

# Tayf the Soqatra Newsletter

Issued By *FRIENDS OF SOQOTRA and SOCOTRA CONSERVATION FUND*



Shaheb, Soqatra. This beach is planned to be developed into a large commercial harbor, funded by Kuwait – the photo shows the first stone. Environmental as well as esthetic impacts are expected to be severe, as the new port will provide a major invasion pathway to exotic species. Photo Kay Van Damme.

## Soqatra in a Time of Change

Friends of Soqatra  
Conference and AGM 2010  
Exeter University, UK  
25 - 26 September

The Friends of Soqatra AGM and Conference for 2010 will be hosted by the Institute of Arab and Islamic Studies, University of Exeter, by Julian Jansen Van Rensburg. We would hereby invite members to attend. The AGM follows the Red Sea V Conference at Exeter which is expected to attract wide interest. The subject for this year focuses on the changing nature of the Soqatra Archipelago, looking at past and current issues that have affected the ecology, environment and people. Deadline for abstracts is June 15<sup>th</sup>, 2010, contact [Soqatra@exeter.ac.uk](mailto:Soqatra@exeter.ac.uk) <http://projects.exeter.ac.uk/mares/Friendsofsocotraconf.html>

## France Provides €1 Million for Biodiversity on Soqatra

The French Agency for Development (AFD) granted €1 million for supporting biodiversity in the Soqatra Archipelago. The grant agreement signed by Minister of Planning and International Cooperation Abdul-Karim al-Arhabi and French ambassador to Yemen Joseph Silva demonstrates the joint cooperation between Yemen and donor countries to preserve biodiversity in Soqatra Archipelago. Al-Arhabi stated that the government values the support for Socotra Archipelago and its biodiversity.

## Iranian Boats Seized

Two Iranian boats were seized at Hawlaf, Soqatra, for illegal fishing practices. Alarmed by local people, the army at Soqatra stopped one of the boats and questioned the crew. Illegal fishing at Soqatra shores is common and affects local marine resources.

## Tourist Numbers Increase

Around 3,786, tourists visited Soqatra in 2009, an increase over numbers in 2008 of 2530. 3582 came in tourism tours, 147 for work and 75 for research on the nature of the Island.

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## Invasive Species on Soqatra

The theme article for this issue of *Tayf* is on Invasive Species. While this *Argemone mexicana* does not seem to be causing problems, invasive species can be a real threat to island habitats. See pages 10 - 15.

## NOT For Sale !

*Tayf* Newsletter is produced for members of Friends of Soqatra and is distributed free to them. Neither current nor back issues should be sold.

## C or Q?

*Spelling of the main island name in English is still controversial. Contributors to Tayf are welcome to use whichever spelling they prefer.*



# NEWS

## New Biodiversity Management Regime for Socotra

Bohdana Rambouskova

Even though the well-known Socotra Conservation and Development Programme was completed in March 2009, environment related activities have not been halted on the island. The new Socotra Governance and Biodiversity Project (SGBP), funded by the UNDP and the Global Environment Facility (GEF), was launched in June with Dr. Nadim Taleb as the National Project Coordinator. Dr. Taleb has worked with all previous UNDP-GEF supported projects and was a member of the team that achieved the listing of Socotra as a Natural World Heritage Site in July 2008.

The SGBP was designed within ongoing decentralization process in Yemen that should bring Socotra a special, semi-autonomous status. The key aim of the project is to prepare the island for that. It is expected that within five years the SGBP will set up a new administration for the island that mainstreams biodiversity considerations in Socotra's local governance. Therefore the new project is completely different from the SCDP. A great deal of work has been done in protecting the biodiversity of Socotra in previous years, so that the nature is not directly endangered any more. The environmental activities are thus moving from the field into offices where more conceptual work is about to start.

Nevertheless, besides the local governance support, the project has other, no less important, components, one of which is enhancing involvement and the role of NGOs in biodiversity management and community development. Socotra NGOs will be assessed by specialists and proposals on how to enhance their activities developed. Under the now completed SCDP, the Socotra Ecotourism Society, the Socotra Conservation Fund and the Socotra Women's Association were founded and started their work on local community level.

Another important component is connected with possible benefits for local livelihoods. Many biodiversity protection-related restrictions have been imposed on the island and are having impacts on its inhabitants' lives. The project will focus on bringing profits to local people drawn from biodiversity. For example, new legal tools should be introduced allowing the export of biological materials from Socotra, obviously with appropriate certification and under direct control of the Socotra branch of the Environment Protection Authority.

The implementation of the SGBP will be supervised by key stakeholders from relevant authorities who will meet quarterly to monitor and revise the project's progress. The first Project Board meeting was held in October 2009 in Sana'a with representatives from the UNDP, the Ministry of Water and Environment, the Ministry of Planning and International Cooperation, the Socotra branch of the EPA and both Socotra local councils. The next Project Board was scheduled for January 2010 in Socotra. The high attendance meeting will be joined with a social event celebrating the return of environmental projects to the island.



### Indian House Crow Eradicated

The Indian House Crow, an invasive alien species accidentally introduced to Socotra from passing ships, has been successfully eradicated from the island. An intensive exercise was undertaken to encourage local people to kill the crows and destroy their nests, and it was declared extinct on the island in 2009. Article will appear in **Tayf 8**.

### Historic Photographs for the Socotra Historical and Cultural Association

Two volumes of historic photographs of Socotra were delivered to Fehed Seleem Kafayan of the Socotra Historical and Cultural Association in March 2010. Last year identical volumes were delivered to the Socotra Folk Museum (see Tayf 6 p. 12). Many thanks to Lisa Banfield for carrying this extra 5 kg out with her to the island.

*Miranda Morris*

### New Market for Dracaena Resin

A further consignment of 100 kg. of processed *Dracaena* resin was delivered to Kremer Pigmente of Germany ([www.kremer-pigmente.de](http://www.kremer-pigmente.de)) in January this year. A market outlet for the processed resin is good news for many people in the areas where the trees grow, as the processing can be done by women and by older or less fit members of the community. Harvesting the pure resin demands agility and fitness and is usually carried out by men. Many thanks to Shaikh 'Eesa 'Amir Da'arhi and Ustadh Sa'ad 'Amir Da'arhi for their help in organising this.

*Miranda Morris*

# NEWS

## Agreement Signed for New Sea Port

An agreement has been signed between Yemen and the Kuwait Fund for Arab Economic Development (KAFED) to confirm Kuwait's \$41 million loan contribution towards a commercial port project in Socotra. The agreement was signed following a visit of the KAFED delegation to the island to visit the intended site of the new port. The articles do not mention the \$10 million previously reported for a Socotra Community College.

## Qat Not Welcome on Socotra

The National Association for Facing Qat Dangers organized an awareness trip to Socotra Archipelago during 28 November - 3 December 2009, the state-run al-motamar.net has reported. The Association will honour some members of the local council and sheiks for their cooperation in the implementation of the decision to prevent the entry of qat to the archipelago.

When the President of Yemen visited Socotra in April local people stated that they did not want qat on the island. Amounts arriving have been cut greatly, but some still arrives for the army but it is very expensive and therefore out of reach of most Socotris.

## Fantastic Summer Rains!

The summer rains in early 2010 have been extremely good all over the island.

### Sources of News Articles

News articles without specific authors have been taken from various Yemeni press sources, with only minimal changes to the English to retain the character of the original.

## Soqotra Sees First Riot as People Protest Acute Shortage of Foodstuffs

Hundreds of Socotran people took to the streets of capital Hadibo on Sunday protesting an acute shortage of wheat and flour in the island. Protestors hurled stones on one of the Economic Corporation's stores, in a first ever riot on the island causing damages to the store. The police then intervened, using bullets to disperse the protest.

The citizens accuse the corporation of manipulating the flour and wheat, saying officials have prevented large quantities of the two crucial foodstuffs, selling just slight quantities of them. The people line up for long queues and it takes hours for one to get a wheat bag. And the saddest matter is that some people come back empty handed, and they cried.

## UNICEF Funding Sought for Education Project in Socotra

Director of Education Office in Hadramout Saleh Qamzawi held Saturday talks with Education Program Director of UNICEF Mohammed Billa on the possibility to fund an education development project in the Socotra Archipelago under the action plan of UNICEF in Yemen for 2010. During the meeting, they reviewed activities of UNICEF in the sectors of education development of the educational process of the province.

