presents a brief overview and identification of four species of charophytes (**stone-worts**) in Socotra, aquatic macroalgae which are common in coastal wadis, but which have not been identified well until now (Zalat et al., 2020; *Thalassas*). Among other small plants, **moss** studies indicate a few new records for Socotra (Kurschner & Frey, 2020; *Nova Hedwigia*). One very preliminary molecular study of *Turraea socotrana* suggests that western and eastern populations might be separate (Giovino et al., 2020; *Rendiconti Lincei*) and even *Boswellia socotrana* may be split in two (Lvoncik & Repka, 2020; *Novon*). A new study on the distribution of the Socotran Cucumber Tree is discussed elsewhere in this volume of Tayf (Habrova et al., 2020; *Rendiconti Lincei*).

DRAGON'S BLOOD TREES

Dracaena cinnabari is the best researched plant on Socotra, and likely the best studied Dragon Blood Tree in the world. Several studies contributed to the knowledge of this important tree again this year. The majority of these studies were carried out by Mendel University team in Brno, Czech Republic. Maděra et al. (2020; *Forests*) provided a **review** of all Dragon's Blood Tree species in the world and the current state of knowledge. Scientific conditions of **seed germination** was studied by Bauerova et al. (2020; *Forests*); more than 80% of *Dracaena cinnabari* seeds germinate at temperatures of 26-30°C, showing there is hope for this species to grow if it is kept away from goats. A step towards a better **age estimation**, which is very difficult to determine because no year rings can be counted in this species, was done by Maděra et al. (2020; *Rendiconti Lincei*).

The Dragon's Blood Tree plays important roles in Socotra. A study showed that individual Dragon's Blood Trees may host a large proportion of endemic **reptile** species, including one **endangered** gecko that only lives in these trees, nowhere else in the world (Vasconcelos et al., 2020; *Forests*). As described earlier in this edition (page 16) water capture by these remarkable trees was investigated in detail, showing that every healthy Dragon Tree on Socotra catches **water** from horizontal precipitation (mist) and transfers the excess to the ground, adding up to 40% more than without its presence (Kalivodova et al., 2020; *Rendiconti Lincei*). It means that the loss of Dragon Trees in Socotra may even affect the availability of water on the island. **Local management** systems of Dragon's Blood Trees are going on for centuries in Socotra, but they might also damage the trees if too many wounds are inflicted on the same tree (Al-Okaishi, 2020; *Forests*).

PHYTOCHEMISTRY

The chemistry of Socotran plants yields often quite some interest. One study appeared on the Dragon's Blood Tree **chemicals**, which can be used to test purity of the red resin (beta-caryophyllene; Al-Fatimi, 2020 in the journal *Molecules*). Also the chemistry of the endemic Socotran **Pomegranate** (*Punica protopunica*) has been reviewed. This has a strong antioxidant capacity among other medicinal properties (Guerrero-Solano et al., 2020; *Plants*).

ECOLOGY & CONSERVATION

Lessons learned from the joint **mangrove** project by FoS and ARC-WH together with the Al Tamek Association and EPA in Ghubbah, appeared in a publication *World Heritage and Sustainable Development in Africa: Implementing the 2015 policy*. It discusses a sustainable development approach as a credible means of meeting the needs of disaster-affected areas (Abdelhaleem et al., 2020; *African World Heritage Fund*).

Two papers investigated the terrestrial environment through the analysis of **satellite** imagery, using Collect Earth to assess tree cover and density (Riccardi et al., 2020; *Rendiconti Lincei*) and assessing land productivity dynamics (Rezende et al., 2020; *Rendiconti Lincei*). In these studies it is clear that Socotra vegetation is part of a highly **dynamic** system, and the vegetation is being affected by direct (density of population and roads) or indirect human impacts (climate change, erosion). Closer on the ground, important work has investigated the **ecological preferences** of the **reptile** communities in Socotra, indicating the importance of healthy vegetation, but also of stones and other ground cover (Fasola et al., 2020; *Rendiconti Lincei*). In relation to the satellite work on vegetation, the reptile ecology study indicates that threats to the vegetation may also affect these animals strongly.

MARINE FAUNA

A few papers appeared on **marine** fishes in Socotra including updates on identifications of 23 new records of commercial fishes (Bogorodsky et al., 2020; *Zootaxa*). A new record was mentioned of the Gorgeous Swallowtail (*Megathias natalensis*), a beautiful fish of the Indo-Pacific, found near Abd al Kuri (Zajonz et al., 2020; *Acta Ichthyologica Et Piscatoria*). One study appeared on the distribution of the **Striped Marlin** which is also found around Socotra, a species that is globally Near Threatened and overfished in the Indian Ocean (Rohner et al., 2020). The **overuse** of marine resources, through fishing pressures, is a major threat to the rich fish **diversity** of the islands.

CLIMATE & CLIMATE CHANGE

The **changing climate** (drought and cyclones) has effects on the environment in Socotra, in combination with overgrazing. Researchers from Czech Republic analysed satellite images of ca. 60 years from Homhil area, showing a huge decline of *Boswellia elongata* stands over this period (nearly 70% decline). Preliminary predictions indicate that

if the trend continues, only 30 trees will be left in this area by 2036, so **extinction** of these unique populations could happen in our lifetimes. To reverse this, replantation is very important. One study on the **paleoclimate** of Socotra, derived from **cave** stalagmites and stalactites indicates that the island was covered in dense vegetation in a very humid period that came just after the Last Glacial Maximum ca. 16,000 years ago (Therre et al., 2020; *Climate of the Past*). Rich forests on the Socotra plateaus before large populations of humans (and goats), can now be barely imagined.

SOCIOLOGY, LANGUAGE AND ANTHROPOLOGY

A number of articles related to Socotra, appeared by N. Peutz in the book *Islands of Heritage*, such as *Heritage in Times of Revolution*. Two volumes of a book written by S. Elie appeared, entitled *A Post-Exotic Anthropology of Soqotra* on the author's observations on sociology. Regarding the unique language, V. Naumkin wrote about specific characters related to nouns and the plural.

OTHER

An interesting article appeared online (Lackner & Eryani, 2020; *The Century Foundation*) entitled **Yemen's Environmental Crisis Is the Biggest Risk for Its Future**. It mentions the effects of climate change on Socotra's environment (cyclones), but on a wider scale the risks of environmental problems and water issues to the country's future.

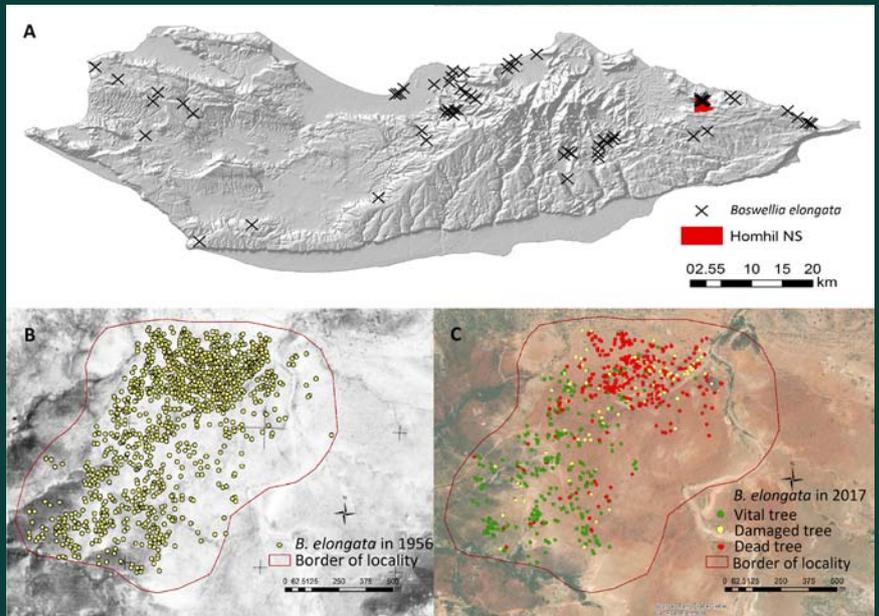
An unusual article appeared by the influential **ant-specialist**, writer and famous National Geographic photographer, Mark Moffett. Mark visited Socotra in 2010 (accompanied by two members of FoS, L. Banfield and K. Van Damme, guided by Mohammed Amer and Ismael Salem). Despite the fact that Mark had travelled all over the globe, the people of Socotra had left a lasting **impression** on him a decade later. The opinion article is entitled "*Respecting Nature, Respecting People: A Naturalist Model for Reducing Speciesism, Racism, and Bigotry.*"

In the paper, Mark explains how he was deeply **impressed** by the **connection** between humans and their environment on Socotra. He writes in particular about how kindly the herders treat their goats. His impression of this important connection is the start of the article, in a critique on how the western world may have largely lost this respect for nature and life. Mark wrote: "*In Socotra, I was struck, always, by the spiritual connection between herder and goat. Herders, who knew their individual animals well, would cradle the animal to be slaughtered. They would caress it, sing to it. The goat's sacrifice wasn't taken lightly. To eat isn't to be superior. As remarkable as the Socotran respect for animals and nature was their nonviolent behavior toward each other.*"

This is true for the traditional ways of the Socotrans, and the way people on the island have treated visitors for a long time.