Qamzawi affirmed the interest of the Education Ministry to provide all necessary requirements for primary and secondary schools, praising the role of UNICEF in the financing child-friendly schools and supporting girls education in Socotra Archipelago.



### Tanuf Salim Nuh di Kishin, Herbal Medicine Clinic, Hadiboh

Tanuf's traditional treatment of illness with Soqotran plants and honey (asel) has attracted a lot of attention from both national and international media in the last year. He is treating patients as far afield as Russia. Given his low charges and practice of giving trial samples of traditional medicine, he is widely respected in the Soqotran community. The plants are collected and prepared by Tanuf himself and his family. His clinic can be found at a few minutes' walk from Taj Socotra Hotel.

Photo by Kay Van Damme.

# NEWS

## Reading Glasses for the Soqotra Public Library

The Friends of Soqotra funded the purchase of 50 pairs of non-prescription reading glasses for delivery to the Soqotra Public Library in March this year (2010). As recommended by a UK optician, the reading glasses are of varying strengths. They are colour coded: each strength of magnification having a different coloured frame. Many thanks to Dr. Hugh Morris for organising this.

The original plan was that a number of sets would remain in the Library for the use of readers; other pairs would be issued to those in need of reading glasses when they visited to the Library. This was to be a trial run to establish the usefulness of the project. However, see UPDATE ON THE SOQOTRA PUBLIC LIBRARY - page 9- this project is currently on hold.

*Miranda Morris*

## Yemen Tries Suspected Pirates

The trial has begun of 12 suspected Somalian pirates in Sana'a. Ten of the defendants were captured by the Russian navy on February 12 as they tried to attack an Iranian fishing vessel off coast of Socotra. Twelve people are also accused of hijacking the Yemeni oil tanker Qana while on its way from Mukalla port to Aden, during which the sailor Salah al Quaiti was killed, another disappeared, and four others were injured during clashes with the Yemeni authorities, the court statement read. According to the London-based International Maritime Bureau, a total of 130 attacks took place in the Gulf of Aden and in the east coast of Somalia in the first half of this year. All the defendants denied the charges against them. A government report said piracy in the Gulf of Aden had cost Yemen US\$350 million since 2007.

## Drought in the Hageher Mountains

For the first time in living memory the winter pastures of 2009/2010 were so poor in the central Hageher mountains that goats and cattle had to be moved elsewhere. The dew, drizzle, mist and clouds that are expected in the mountains during the summer monsoon months were considerably less than usual in 2009, and instead there were long periods of sunshine and clear skies. The rains of the winter that followed were poor, and again cloud cover was much reduced. Consequently the rangeland and the condition of the livestock that depend upon it suffered, and this at a time of year when the livestock owners of the region expect their animals to be in peak condition. By January this year, the cattle and goat owners of the Hageher region were already purchasing supplementary feed for their animals.

## Alarming Pasture Degradation in Momi

Asphodel [*Asphodelus fistulosus*] spread across whole swathes of the Momi pastures of eastern Soqotra this winter, 2009/2010. Although the rains in the region were good - falling gently and at repeated intervals - any grazing that came up was immediately consumed by large numbers of livestock. These included both local animals and those of herders from elsewhere, and especially the eastern Hageher, who had transhumed to the area to take advantage of the rains grazing. This grazing pressure meant that grasses and herbs were not given time to get established and set seed, and in their place the unpalatable asphodel flourished, spreading to form dense carpets right across the pastures.

## New Project to Combat Invasive Species in Soqotra

**Omar Al-Saghier, GEF-SGP**

A GEF (Global Environment Facility) project is being implemented in Soqotra by the Invasive Species Group (ISG) of the EPA. The Small Grant Programme funded the actions taken to complete the removal of the Indian House Crow.

The GEF project is also concerned with invasive plant species. It is more difficult to remove plant species as they are spread over large areas, and not all the areas where the plants are found may be known. The project will involve 35 Environmental Extension Officers (EEOs) from all areas of Soqotra. These EEOs will be trained in the theoretical and practical skills needed to identify the invasive plant species currently found on Soqotra, with the help of an identification leaflet and colour poster produced by the Invasive Species Group. The 35 EEOs will in turn carry out similar training with wider members of the community. Further, the ISG targeted 10 schools around Soqotra where students received at their schools illustrative talks followed by field training on invasive species impact and identification. This will educate and involve members of the wider community and young people in combating invasive plant species.

Luckily, communities very much value grazing resources which may be threatened by the spread of invasive plant species. The hope is that when the wider community is aware of the dangers and are able to identify the invasive species, they will consider the plants as their enemy and hence will uproot them wherever found.

## FoS Members Honoured

Two FOS members have received OBE awards; Sue Christie in 2008 for Services to the Environment and Roderic Dutton in 2009 for Services to the Middle East.

# NEWS

## Yemen Seeks to Maintain Islands' Environment

The Ministry of Tourism and the General Authority for the Protection of the environment (GAPE) signed in April 2010 an agreement to set conditions and regulations on setting up tourist camps on islands. The agreement includes controls and requirements for the set up of tents and camps in locations specified by the Ministry. The agreement was signed by Director General of Tourism and Environment Adel Nasser Hassan and Director General of Natural Resources of the GAPE Abdullah Hamoud. The Ministry is to provide tourist agencies with a list of specifications and locations suitable for camping. The agreement aims to protect wildlife and birds in the islands of the country. Speaking to Saba, Tourism Ministry's undersecretary for the Tourism Development Omar Ba Lghayth said that the agreement aims to maintain nature reserves and islands in Yemen. He pointed out that this agreement comes within the framework of implementation of the government's plans to maintain the environment.

## SGBP Website Wins Award

The SGBP website got the first place within the second largest category of Projects & Government Websites of the YEMEN WEB AWARDS, beating the Official Yemen Tourism & Hadhramaut Governorate Website.

Winning in Yemen Web Awards means that SGBP website has qualified for the Middle East finals to be held in Oman in May 2010.

Socotraproject.org was developed with eYemen|Rivotec company located in Sana'a.

## Festival Includes Soqotra Documentary

As part of the 2009 Sana'a Tourism Summer Festival, the Ministry of Tourism and Save Yemen's Flora and Fauna (SYFF) foundation organized events centred on environmental issues. The first event, entitled "Plant it", included a documentary about Socotra Island. The executive director of SYFF foundation, Dr. Amal al-Kibsi said to the Yemen Observer that the "Plant it" project aims to raise general awareness about the importance of saving nature.

## Yemen on Parade

The Yemen Tourism Promotion Board has been holding events and activities in London, France, Germany and Italy, including shows by Yemen's National Dance Academy and exhibitions of Yemeni photographers, to promote tourism in Yemen. In 2008, Yemen received 404,497 visitors, including 9,000 British visitors; its main European markets are the UK, Germany, France and Italy.



## TAYF 6 Distribution Problems

I am sorry to report that none of the *Tayf6* newsletters that were posted to Soqotra last year have reached the island. This is even worse than previous years when at least a few copies have got through or were delivered by hand by those travelling to the island from Europe. The Friends of Soqotra committee is now looking into alternative methods of delivering the newsletter to the island, where it is much in demand: having it printed in the Yemen or having it Fedex-ed out to a reliable address in Sana'a for collection. We hope that we will be able to report the safe arrival of copies of the newsletter to Soqotra in the next *Tayf* newsletter. We are also looking at getting copies of *Tayf6* to the island.

The distribution for this issue of *Tayf* between Sana'a and Soqotra will be supervised by FoS representative Mohammed Amir Ahmad Amir Di Min Selmehun and facilitated by the American Institute of Yemeni Studies. Mohammed kindly proposed to bring issues to the island, from where they are to be distributed further, at no cost, among the people. In Hadiboh, Salem Ghanem has proposed to keep example issues of *Tayf* in his busy internet café. These will serve to provide foreign visitors and Soqotri who use the internet here with background information and news on Soqotra and illustrate the activities of FoS.

**Stop Press: *Tayf 6* has arrived on the island (May 2010); the new distribution system is working effectively!**

## Soqotra Features in Major TV Series

Soqotra featured in the "Plants" episode of the high-profile BBC Series "Life". It was aired on the BBC in Britain on 7<sup>th</sup> December 2009 and was watched by 4.18 million viewers in Britain. The programme was about different survival strategies of plants from around the world. The dragon's blood tree *Dracaena cinnabari* and the desert rose *Adenium obesum* subsp. *sokotranum* were used as examples of plants which are adapted to a dry habitat. The shape and leaves of the dragon's blood tree help it to take water from fogs, and the desert rose stores water within its trunk which allows it to survive dry periods. The series will later be shown on American television.

# NEWS

## Hadiboh Water Supply is High Quality

Miranda Morris

Many have been struck by the reported high incidence of kidney stones <sup>(i)</sup> among the people of Soqotra. People on the island often blame the water on the island for this. In 2009 I brought a small bottle of water from the mains water supply of Hadiboh back to Britain to have it analysed. The analysis from the Department of Clinical Biochemistry, Glasgow, is given below:

This shows that the quality of the water supplied to Hadiboh is excellent.

Chemical	Hadiboh water reading	EC limits for drinking water	Unit of measurement
Aluminium	9	<200	ug/L
Calcium	40.4	<250	mg/L
Copper	6	<3000	ug/L
Lead	1	<25	ug/L
Magnesium	12.7	<50	mg/L
Potassium	2.7	<12	mg/L
Silver	<1	<10	ug/L
Sodium	103.7	<150	mg/L
Zinc	151	<5000	ug/L

<sup>(i)</sup> Kidney stones are crystal deposits that can accrete in the urinary system when certain chemical substances become concentrated in the urine. Among the symptoms associated with kidney stones are intense colicky pains, nausea, fever, chills, and the reduction or blockage of urine flow.

With grateful thanks to Dr. Lesley Henderson for her help.

## Ancestral Wisdom and the Environment

On Soqotra there are many aphorisms handed down orally from generation to generation. The are said to have originated with the ancestors, the very first people of the island. These people, the *mshoqdihim*, are said to lived at a time when all creation spoke, even the rocks and the trees. Among them were men endowed with special wisdom and supernatural powers, the *nebihi*. One of these aphorisms talks about the importance of caring for the environment and cherishing it:

***I counsel you, people, if you will heed my guidance: Take good care <sup>(i)</sup> of your ancestral mountain homeland. <sup>(ii)</sup>***

***Be sure to keep it pure and unsullied <sup>(iii)</sup> so that the good fortune and blessings it brings you never leave to move elsewhere.***

### Notes

<sup>(i)</sup> the term for 'mountain homelands' literally means 'rocky highlands' and is the term Soqotrans often use to designate their island

<sup>(ii)</sup> the verb used here is the one used for caring for livestock and children

<sup>(iii)</sup> the term used here is normally used to refer to very pure, filtered butter-oil

Miranda Morris

## Communication from Muhammad Sa'ad Muhammad Sowker

THANKYOU for the ZAHRA CULTURAL LIBRARY.

I would like to take the opportunity here to express my thanks to Dr Miranda Morris for what she has done in setting up the Zahra Cultural Library on Soqotra. The library has become a place of great importance to the people of Soqotra and its name has spread across the island. This is because it contains so many books which are not available anywhere else on the island, and especially books about Soqotra. The library was opened in 2005 and between that date and the present it has been visited by so many people, more than 2,500 in one year. With books in English as well as in Arabic it has become a source of reference for many students, including those studying at the Soqotra College for Further Education. In our hearts we consider it to be a treasure just as our island is a treasure.

THANKYOU to Ahmad Sa'ad Tahki for the SOQOTRA FOLK MUSEUM.

I would also like to take the opportunity here to express my thanks to Ahmad Sa'ad Khamis Tahki for his great work in setting up the Soqotra Folk Museum in Riqeleh, Hallah, some 40 km. from Hadiboh. I cannot think of anyone else who would have been able to succeed in such an enormous undertaking or who would have been able to bring together so many people to work so well together, constructing the museum building and then collecting and bringing together the enormous variety of Soqotran artefacts it contains. Ahmad Sa'ad began to study the Soqotran language, society and culture in 1988, working closely with Dr. Miranda Morris. Ahmad Sa'ad was also instrumental in taking the first expedition to the Hoq cave in 1999.

# NEWS

## Ahmed Saeed Suliman, Head of the Conservation Unit in Soqatra, visits San Francisco, USA

In August 2009 Mr Ahmed Saeed Suliman, Head of the Conservation Unit in Soqatra, visited the California Academy of Sciences in San Francisco, California. Ahmed was invited by Dr Frank Almeda of the Botany Department during a visit by Dr Almeda to Socotra and was supported by the Minister of Water and the Environment Mr Abdul Rahman El-Eryani.

The aim of the month-long visit was for Ahmed to receive training in plant classification using modern techniques, but also to exchange experiences in the management of protected areas and islands. Ahmed visited some famous and important sites in California, including the Calaveras Big Trees State Park, Yosemite National Park and Sausalito Island.

Ahmed gave a presentation to scientists and researchers about the biodiversity of Soqatra. The Academy offered their help in training quality young Soqotri students in different fields.



## Red Sea V: Navigated spaces, connected places

The fifth international conference on the peoples of the Red Sea region  
16-19 Sept. 2010, Institute of Arab & Islamic Studies, University of Exeter

### *Celebrating ten years of Red Sea scholarship*

The MARES Project at the Institute of Arab & Islamic Studies (IAIS), University of Exeter, is delighted to host the tenth anniversary conference of the Red Sea Project series, founded by the Society for Arabian Studies. The conference will be held in the beautiful surroundings of the IAIS and city of Exeter, and will coincide with a Dhow Exhibition to be held at the Institute.

For more information: Phone: +44 (0) 1392 72 5251. Website: [www.exeter.ac.uk/mares](http://www.exeter.ac.uk/mares). <http://projects.exeter.ac.uk/mares/conferences.htm>

## Socotra - the Last Stand IUCN Documentary

In coordination with local stakeholders in Yemen and Socotra in particular, IUCN ROWA has produced a documentary entitled "Socotra - The Last Stand". This documentary promotes the special and unique ecosystem of the Socotra Archipelago. It shows how the islands and the local people there are trying to fit into today's' changing world by facing many challenges to achieve the ecological, cultural and economic sustainability. With increased accessibility and the influence of globalization, the islands are threatened by unsustainable development.

"The Yemeni Government is doing its best in conserving the island, but it needs help," Yemeni Minister of Water and Environment H.E. Dr. Abdulrahman Al Eryani said in an interview within the documentary. The minister explains the efforts done by the Yemeni governments to conserve the island by raising the example of the road to Qalansiya that was planned to go through the Ditwah protected area because that was the easiest and shortest way. He explains efforts to communicate this to the Yemeni President who came himself to the island and took a decision after his visit to divert the road to prevent going through Datwah.

The film raised some important questions regarding the future of the archipelago and the threats facing Socotra. The film also highlights the main conservation issues and achievements of the Socotra Conservation and Development Programme (SCDP) and other relevant stakeholders.

# NEWS

## Climate Change and Yemen

### Yemen Observer

Yemen joined countries worldwide to celebrate International Youth Day under the theme: Sustainability: Our Challenge, Our Future. on August 12th. Research recently released by the World Bank shows that Yemen is among the five countries most vulnerable to climate change worldwide in terms of both affected coastal area and endangered population. The World Bank also estimates that Yemen is one of seven countries in which economic areas prone to suffering from storm damages account for more than 50 percent of the gross domestic product.

An International Red Cross report found that Sana'a has been experiencing hotter temperatures in recent years that exceed 25°C as well as less seasonal rain, which in turn confuses farmers. But the most obvious risk from storm surges occurs along Yemen's coastline. In October 2008, severe floods hit roughly a third of the country, seriously damaging central Hadramout governorate on the Arabian Sea. The floods killed about 200 people and left more than 3,000 homeless, triggering a major international response.

As climate change has severe socioeconomic implications, Yemen, like many other developing countries, signed the Kyoto Protocol in 1997 to protect the environment and reduce greenhouse gas emissions which are the main cause of climate change. However, poor countries like Yemen lack the human and financial resources necessary to respond adequately to the negative impacts of climate change, according to the World Bank. Schools joined in the celebrations, including al-Nizary Girls School in Sana'a which worked to tackle the issues through its environmental group.