Balfouria nitida, a new mollusc from Socotra (after Neubert & Bochud, 2020). The name "nitidus" means "shiny, pretty" in Latin.



Picture from Lvončik et al. 2020: a Socotra Island, distribution of *Boswellia elongata* in 2013, after Lvončik (2013). The study area in the northeast of the island, Homhil Nature Sanctuary, is marked in red. b Depiction of *B. elongata* trees on Homhil in 1956. c Depiction of *B. elongata* trees in 2017



Stonewort (*Chara* sp.), a group of freshwater macroalgae, in a wadi in Momi. A new study (Zalat et al., 2020) identifies four species. Photo by Kay Van Damme



National Geographic photographer Mark Moffett and partners, Socotra 2010. His visit resulted in a lasting impression of the connection between man and nature in the island. Photo KVD



The joint mangrove project of FoS and ARC-WH in Gubbah, with the local Al-Tamek Association, as a good practice example (Abdelhaleem et al., 2020). Photo KVD



The beautiful Gorgeous Swallowtail (*Meganthias natalensis*) was reported in 2020 near Abd al Kuri (Zajonz et al., 2020). Photo from Fishbase ©



The Red Palm Weevil is a dangerous invasive species that destroys palm trees on Socotra (after Witt et al., 2020). Photo KVD

MODEL EXAMPLE OF INVOLVEMENT OF LOCAL COMMUNITIES FROM SHIBHON AND RAS AYRE VILLAGE IN **BOSWELLIA** CONSERVATION

SUPPORTED BY THE FRANKLINIA FOUNDATION

By Salem Hamdiah, Mohammed Amer, and Salem Keybani

The Frankincense trees in Socotra are all unique to the archipelago and **endangered**. Through a new project, supported by the Franklina Foundation, and international institutes, a local team and EPA are working closely together with local communities. The goal is to support **local communities** in their protection of the unique *Boswellia* trees in Socotra.



A new stony wall was built surrounding the old broken fence in Ras Ayre village where young dragon's blood trees have been grown since 2006. Thanks to the new wall (supported by the Franklina project and by Eva Zubeck's donation, and constructed by the Keybani family), *Boswellia dioscoridis* and *Boswellia ameero* seedlings will be planted here among young dragon's blood trees (photo by Salem Keybani).



In Ras Ayre village, there are 33 families. Each family will be donated 3 individual protections. The metal constructions were specially designed and custom-made in the project to protect individual seedlings/trees from goats. The local communities wish to take care of the seedlings of *Boswellia dioscoridis* that were collected in the proximity of their village. This species produces valuable resin that is harvested by local people from nearby localities in the wild, therefore providing a future local income and supporting livelihoods. They will plant their own trees for the purpose of resin harvesting and thus the pressure on the natural population can be decreased in the future. This activity has a large educational value, answering to a direct request by local communities to protect and to replant the culturally important Frankincense Tree (photo by Petr Maděra).



Awareness meeting in Shibhon elementary school with the local children, focusing on the importance of *Boswellia* in Socotra with EPA (Socotra Branch) and representatives of Mendel University and Ghent University (Belgium). Important part of the awareness activity was the replantation of four *Boswellia ameero* trees in the school yard. Children will take care of the small trees every day to remember the importance of *Boswellia* conservation (Photo by Petr Maděra).

More info about the project

https://fraxinus.mendelu.cz/tropicalforest-ry/ceske_lesnictvi_ve_svete/jemen/conservation-of-the-endangered-endemic-boswellia-trees-on-socotra-island/



ABDULRAQEB AL-OKAISHI GRADUATED AS DOCTOR OF PHILOSOPHY AT MENDEL UNIVERSITY IN BRNO

By Petr Madera (petrmad@mendelu.cz)

He started his PhD study at Mendel University in Brno in 2018. His thesis “Ecology and ethnobotanical usage of *Dracaena cinnabari* on Socotra Island – Republic of Yemen” was made as a set of 4 original scientific articles. First two papers focused on first in situ sap flow measurement in Dragon’s blood tree, written with cooperation of his supervisors prof. Nadezhdina and prof. Madera, here he learned how to write **scientific articles**. Last two papers he made independently including field research. One paper was focused on traditionally way of Dragon’s blood tree resin harvesting and its impact on tree vitality. Second paper, he devoted to research of phytotoponymes on Socotra Island, he found toponymes related to the Dragon’s blood tree in areas, where currently no trees occur and proved this way previous larger distribution of this flag tree species on the island. Abdulraqeb Shamsan Al-Okaishi successfully graduated in March 2021 in front of his scientific committee and reviewers of his PhD thesis, which were prof. Fabio Attorre from Sapienza University in Roma, Dr Kay Van Damme from Ghent and Mendel Universities and Dr Alan Forrest from Royal Botanic Garden in Edinburgh. He is probably one of the first Yemeni doctor of philosophy to have conducted his research on Socotra Island, and certainly the first to graduate in Forest Phytology. He is now a very well educated specialist which can substantially help to improve conservation of rare and endemic forests and woodlands on Socotra Island.



Abdulraqeb on Dragon Tree Conference in Brno, September 2019. photo Martin Čermák

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Al-Okaishi, Abdulraqeb Shamsan. Local Management System of Dragon’s Blood Tree (*Dracaena cinnabari* Balf. f.) Resin in Firmihin Forest, Socotra Island, Yemen. *Forests*. 2020, 11 (4). <https://www.mdpi.com/1999-4907/11/4/389>

Al-Okaishi, Abdulraqeb Shamsan. Exploring the historical distribution of *Dracaena cinnabari* using ethnobotanical knowledge on Socotra Island, Yemen. *Journal of Ethnobiology and Ethnomedicine*. 2021, 17 (1). <https://doi.org/10.1186/s13002-021-00452-1>



DETWAH LAGOON

THE FIRST AND ONLY RAMSAR SITE OF THE REPUBLIC OF YEMEN

By Kay Van Damme

In 2000, the beautiful Detwah (or Ditwah) Lagoon in the Qalansiyah District, was declared a Nature Sanctuary according to the Socotra Conservation Zoning Plan. This designation has been given on Socotra to areas with special habitats and rich yet vulnerable biodiversity.

Detwah is a **mixed** terrestrial-marine site, hosting interesting land features and a rich marine biodiversity, including many **sea birds**. The brackish lagoon is intermittently connected to the sea, being separated by a relatively narrow sand bank. Inside, there is a sheltered sea grass habitat, full of life, allowing for young fish to reproduce. It is an important place for a few interesting species, such as the **Leopard Stingray** (IUCN Red List Status: Vulnerable) and the Blue-spotted Ribbontail Ray (IUCN Red List Status: Near Threatened). The place is also hosting at least 32 species of which 10 are resident breeders. The amazing Socotra Cormorant also breeds in this area and several plant species grow here that are endemic to Socotra and included in the IUCN Red List. Unfortu-

nately, it is not in the list of Important Bird Areas in Socotra of 2016. Detwah is also an attractive place for ecotourists, enjoying the beautiful panoramic view over the lagoon from the cliffs. A few years after Detwah became a Nature Sanctuary, the beautiful site was **threatened** by building of the Qalansiyah road, which was planned to go through the area. In 2003, the year in which Socotra became a UNESCO Man and Biosphere Reserve, there was a fierce struggle over the conservation of the lagoon. EPA and UNDP strongly lobbied through petitions and meetings to try and divert road-building threats. Successfully, the Qalansiyah **road** was completed in 2006 without causing damage to Detwah. The old half-finished road over the cliffs can still be seen. It is a testimony



Detwah Lagoon Nature Sanctuary, Yemen's only Ramsar Site. Tracks of motorized vehicles are visible in the sand, a sign of disturbance (KVD, March 2021)

of the important efforts of conservationists to save this area. The entire event also resulted in a decree (in 2004) to reduce potential damage by road construction in Socotra.