Abdulrahman, a 17 year-old from Mahra province in south east Yemen said he could not comprehend the causes of the horrible flood that swept their town so suddenly last year. He said the flood was the first of its kind in his life. He said the flood destroyed all roads, houses, and infrastructure and claimed souls including that of his father. "I felt at once horrified and amazed when it rained for 48 hours after a drought of more than a year; the flood swept everything away, including houses and our fishing boats, but I could not understand what was happening," said Abdulrahman. "Our Geography teacher had previously told us about climate change but it was a concept that I did not really understand," added Abdulrahman. "I never considered that the problem could be on our very doorstep and that Yemen was responsible for our own disaster," admitted Abdulrahman who lost his fisherman father as a result of the flood.

Last year the United Nations selected the theme "Youth and Climate Change" to recognize the fact that climate change has already begun to devastate communities, worsening the effects of poverty and hunger. "This situation complicates the challenges that young people already face," said the UN, emphasizing the importance of actively engaging the younger generations in areas of risk reduction, adaptation and mitigation. This includes the following:

- ◆ Preparedness and disaster risk reduction through building individual and community capacities so that the likelihood of climate change induced disasters is reduced and that people are able to respond promptly, expeditiously and effectively.
- ◆ Adaptation through actions that decrease the harm of climate change while exploiting its benefits.
- ◆ Mitigation through actions that minimize or cushion the adverse impacts of climate change.

Recently the World Bank Institute in Sana'a organized the Youth Climate Change Champions (YCCC) program. The YCCC program provided young environmental activists from Yemen and other countries with an overview of the latest knowledge on climate change. This included knowledge of the Earth's climate system, the role of greenhouse gases, the effects of climate change on societies and the environment, projections of future climate change and effects, an overview of responses needed to reduce greenhouse gas emissions, and how to adapt to the changed climate. Participants were introduced to responses to climate change related problems at both national and personal level. They were also introduced to international negotiations and the cost of acting and not taking action on climate change. In Yemen, 20 participants, 12 of whom were girls, participated in the program which started on March 11th and ran through to June.



*Boswellia popoviana*, one of the species on Soqatra which may be vulnerable to climate change.

# NEWS

## Soqotra Public Library

Miranda Morris

In 2005, with help from the George Gund and Iara Lee Foundation, the British Council, the British Embassy, the American Institute of Yemeni Studies, Friends of Soqotra, as well as many generous private donations, I was instrumental in raising funds to establish a public library on Soqotra, initially for a trial period of five years. The funds were to cover the rent of the library building and the salary of the librarian, leaving considerable funds in the account to be used at the discretion of the Head of the Library for the purchase of new books and any other items needed by the library.

Taking stock in 2010, it is clear that the public response to the library has been impressive; over one and a half thousand named users were recorded in one 11-month period, a figure which does not include those who did not want to sign the register. It is clear that books available in the library are not available anywhere else on the island. However, sadly, it also became clear that administrative enthusiasm and expertise is lacking. In 2008, in an attempt to combat this, we held a well-attended open meeting at which a six-person Library Committee of respected local figures was elected. They appointed from amongst themselves a two-man chair. Administrative procedures were discussed by the new Committee and it was agreed that regular meetings of the Library Committee should be held to monitor how the work was progressing and to discuss the purchase of new books and films. They agreed that additional sources of funding should be sought, that school visits should be encouraged and that regular showings of educational DVDs would be held. Due to various problems, different morning and evening librarians were appointed to ensure that the opening times displayed outside the library were adhered to.

In 2009, when we again held a meeting (no meeting of the Library Committee had been held since the one in 2008) it appeared that little had changed for the better, although the agreement to install electricity had been carried out and a ceiling fan kindly organised by Muhammad Amir. At this meeting much of the same ground was covered and plans were again made to develop and improve the working of the library. It was also agreed (see *Tayf* 6) that the *Soqotra Historical and Cultural Association* would move in to share the library building, thus saving both organisations outgoings on rent. I said that I saw the next year as a pivotal one for determining the future of the Soqotra Public Library.

On my next visit in March 2010, at my request a meeting of the Library Committee was held. I took with me the two-volume collection of historical photographs of Soqotra which were to be presented to the library, and the 50 pairs of reading glasses donated by Friends of Soqotra. However, it transpired that no Library Committee meetings had been held since the last 2009 meeting; that the *Soqotra Historical and Cultural Association* had not, as agreed, moved in to the library building; that contrary to previous agreement, books had been removed from the library on the authority of one of the chairmen; that there had been no school visits and no approaches made to the many bodies coming to Soqotra seeking funding opportunities; and that no new books or DVDs had been purchased. Finally, due to lack of supervision by the Library Committee, the morning librarian had frequently been absent and there had been an unwillingness to pay the afternoon librarian to take her place, and as a result the library had not been opening according to the agreed opening hours.

All this led me to decide that after five years, I personally could no longer support the Soqotra Library or continue to seek funds to keep it going. I wrote a letter to all members of the Library Committee and to the librarian explaining my position and the reasons for it. I pointed out that there were still some \$2,000 dollars in the library account which could either be used by the Library Committee to further the work of the library, or should be returned to me to fund alternative projects. Due to uncertainty about the future of the library I took back the reading glasses and the two-volume collection of historical photographs of Soqotra: the latter I donated to Fehed Seleem Kafayan of the *Soqotra Historical and Cultural Association* and the former remain in the Darwin House in Hadiboh awaiting distribution.

In the week before my departure I was approached by a man from the Gulf, Gum'a Salih. He told me that he wanted my permission to take over and fund the library: he would expand it, employ additional staff, install a photocopying machine and computers, bring new books and films, and also establish a coffee shop attached to an expanded library building. I said that of course I would be delighted if this were to happen, but that it was not up to me to give or withhold permission, it was up to the properly elected Library Committee. I shall wait and see what happens with interest.

Meanwhile I would like to thank Ali Muqaddam for his scrupulous management of the Soqotra Public Library bank account. I would also like to thank the librarian, Muhammad Sa'ad Muhammad Sowker - a young man in his final year of school - for his enthusiasm, and for the efforts he has made to try and keep the library open and functioning: single-handedly he has brought schoolchildren to watch some of DVDs in the library, and has kept records of the books and films in the library, as well as of those who visit it. For his sake and for the sake of all those who have come to tell me how important the library is to them, I hope that its doors will remain open.

# INVASIVE SPECIES

## Invasive Species: the Dangers of Introducing Alien Animals and Plants to Soqatra

Lisa Banfield, Tony Miller, Eike Neubert, Richard Porter, Senan Ali Saleh, Kay Van Damme

### What are invasive species?

Plants and animals that are found in an area but are not native to that area are described as *alien species*. Alien species may spread to an area naturally or be accidentally or deliberately introduced by people. If conditions are suitable, some alien species may become invasive. *Invasive species* grow and spread into surrounding natural habitats without human assistance. They are, per definition, alien species causing ecological change. Invasive species are now one of the main threats to biodiversity worldwide – in fact, according to several sources, it may be the second largest human-mediated threat to biodiversity. On islands, the effect is even larger than on continents. This article does not cover domesticated alien mammals and birds, even though livestock can be invasive and cause environmental damage through over-grazing.

### Why do alien species become invasive?

All animals and plants have adapted to live alongside other species in their natural habitats; these species rely on each other for essential elements of life such as food, shelter and places to breed. Species can have many different types of relationships with other species, for example, they can be a predator, a pollinator, a food source, a nesting site or a parasite. The relationships between species create a natural balance in the abundance of each species; a predator is controlled by the availability of its food source; a plant is controlled by the availability of its pollinator. Ecosystems therefore exist in a natural, complex balance. Species which are introduced to a new area (alien species) may have no existing relationships with native species, meaning there may be no controls to limit the reproduction and spread of some alien species. In this situation, an alien species may become invasive; it spreads without resistance into the surrounding area, often creating a new ecosystem which it dominates. The impact of invasive species can be hard to predict and can devastate entire ecosystems. Not all alien species have the potential to become invasive. Successful invaders have general traits. They have exceptional dispersal characteristics, establish and reproduce rapidly, have few or no natural enemies in the new environment and can exploit (sometimes underused) resources.

### Impacts of invasive species

#### 1. Impacts on native biodiversity and ecosystems

Invasive species use up resources that would usually be used by native species, such as water, nutrients and sunlight, or can feed heavily on native species. This can lead to the loss of native biodiversity and the alteration of ecosystems. Invasive species are thought to be a leading cause of bird, snail, mammal and fish extinctions world-wide.

Seabirds and flightless birds on islands are threatened most seriously by the introduction of rats, cats and even mice. Island birds often live for long period without natural predators, and therefore they have no natural defences to protect themselves against predation. For example, the flightless Stephen Islands Wren *Xenicus lyalli* (**Figure 1a - see page 15**) was hunted to extinction by introduced cats. A graphic account of the damage caused to seabirds on a Pacific island by invasive rats can be found at <http://www.phoenixislands.org/species.html>. The impact of invasives is greater for endemics than for other species and so pose a major threat to unique faunas.

On the South Atlantic's Gough Island, introduced mice are decimating seabird populations and have started to eat the live chicks of the endangered Tristan Albatross *Diomedea dabbenena* ([http://www.birdlife.org:80/news/news/2005/07/gough\\_island.html](http://www.birdlife.org:80/news/news/2005/07/gough_island.html)) (**Figure 1b**). Over 50% of the world's globally threatened birds are threatened by alien invasives, with seabirds having suffered the most in the last two decades. A further sobering thought is that 88% of the known bird extinctions since 1500 have been on islands (<http://www.biodiversityinfo.org/casestudy.php?r=state&id=84>).

Terrestrial snails are probably the most endangered animal group in the world (Lydeard et al., 2004). *Euglandina rosea*, a cannibal snail, has been deliberately introduced on some islands to control the invasive African land snail *Achatina fulica* (Solem, 1990). However, this had unintentional consequences, as the cannibal snail instead ate the local snails, causing the extinction of many endemic species. Snails play an important role in an ecosystem, including providing an important food source for birds and reptiles, which in turn are important for the pollination of plants and the spreading of seeds.

On Guam, the introduction of the brown tree snake has led to the extinction of more than ten native species; birds, mammals and reptiles. In the Galapagos one species of tree, *Cinchona pubescens*, that was introduced in the 1940s now covers 11,000 ha of Santa Cruz and has a major effect on all other species (Jäger et al., 2009).

# INVASIVE SPECIES

## 2. Impacts on livelihoods

### a. Livestock grazing

Many people on Soqatra are reliant on livestock as a source of food and income. Invasive plant species can cover large areas of land, gradually replacing native vegetation types and reducing the amount of available land. Often invasive species are poisonous or have defences against grazing, a factor which contributes to their successful spread in a new area; alien species which are edible by livestock are likely to be eaten before they have the opportunity to spread. A good example is that of *Opuntia stricta*, the prickly pear cactus, which has become invasive after being introduced to new areas as a human food source. It is protected from grazing by long spines. Dense stands are formed, making areas inaccessible to people and livestock, and native plants are prevented from growing. In Australia the prickly pear spread over 250,000 square kilometres (Tanner, 2007-2009), an area more than 65 times the size of Soqatra, forcing many people off their land (see **Figure 2a**). It has also caused problems in Yemen, Oman and South Africa.

In Kenya *Prosopis juliflora* was introduced to control soil erosion, but has since become invasive and reduced the amount of grazing land. This species is spreading in mainland Yemen (see **Figure 2b**), and is said to now cover millions of square kilometres in arid and semi arid areas (Pasiiecznik, 2001). This plant has been found recently on Soqatra (see below).

### b. Fisheries

Invasive species can have a devastating impact on marine environments. Species are often spread in the ballast water of cargo ships (water commonly held in the hull of a ship to provide stability when the ship is empty, but released into the sea when the cargo is loaded). The transfer of invasive species in ballast water is one of the greatest threats to marine environments according to the Global Ballast Water Management Programme.

A comb jellyfish *Mnemiopsis leidyi* was accidentally introduced from American seas to the Black Sea through ballast water. In the absence of a natural predator the population of the comb jelly became out of control and, feeding heavily on food usually eaten by other species, had a catastrophic impact on fisheries in the Black Sea.

*Caulerpa taxifolia* is a marine alga that has become invasive in the Mediterranean Sea after being released accidentally. It has now spread over 130 square kilometres where it blankets the sea bed and excludes native plants and animals (see **Figure 2c**), impacting on local fisheries.

### c. Eco-tourism

Invasive species can threaten the international reputation of tourist destinations, alter the appearance of natural landscapes and lead to a loss of recreational land, all affecting the tourism industry. The marine alga "dead man's fingers" *Codium fragile* spp. *tomentosoides* has been introduced to many areas around the globe with shellfish, cargo ships and recreational boating. It accumulates on beaches where it rots, making the beaches smelly, unpleasant and unsuitable for tourism (**Figure 2d**).



**Figure 2:** Impacts of invasive species on livelihoods. (a) *Opuntia stricta* growing in New South Wales, Australia and (b) *Prosopis juliflora* dominating a wadi bed in Tarim, Hadhramaut, Yemen; invasive plant species that outcompete native species and reduce the amount of available grazing land; (c) The sea alga *Caulerpa taxifolia* in the Mediterranean Sea, which blankets the sea bed and excludes native plants and animals, impacting upon fisheries; (d) The marine alga *Codium fragile* spp. *Tomentosoides*, which covers beaches where it decays, causing a rotten smell and making the beaches unsuitable for tourism.

# INVASIVE SPECIES

## 3. Impacts on human health

Invasive species can directly or indirectly damage the health of the local human population. The marine alga *Alexandrium minutum* (Figure 3a) contains toxins that accumulate in seafood, and can poison people who eat the seafood. Invasive species can also damage food crops. For example, the whitefly *Bemisia tabaci* is an insect which can damage many crop species including peppers and tomatoes (Figure 3b). It feeds on the plants as well as spreading viruses which can reduce growth of the plant and cause uneven ripening and moulding of fruits. Again, it spreads to new areas with imported plants. Also vectors and parasites causing diseases may be considered as invasive species. The West Nile Virus was introduced in the US in 1999 and has caused death to humans. In Europe, excrement from introduced Canada Geese (*Branta Canadensis*) from the US has been a major source of diseases.

The above examples show that it may take only ONE invasive to disrupt a whole system, potentially leading to damage to local diversity, negative economic effects and impacts on human health.

## Why is the threat of invasive species to Soqatra increasing?

The likelihood of invasive species being introduced to and spreading within Soqatra is increasing for several reasons, for example:

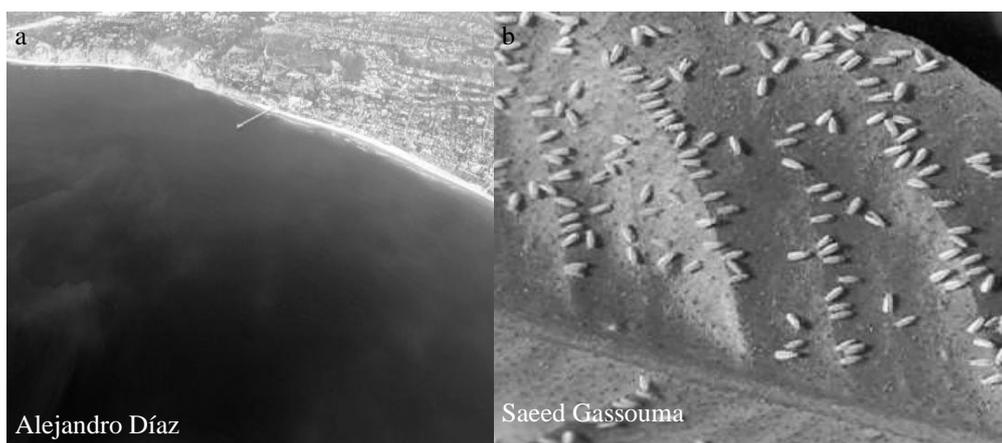
- An increasing population = increase of imported fodder plants, fruit and vegetables.
- Increasing connectivity to the outside world = more frequent ships and planes. The number of exotic species increases with the number of visitors (Londsdale, 1999).
- Increased movement around the island (more roads and cars) = greater potential for the spread of seeds and animals.
- Increase in development projects and grazing pressure = more disturbed and degraded habitats that are more prone to invasion.

The threat of invasives on Soqatra is severe because of its uniqueness in biodiversity; a single (!) invasive species may lead to the extinction of several species, as with the brown tree snake in Guam.

## What are the costs of removing invasive species?

The removal of invasive species can become a huge economic burden. Eradication of invasive species is expensive, can take many years and may require the use of chemicals which can pollute the environment. Examples of the cost of eradication programmes are given below. Because of these costs it is essential that invasives are tackled in an early phase, when costs are still relatively low.