A few years after the declaration as a Nature Sanctuary, in 2007, Detwah Lagoon was declared as a **Wetland of International Importance**, better known as Ramsar Sites (no. 1736). It is therefore the first (and so far the only) Ramsar Site in the Republic of Yemen. Countries that have agreed to be part of the Convention of Wetlands (Ramsar, 1971), have committed to declare at least one wetland in the List of Wetlands of International Importance. Worldwide, there are over 2000 of these important wetlands, designated by more than 160 countries. Yemen is part of this convention, and perhaps more wetlands with global importance will be declared in the future. Most recently, the lagoon has been visited by large groups of people for recreational purposes, such as picnics and family gatherings. People group around the lagoon in considerable numbers (>40) at the same time), including motorized vehicles (cars, motorbikes). Teenagers test the maximal power of their **motorcycles** in the sand, leaving traces. Plastic **rub-**

bish accumulates in the area, subsequently either transported by wind and floods to sea, or accumulating near the cliffs in places where people seek shadow. The intensive recreational activities and traffic in the area undoubtedly creates a disturbance for local wildlife (breeding birds) by the sheer number of people as well as the loud noises by the motorised vehicles now driving around the lagoon. The rubbish may form a **threat** to marine wildlife, as plastics are well known to form a threat to ecosystem and human health. Several elders of Qalansiyah and members of EPA have expressed their concerns about a potential decline of nature awareness in the island among the younger generations and the need for efforts to (re)connect young people to nature. In addition, the high density of **stingrays** may pose a health risk for unaware visitors swimming in the lagoon.

Hopefully, the globally important wildlife and the pristine view of the wetland at Detwah can be safeguarded in the future. After all, this is Yemen's only Wetland of International Importance and one of the few Nature Sanctuaries on Socotra, vulnerable and worth treating with gentle **care**.



Recreational activities may negatively affect the unique and endangered wildlife at Detwah Lagoon Nature Sanctuary (KVD, March 2021).

Sources: the above text is based on the information of Detwah Lagoon included on the Ramsar webpages <https://rsis.ramsar.org/rsis/1736?language=en> and the article by Eduardo Zandri entitled “Hadiboh-Qalansiyah road and Ditwah lagoon” in Cheung & DeVantier (2006: 348-349). On potential impacts of road building on Socotra, see also “Socotra’s Road to Ruin” by Sue Christie (Geographical 77: 60-64). Recent observations are from March 2021.



Cave formations in Socotra Island. Photo by Dirk Van Dorpe.

CAVES, DJINNS AND ADVENTURE

IMPRESSIONS ON SOCOTRA BY TWO SPELEOLOGISTS

By Tayf team

Speleologists are people who spend a great deal of their time in cave systems. They have technical expertise on how to climb and move in caves, they know how caves are formed and why, and they have a great interest in protecting the geology, archaeology and nature within. The karstic limestone of Socotra is like a swiss cheese (full of holes/caves), which has been explored for years. The following is a brief interview (May 2021) by KVD with two Belgian speleologists, Mr Peter De Geest and Mr Dirk Van Dorpe. They know the caves on Socotra like no other and they have played an active part in FoS for many years.

How did you first learn about Socotra?

Peter – The first time I heard about Socotra was in 1999. I was doing my studies as a geologist at Ghent University and I heard Dr Dirk Van Damme in a conversation on the phone with his son Kay Van Damme, who had briefly returned from Yemen. Kay was very enthusiastic, talking about a strange cave (Hoq) where he had found water and some interesting new species. He mentioned that this enormous cave went much deeper, and that there was some ancient pottery inside, but most people didn't dare to go further. This sparked an idea in my mind and I instantly wanted to go there at a next occasion and to explore the caves as a speleologist. Thanks to Kay's help and connections on Socotra, in 2000, I gathered a group of highly trained Belgian speleologists and we organised our own visit to Socotra, on our own personal funds. We called it the Socotra Karst Project (SKP), which would go on for another 9 expeditions after. The first time, we spent ten days in the beautiful Sana'a, requesting the government's permissions to explore the island. After obtaining the necessary permissions, we went for two weeks with 8 people from Belgium, accompanied by 2-3 people from Socotra including our good Socotri friend Ahmed Duhahen. EPA staff and the UNDP-GEF project were very supportive on the ground at the time, even letting us stay in the project house in Hadiboh. We spent our new year period in Socotra that year and Hoq was the first cave I ever went into on Socotra. We discovered the famous ancient wooden tablette in Socotra during that visit. It looked so recent that we didn't realise it was so old until much later.

Dirk – I knew Peter through the active speleological world in Belgium. He was so enthusiastic about Socotra after his first visits. I joined the seventh SKP expedition to Socotra so my first visit was in 2005. The team needed a free speleologist photographer, who was crazy enough to make underground pictures. We all paid for our own expedition. Hoq was the first cave I ever went into, and Dr Ingo Strauch was with us, with all his knowledge of ancient writing.