Species	Area	Impact	Cost of Eradication (UNEP, 2003)
Ground termite	Hawaii	Destroys trees and buildings.	US\$60 million per year
Mediterranean fruit fly	New Zealand	Damage to fruit trees.	US\$4.5 million
Yellow crazy ant	Christmas Island National Park	Predation of native crabs and birds.	US\$1.3 million



**Figure 3:** Impacts of invasive species on human health. (a) The marine alga *Alexandrium minutum* causing red discolouration of the sea as well as toxification of shellfish and subsequent poisoning of humans; (b) The whitefly *Bemisia tabaci* on a citrus leaf; this insect damages crops such as tomatoes and peppers and can also spread viruses that affect humans.

Alejandro Díaz

Saeed Gassouma

# INVASIVE SPECIES

## What is the current situation on Soqatra?

### 1. Plants

A recent study by Senan Ali Saleh identified 87 alien plant species in Soqatra, mainly being grown by people in home gardens. 35 of those plants have the potential to become invasive (Senan Ali et al, 2009). Several of them have caused serious problems elsewhere in habitats similar to those found on Soqatra. This includes *Leucaena leucocephala* and *Parkinsonia aculeata*. *Prosopis juliflora* was already been removed from the area around the airport, but was recently found again in a home garden (**Figure 4a**). Another potentially very dangerous plant, *Nicotiana glauca*, was found in 2007 along the edge of the road in Diksam (**Figure 4b**). It was removed by SCDP/EPA but the area should be monitored closely. Also found recently in the Haggeher is *Nicandra physaloides* (**Figure 4c**). This is causing havoc in similar vegetation in the woodlands and grasslands of Dhofar and urgently needs removing before it gets out of control.

Other alien plant species have been present on Soqatra for more than a century and are not considered to pose a serious threat, for example *Argemone mexicana* and *Calotropis procera*. However, these species should be monitored and removed from new areas should they spread. They could become invasive as habitat disturbance increases. This can already be seen in areas such as Ditwah Lagoon and Qadub where *A. mexicana* is now extremely abundant, forming large stands (**Figure 4d**).

### 2. Birds

Apart from the benign domesticated chicken and Rock Dove *Columbia livia*, the House Crow *Corvus splendens* is the only alien bird species to have been introduced (accidentally) to Soqatra. This highly invasive alien has caused serious economic and environmental damage to many parts of the world where it has become naturalised. Fortunately on Soqatra, where it arrived in the mid 1990s, the population was controlled and then finally eradicated in 2009, as detailed elsewhere in this issue of Tayf.

### 3. Mammals

Most of the mammals that have been introduced to Soqatra are domesticated, controlled and provide an important food resource. Four that are alien and invasive (to a greater or lesser extent) are the domestic cat, lesser Indian civet cat *Viverricula indica*, the black or ship rat *Rattus rattus* and the Norway Rat, *Rattus norvegicus*. Civet cats have been observed taking the eggs and young from bird's nests, including those of Soqotran endemics; its threat to bird and reptile populations is not known, but could be significant; the same is true of the threat posed by domesticated cats that have turned feral. However, the most serious threat is that posed by rats, especially to breeding seabirds, of which ten species in the archipelago have internationally important populations. The extent of rat infestations on the seabird islands is not known, nor therefore is the effect they may be having on populations or breeding success. This is considered to be a priority for investigation.

As most of these species have been introduced in the island for a few centuries at least, the ecosystems may have reached new balances with their presence; eradication is therefore a very complex matter. Rats, in particular, interact strongly with other invasive species. It is essential to consider their relationships with other species in order to avoid any unforeseen chain reactions following removal.



**Figure 4:** Examples of potentially invasive plant species currently found on Soqatra. (a) *Nicotiana glauca* growing by the side of the road in Diksam; (b) *Prosopis juliflora* growing in a home garden; (c) *Nicandra physaloides* has been seen in the Haggeher (d) *Argemone mexicana* at Qadub old village.

# INVASIVE SPECIES

## 4. Molluscs

Records from the late 19<sup>th</sup> century list some non-Soqotran snail species, mainly from the Arabian mainland, and a single freshwater species, *Indoplanorbis exustus* from India. None of these species could be found during the past research activities. As livelihood on Soqotra mainly depends on stock-breeding rather than on agriculture, large plantations are missing and introduction of alien snail species has not yet occurred. However, the record of 65 alien plant species illustrates the enormous potential of importing living alien snails or their egg clutches hidden in the soil. Ideally, imported plants should be put under quarantine in a nursery for a month and controlled for any live snail or snail hatchlings.

Other invertebrates may form a similar threat with the import of soil, plants or building material. Invasive ant species, for example, may cause enormous devastation, but also some beetles and other smaller invertebrates. There are several introduced species of isopods on Soqotra but these are not necessarily invasive.

## Protecting Soqotra from Invasive Species

The protection of areas from invasive species is well documented and many resources are available. Some often suggested protective measures are:

- introducing a permit system for imported organisms, where appropriate. Those who grant permissions or rejections base this on an evaluation of the potential of the organism to become invasive.
- Introducing an inspection system for imported organisms and foodstuffs to reduce the risk of introducing pests and diseases.
- Introducing a quarantine system for imported organisms, where appropriate.
- Increasing awareness among local people and visitors about the dangers of invasive species.
- Developing a system for ballast water held in cargo ships during journeys and offloading the water away from the shoreline.
- Decreasing the amount of disturbance of ecosystems island-wide; invasives spread best in disturbed or low diversity areas.

## Managing Existing Alien and Invasive Species

As stated previously, not all alien species are likely to become invasive, and not all invasives can be removed entirely. However, there are some actions which are recommended:

- Assess existing alien species for their potential to become invasive, for example, have those species become invasive elsewhere?
- Rapidly remove species with the potential to become invasive before they become naturalised (maintaining self sustaining populations in the wild); speed is vital to prevent further spread.
- Monitor areas where invasive species have been removed to look for further regeneration.
- Where complete removal is not possible, monitor the species for further spread and remove from new areas.

It is absolutely essential that any invasive species control or eradication programme does not involve the use of poisons unless carefully administered by a fully trained and internationally recognised operative.

## Conclusion

The catastrophic impact of invasive species seen on other islands around the world, and highlighted by the examples given in this article, are not yet apparent on Soqotra. However, the risks are increasing and some issues require further research. There are some potentially very dangerous species already on the island and these require monitoring or removing. Stricter controls are needed to lower the chance of the accidental or deliberate introduction of potentially dangerous alien plants and animals.

## Support

The Friends of Soqotra offers their assistance in the prevention and management of alien and invasive species.

# INVASIVE SPECIES

## Acknowledgements

Richard Porter: Steve Cranwell, Nadim Taleb, Ross Wanless for helpful discussion.

### Photograph Credits

Thanks to the people listed below for giving permission for us to use their photographs.

Figure 1a) Anon, [http://en.wikipedia.org/wiki/File:Xenicus\\_lyalli.jpg](http://en.wikipedia.org/wiki/File:Xenicus_lyalli.jpg)

Figure 1b) Ross Wanless, [http://www.birdlife.org/news/news/2005/07/gough\\_island.html](http://www.birdlife.org/news/news/2005/07/gough_island.html)

Figure 2a) Main photograph: [http://www.northwestweeds.nsw.gov.au/prickly\\_pear\\_history.htm](http://www.northwestweeds.nsw.gov.au/prickly_pear_history.htm), with permission from Mr Les Tanner; inset: Anon, [http://en.wikipedia.org/wiki/File:Opuntia\\_stricta\\_-\\_Para\\_Hills\\_surburban\\_weed.JPG](http://en.wikipedia.org/wiki/File:Opuntia_stricta_-_Para_Hills_surburban_weed.JPG).

Figure 2b) Tony Miller, RBGE

Figure 2c) Alexandre Meinesz, <http://www.issg.org/database/species/ecology.asp?si=115&fr=1&sts=ss&lang=EN>.

Figure 2d) Dr Joe Costa, [www.buzzardsbay.org/codium-wareham.htm](http://www.buzzardsbay.org/codium-wareham.htm).

Figure 3a) Alejandro Diaz, <http://fr.wikipedia.org/wiki/Fichier:La-Jolla-Red-Tide.780.jpg>.