What were your first impressions of the island?

Peter – Huge! That was my first impression, such an enormous cave! I remember that we took a very long walk to get to the entrance of Hoq, first following the escarpment up and then only up, turning towards the cave. Carrying all our equipment, it took us more than two hours to get there. Later we saw there was a much more direct way, walking straight up. Our lamps were not strong enough for

the first visit, we had to use at least 6 "tikka" lamps to illuminate the chambers for photos. One tikka could not even reach the sides or ceiling of the cave so we did not know how large it was at first. During this and following expeditions, we mapped the cave in detail.

Dirk – Peter is right, Hoq cave was huge! I remember thinking also that the temperature was surprisingly hot, and the geological formations were very nice. The temperature was about 29°C inside and humidity was very high. Cave temperatures always correspond to the annual average of the outside temperature in that area so I was surprised how high it is. I was sweating more than outside the cave! We needed a lot of water.

How many times did you go to Socotra?

Peter – We did 9 SKP expeditions in total and an additional extra expedition with a national geographic funded visit to map inscriptions in Dihassi cave, which I kind of consider the unofficial SKP 10. I also went on an expedition with Nicolas Hulot (note: former film maker Nicolas Hulot became the Minister of Ecology and Solidary Transition in France in 2017-2018) for the Ushuaia documentary where we also showed Hoq.

Dirk – I went 4 times, including the national geographic funded visit in 2015. The SKP expeditions invited speleologists and scientists who wanted to explore the caves and explained about cave importance to the local people.

What were the SKP expeditions?

Peter & Dirk - We worked together with local authorities and local guides to explore and map the caves of Socotra. Initially we wanted to check if there were any caves, because from the literature it was not clear how extensive the karst was. Some publications said that there might not be many caves at all, which clearly was inaccurate at the time. We wanted to know as speleologists if there was a potential for caves which often harbour a different world. When we explored the archaeology, we bumped in many artefacts in Hoq and we encountered many new biological species with Kay. We were also investigating the past climate which can be examined from cave formations, to see what we could learn from the caves about Socotra's past climate history. The SKP expeditions were entirely voluntarily, none of the international members were paid for their visits, and all materials and travels were personal funds.

What was the most spectacular moment you remember from Socotra's caves?

Dirk (enthusiastic) – There are such enormous and bizarre animals in these caves! The first thing that jumps to my mind is the first time I saw the huge whip spiders (editorial note: this is *Phrynichus heurtaultae*, *Amblypygii*, first discovered and collected by KVD in Hoq cave in 1999, an endemic species to Socotra island). They walk sideways like a crab, but very fast! They are amazing animals and really big. When I tried to put my hand next to the animal for the photo, it moved away very rapidly, sensing my presence with its feelers or legs! Absolutely fascinating, I never saw anything like it during all my decades as a speleologist. The most impressive cave for me was Tseetaf Cave, with its formations, and Hoq, an archaeological treasure. I especially loved the eccentrics, a form of calcite formations in caves that you don't see in Europe.

Peter – I had goosebumps when we discovered the ancient stupa and the impressions of human feet left there thousands of years ago, while we were together

an enormous thrill. Its formations were eroded and perhaps less spectacular, but from a human physical perspective as a speleologist, exploring the largest cave of the Middle East (Ghiniba) to the end was a real accomplishment by the team of almost Olympic proportions. It really takes the most physically trained individuals in the world to be able to deal with this cave to the end.

Should caves be protected? What do you wish to say to people who want to visit a cave in Socotra?

Peter – Yes! Caves should be protected at all cost, they are really important! We made a walking path in Hoq during our expeditions to reduce the damage to the cave by visitors, we hope it is still there. The path goes just until the water part, not beyond. Beyond that it is only for specialised teams and for scientific research, and some areas are not safe.



Socotra's largest whip spider, Phrynichus heurtaultae in Hoq Cave. It is an endemic species, only found on Socotra island. Including legs, the animal can be larger than an adult hand. Photo by Dirk Van Dorpe.



Peter De Geest with two Socotri key team members, Ahmed D. and Ahmed S. who took part in the expeditions for years. Photo by Ilse Bessens

er with Ingo in Hoq Cave (note: Dr Ingo Strauch is a specialist in ancient scripts). Ingo was ecstatic. The others stood still in admiration as he read the ancient Brahmi texts and names out loud while translating them in full enthusiasm. It felt like a genuine time travel, hearing texts of about 2000 years old. I realised it was the first time in all these centuries that the names were spoken out loud in this exact place where they were written down in mud on the cave formations. It was a truly magical moment, realising only a few people on the planet can read these long forgotten scripts nowadays. I still get goosebumps when I talk about it now. Hoq left a lasting impression for its richness, a geological and archaeological archive containing mysteries about the history of Socotra and of the region. For people who love extreme adventure, Ghiniba was from an exploration point of view

People should really stay on the track following a rope and staying on course, to preserve the sensitive calcite formations and the valuable inscriptions which were done in mud. It is also for their own safety – parts of the cave are not so safe, and this is especially true for the other cave systems in Socotra (like Ghiniba, which is very dangerous). Many years ago, we made an actual management plan for the caves, in particular for Hoq. There were several important points in it. For example, cave visits should always be with official guides from the Halah Area, originally from Terbak/Rosh, who should retain a fee to manage and take care of the cave. The first local guide was Omar from Rosh, followed by his sons and daughters in knowing Hoq well. Secondly, the visits should be monitored with logbooks to have an idea about

how many people visit and to potentially put a maximum to the number of visits per time. In 2010, Kay, Ismael and me used the logbooks that were with Omar and Wagdi to assess these amounts. We found that over 735 tourists had visited Hoq in 2009-2010 of which 61% were Europeans. This is too much, especially knowing that there were sometimes over 150 people per month and in peak season more than 30 per day! Damage to the cave archaeological remains and the formations were observed at the time, which is irreversible. All visitors should be conscious that this is an important part of Socotra's history. So the most important to me is the request to visitors to stick to the path, to listen to the guides from the area, and to not touch any cave concretions and especially not ancient writings or remains – leave no marks. Rubbish is of course not allowed in the cave, people from the area are trained, but perhaps could receive more training on cave awareness. Lights for guides could be provided and for tourists, to avoid bad lights and empty batteries that sometimes are found discarded inside. Simple leaflets, and perhaps a small visitor centre in Rosh could be interesting for people to explain the cave rules before going in. We also advised against using any kinds of generators or fixed lights in the cave, as this may cause growth of algae on the stones and destroy the cave ecosystem.

In any case, huge tourism activity could destroy the fragile caves of Socotra and therefore visitor awareness and responsibility is really important. The local guides are very knowledgeable and know which areas to protect in the cave and the fixed path. In some smaller caves there is also a lot of guano from bats. Although we never had toxoplasmosis, there could always be some risk.

Dirk – I agree with Peter. In Europe we tell people to be very careful in caves that are much less valuable than in Socotra. Caves are also not souvenirs, whatever is in a cave, should stay inside.

How was your experience with the Socotri people?

Peter – The Socotri people are amazing. I still think of the people in such a nice way, their kindness and hospitality are truly memorable. Our Socotri guides like Ahmed Saeed and Ahmed Duhahen were extremely knowledgeable about the caves, helped to explain to the people what we were doing and became true friends! **Dirk** - The Socotri were super nice and hospitable, I have fond memories and often nostalgia thinking of the kindness of the Socotri people. We are not used



Our Socotri friends were trained in climbing with equipment for safety down the caves. Members of SKP team explaining the climbing gear to Ahmed. Photo by Carl Willems.

to that level of friendliness and hospitality here in Europe, at all!

Peter & Dirk – To the dear people of Socotra who read this, we wish to say that we were truly lucky to encounter you during all these years: knowing the island would not have been possible without you. The entire, amazing atmosphere of every visit was determined by the kindness of the Socotri people, who are friendly and hospitable. Your impression, patience, good humor and hospitality, your enthusiasm and feeling for adventure, made all the visits so beautiful. We never saw you as guides or drivers or brief encounters, no, you were always part of the team, full team members. We remember all the people who were with us, like Ahmed S. and Ahmed D., but also great encounters like Mahmoud, who had the first big shop in Socotra, and friends from EPA who supported our work. The Socotri are also amazing climbers, sometimes they were faster down a cave before us. We would go back any time!

Dirk – I will remember that for life. I also remember the people who went with us from the government who were very helpful, but initially quite nervous of going into the caves because of the potential djinn.



Hoq Cave, an important place to Socotra but under high visitor pressure. Taking care of this cave and its fragile environment is very important and the responsibility of all visitors. Photo by Dirk Van Dorpe.

Caves in Socotra are known to host Djinn... do Djinn exist or not? Did you ever see one?