Figure 3b) Saeed Gassouma, [www.ecoport.org](http://www.ecoport.org).

Figure 4a) Main photograph Senan Ali Saleh; inset: Anon, [http://en.wikipedia.org/wiki/File:Vilaiti\\_Keekar\\_\(Prosopis\\_juliflora\)W\\_IMG\\_6935.jpg](http://en.wikipedia.org/wiki/File:Vilaiti_Keekar_(Prosopis_juliflora)W_IMG_6935.jpg).

Figure 4b) Main photograph Senan Ali Saleh; inset: Anon, <http://en.wikipedia.org/wiki/File:Nicotiana-glauca-20080330.JPG>.

Figure 4c) Main photograph and above inset Tony Miller; below inset Anon, <http://en.wikipedia.org/wiki/File:Giftbeere.jpg>.

Figure 4d) Kay Van Damme.

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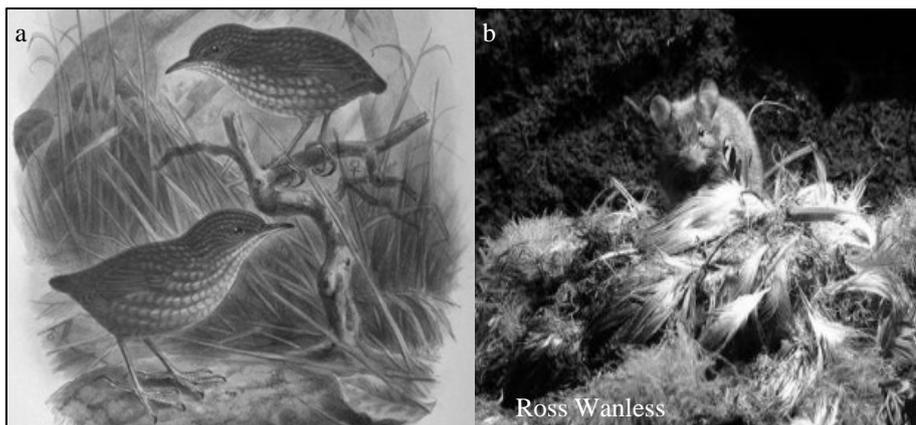
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**Figure 1:** Impacts of invasive species on native species. (a) The Stephens Island Wren *Xenicus lyalli*, an endemic species eaten to extinction by invasive cats; (b) A house mouse feeding on dead seabird chicks on Gough Island.

# LIFE ON THE ISLAND

## Rainbirds, Rarities, Vultures and Transects

Richard Porter

The sun shone fiercely as an anticyclonic calm dominated Socotra during my annual visit in October and November 2008 to help Ahmed Saeed Suliman and Nadim Taleb with bird surveys and conservation issues. It was sad to know that the SCDP - the successful conservation unit of the past decade - would soon cease to be, but hopefully the 'new management' regime will bring with it leadership and a more secure financial future for the environmental protection of these wonderful islands.



### Vultures

With a dramatic decline in numbers throughout Europe, Asia and Africa the Egyptian Vulture has recently been afforded Globally Endangered status. But on Socotra it is thriving with a concentration that is surely the highest in the world. Thus Yemen has an international responsibility to ensure its future conservation. Our detailed counts over the last 10 years suggest a population of over 1700 individuals and at dawn one morning in late October I counted 341 arriving in Hadibu from their roost sites in the Haggier foothills. It is encouraging that the proportion of juveniles in the population continues to indicate good breeding success.

One afternoon in the west Momi hills Ahmed Saeed, Diana and I came across a pair of birds performing a display I've never seen or heard about before. One adult was lying on its back with wings outstretched, held in that position by the 'dominant' bird standing over it and pinning its legs to the ground. Periodically both birds would flap their wings frantically, the submissive bird calling weakly.

### Rainbirds and dragonflies

Socotris give the name 'rainbird' to that most colourful of all migrants that grace the island, the Blue-cheeked Bee-eater. Each spring and autumn many tens of thousands must pass high over the archipelago on their journey between Eurasia and Africa and if rain and storms prevail this will bring birds down to land level: a phenomenon known by birders as a 'fall'. In November 2007 when a cyclone clipped the island there was a huge fall of bee-eaters - I counted over 2,000 on one day. This year the lack of rain produced few. But on one morning after a night of showers I counted 50 and at the same time the sky, streets and countryside was alive with dragonflies, notably *Pantala flavescens* which is common in much of Africa and Asia. There must have been several millions on the island - either recently hatched or migrants. Good timing for hungry migrant bee-eaters.



### Transects

To determine the populations of the breeding birds on Socotra we (SCDP and BirdLife International) have devised a system of line transects throughout all habitats and altitudes. In nine years we have completed over 380 kms, adding 25 more this autumn. Ahmed Saeed and I plan to publish the findings shortly but the most encouraging thing we have learned is that the population of most birds is healthy. Three examples (figures are of individuals - all provisional): Socotra Sunbird 55,000, Socotra Warbler 26,000, Socotra Sparrow 300,000.

### Rarities

The Socotra bird list now stands at 205 species. Because ornithological visits are relatively rare it is not difficult to add new birds to the list and this year I added three - Yellow-billed Kite, Little Bittern and Northern Wheatear. None was a great surprise. In addition other rare migrants discovered included Spotted and Little Crakes, a juvenile Pallid



Harrier and Golden Oriole. One intriguing discovery was that of a juvenile Yellow Bittern. Normally found in Asia, this is the fifth time it has been recorded on Socotra and I have a feeling it just might be breeding. That would be a real bonus for the island's avifauna.



Spotted Crake (left) and Yellow Bittern (right)

# SOQOTRA IN THE PAST



## Socotra: Winds, Myths and Stories

**Julian Jansen van Rensburg  
(University of Exeter)**

The maritime environment of the Socotra Archipelago is greatly influenced by its geographical position which places Socotra in an unenviable position. Due to the position of the Archipelago it is affected by both the NE and SW monsoon seasons which not only bring with them two rainy seasons but also high winds and storms. Evidence for the intensity of these storms, in the vicinity of Socotra, comes from a study undertaken by Jameson (1949: 113), which demonstrates that the frequency of gale force winds developed, from under 5% in May and rising to 50% in June, culminating in winds of

gale force occurring for over 85% of the time during July. During the months of May, June, July, October and November this area is also particularly prone to cyclones (Rajeevan and Butala 1990: 410).

These winds are further influenced by the topography of the islands, as winds blowing over the Haggeher mountain range tend to be deflected resulting in a variable wind regime in the vicinity of Socotra. A study by Bury (1981: 1528) has demonstrated that, during the south-westerly monsoon, Socotra formed a natural barrier to the predominant wind flow, which resulted in an area of significantly lower wind speeds and a reduced sea state to the leeward side of the island.

Wind strength can also affect the speed of surface currents, and during the high winds of the SW monsoon period, surface currents are known to reach high speeds. This is particularly true in the vicinity of Socotra, where the strongest known currents in the world are known, with rates of 7-8 knots having been recorded (Cornish and Ives 2006: 153).

The effect of these variable and dangerous environmental conditions in the vicinity of Socotra was often reported by the medieval Arab authors who made particular mention of these dangers. Ibn Majid (d. 906/1500) in his navigational treatises mentions how sailing in the vicinity of Socotra was particularly dangerous due to the cyclones and mountainous waves that could be encountered there. As for the currents he mentions how they are "very strong and you cannot prevail against it. This is a gamble for life and limb, because it comes at the time of the well-known *zuhūn* in the north of Soqotra" (Tibbetts 1981: 230).

It is likely that due to these various phenomena that occur in the vicinity of Socotra its inhabitants have in the past been believed to have had control over the weather. According to Marco Polo the inhabitants were fearful sorcerers which, "If any vessel belonging to a pirate should injure one of theirs, they do not fail to lay him under a spell, so that he cannot proceed on his cruise until he has repaid the damage. Even should he have a fair and leading wind, they have the power of causing it to change, and obliging him, in spite of himself, to return to the island. They can, in like manner, cause the sea to become calm, and at their will can raise tempests, occasion shipwrecks, and produce many other extraordinary effects, that need not be mentioned" (Komroff 1928: 311).