Peter – My last name in my language means “djinn” (Dutch - “de geest”), so people on Socotra called me by my nickname butros al-djinni. I personally did not see a djinn underground, because I was often too busy. We never really sat still for a long time in each cave, and we were never alone. Sometimes we heard a sound deep in a cave, but it was a special cave cricket. But I saw a djinn on the ground. In 2006 (SKP8), we went to a place with a large pool to swim in a wadi running south from the Haggeher Mountains. I went for a walk alone. I sat on a big block in the middle of the wadi, to enjoy the silence and look at the valley. Then I saw a goat, which was unusually white. The goat came to me. When it came under the boulder, the goat saw me and was looking up. Then it started to climb on the rocks next to the boulder, to jump on it. The goat came to sit next to me and gently pushed my shoulder with its head and stayed with me. It was a good djinn. For me, this was a very spiritual moment.

Dirk – I never saw a djinn – people thought we must be killing djinns when we went into the cave, but I did not encounter one, I was very focused on taking photos. But some of our colleagues, like Mr Negib, were worried about djinn so we were careful not to make any trouble with bad djinns.

Peter – Sometimes we went into places which worried people, but we did not mean to worry them. We went into a cave close to Shuab which was just a hole in the ground where people had put a boulder over to stop goats from disappearing in it. Only after moving the block away with a jeep we could climb down, and inside it was a cave and

salty water. When we disappeared into the hole for a while, the people from the village were worried, even though we explained to them what we were doing. They were happy when we came back out, all muddy and safe, as from each cave. They covered the cave again with a stone after. In fact, after so many expeditions, we always took extreme safety measures into consideration.

What is your impression about FoS?

Peter - FoS is great! I've been a member since the very beginning, I went to the first inaugural meeting with Kay in Edinburgh where we met Tony Miller, Miranda Morris, Fareed Krupp, Wolfgang Wranik, and others, in 2000. The value of FoS is that there are like-minded people with a feeling for protection of Socotra expressing the high value of

Socotra's biodiversity and people/culture, geology and other important aspects; people with a heart for the island. I am still interested in the meetings and I regularly follow up.

Dirk – The AGM in Exeter (UK) was my first encounter with FoS, which I loved joining. As a non-scientist I was very interested in everything related to Socotra, after visiting the place. I could see so many scientists share their passion about Socotra and talk about the special place I liked. It was so interesting to learn so much about this island in such a short time, and for a while I was the in-house photographer of FoS during the annual meetings. I'll definitely go to the next meeting!

Thank you for your time! Anything you wish to add?

Dirk – It was great to reminisce during this interview about this amazing place, we will be dreaming of Socotra now! Such good memories. Best wishes to all our friends on and off the island, with a heart for this amazing place. Please take good care of the Socotra caves!

Peter – Indeed! Really fond memories. One day I would like to go back to Socotra with my wife Heidi and my son Tien. My son has a keen interest in animals, especially reptiles, and I already told him that there are many special reptiles on Socotra!

MORE INFO:

If you wish to know more about the caves in Socotra, the Belgian speleologists can be contacted at peterdegeest@gmail.com and dirk.vandorpe@telenet.be



Photos from the FoS-organised cleaning activity in Erher Beach in 2020. Photo Salem Hamdiah.

Salem Keybani reading Tayf in Shibehon, Socotra Island. Photo KVD.



Photos from the FoS-organised cleaning activity in Erher Beach in 2020. Photo Salem Hamdiah

CONTACT INFORMATION

Friends of Soqotra (FoS)

Friends of Soqotra (UK Charity Number 1097546) was formed in 2001. Its distinctive rationale is to bring together people with backgrounds in scientific research and those with a more general interest and develops the synergies between them in order to:

- Promote the sustainable use and conservation of the natural environment of the Soqotra island group.
- Raise awareness of the archipelago's biodiversity and the unique culture and language of the islanders
- Help improve the quality of the islanders' communities and support their traditional land management practices



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Tayf

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FoS Website

The Friends of Soqotra website is maintained by the website subcommittee including Dana Pietsch and Luca Malatesta. It provides information on completed and ongoing scientific research on the Soqotra Archipelago including data, bibliography and contacts of institutions and research teams. The structure and layout also includes a page in Arabic, which gives some general information about FoS. Also the constitution is included in Arabic as well. All financial reports and account information are public on the website.

*If you would like to submit content for the website or you have suggestions, please contact the website subcommittee at **dana.pietsch@unituebingen.de** with cc to **fos.secretary@gmail.com***

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