A great deal of this power over the elements can be readily explained utilising local knowledge of the winds. Indeed, a mariner who had a good knowledge of the changes in the seasons, their influences on local winds and the influences of topography and thermal influences on the winds in specific areas would be quite capable of knowing where and when certain events would occur. In utilising this knowledge, with some degree of persuasion, it would be possible to put visiting vessels into a particularly hazardous position. Moreover, a vessel leaving the island during the afternoon may find itself facing contrary winds close to the steep cliff lined coastline, and if they managed to pass this area, would find themselves facing a contrary onshore sea breeze in the region of 13 to 24 knots. This combination could quite easily cause the vessel, in spite of itself, to be driven back to the coastline of Socotra.

At present, the dangers of these currents and meteorological phenomena are as real as they were during the medieval period, with several ships having been caught unawares by the strong winds and currents in the vicinity of Socotra.



# SOQOTRA IN THE PAST

## Early visitors: Russian Researchers Discover Oldowan technology in Soqotra

Vladimir Agafonov

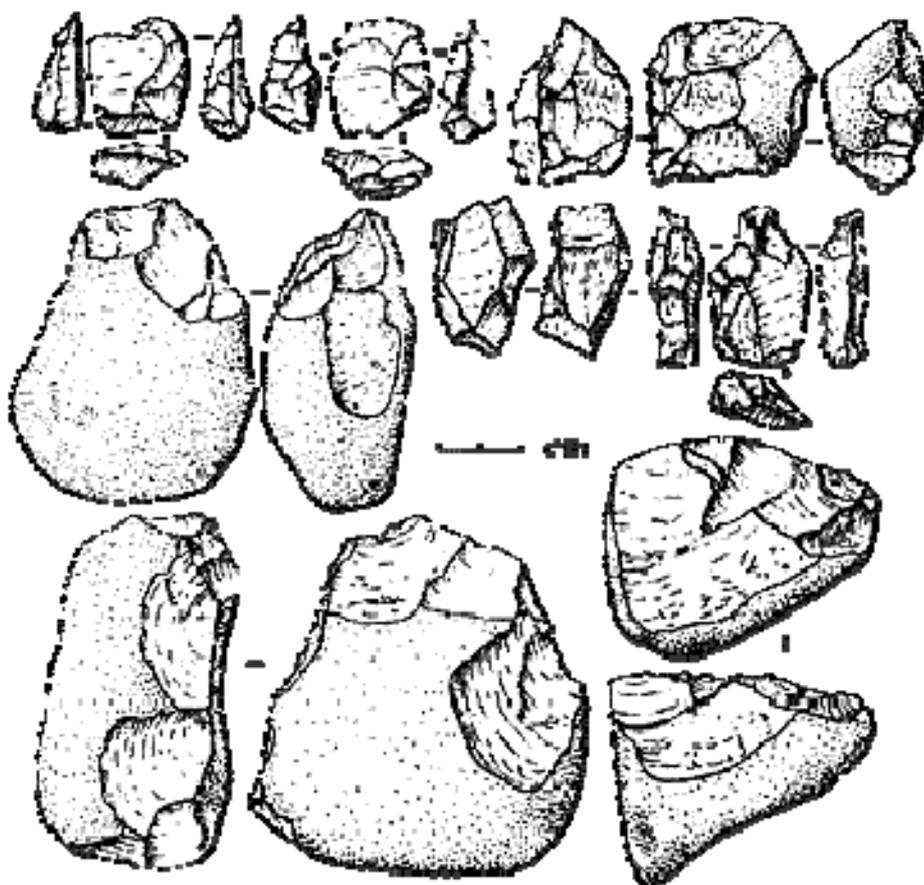
Strange but true: Soqotra once harboured one of the most advanced human industries with technology so advanced it could equal Japan at the time. However, it was over 1.4 million years ago – during the era of the Olduvai culture.

During an excavation in 2008, as part of the Russian Complex Expeditions in the Republic of Yemen (RCERY), a group of Russian researchers found thousands of remains of the most ancient culture in human history – Olduvai (Oldowan). Modern scientists attribute Olduvai culture within Africa and the Middle East to 2.5-1.4 million years ago, the beginning of the Palaeolithic era or Lower Stone Age. Artefacts of the Olduvai period outside Africa are extremely rare, even in Arabia or Europe – the discovery of ancient stone tools of Olduvai type on an island is even more exciting.

The first person to discover ancient stone tools on Soqotra was a correspondent of the ITAR-TASS Agency by the name of V.A. Zhukov. He encountered these artefacts east and west of Hadiboh by accident - as a non-archaeologist he did not perform any excavations, yet picked them up while working as a journalist. In November 2008 he joined the Russian archaeological expedition led by Professor V. Naumkin. The stone tools he had found east and west of Hadiboh on the ground were not accompanied by the required geological and stratigraphic data for dating their age. Therefore, a new and targeted expedition was organized by a specialist of South Arabian Stone Age cultures, Dr. Khazri Amir Khanovich Amir Khanov from Dagestan, member-correspondent of the Russian Academy of Sciences. He, together with Dr V. Naumkin, confirmed the discovery in February 2009. As a result, tens to even hundreds of sites were discovered at the mouths of major wadis in the Hadiboh valley, and one locality at Wadi Ayhaft. These turned out localities with a large accumulation of stone tools – choppers (chopping tools made of pebbles), sharpened tools and flints.

In September 2009 Dr Amir Khanov presented a description of the findings, entitled "*The Discovery of Oldovan Industry on the island of Soqotra*" during an International Symposium "*The Earliest Human Migration in Eurasia*" in Makhachkala. A report on these findings (in Russian) can be found at <http://www.ihae.ru/konfer/simpozium.htm>. This short article is based on the latter report and on two additional publications (in Russian), by leading Russian experts on South Arabian archaeology, including Dr. Kh. Amir Khanov - all the authors are among the top authorities of South Arabian old and modern history (Sedov, Piotrovskij, Naumkin, Amir Khanov and Zhukov, who was the first to make such a historical discovery on Socotra), to which this note, kindly prepared for *Tayf* by V. Agafonov, is attributed.

**Note:** These Early Palaeolithic findings belong to *Homo habilis*, representing some of the oldest human-made tools in Arabia, and the earliest proof of sea faring by early man from the mainland to Soqotra. Such findings are remarkable and have also been found in other areas in Yemen, but it is unclear where the first Soqotran visitors originated from (North or West). See also the article by V. Cerný on the next page.



# SOQOTRA IN THE PAST

## Mitochondrial DNA Reveals Ancestry of Soqotrans

Viktor Černý

The island of Soqatra is highly important for anthropological research. The most straightforward reason to study the Soqotri people is that nothing is really known about their ancient origins. Another is its situation not far from the Horn of Africa, from where anatomically modern humans first colonized Eurasia some 75,000 years ago. As such, it might represent a settlement site of such ancestral "non-Africans". However, seeing as sea level at that time lay much lower, and that hunter-gatherers were adapted mainly to the low-lying coastal ecosystem, there is only a very small chance of revealing unequivocal archaeological proof dating from such a very ancient migration\*. The genetic material of the extant population, is, however, easily accessible.

A team of Yemeni, Czech, Portuguese and United States researchers started the first archaeogenetic investigation of the Soqatra Island in 2006. Thanks to the very kind collaboration of local people we were able to secure the material for such a study and to compare the first mitochondrial DNA sequences of the Soqotri people with the currently known phylogenetic system worldwide. In fact, we found very little African influence among the indigenous people of the island. The population likely experienced several founder effects but very close relations to Yemeni mitochondrial diversity are still quite clearly detectable.

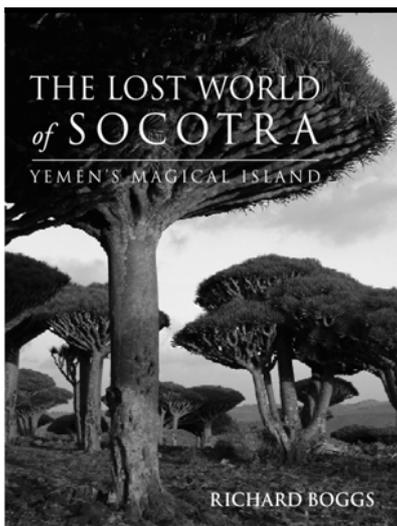
Moreover, the Soqotri data show evidence of autochthonous evolution, especially at the level of the mitochondrial haplogroup (a group of phylogenetically related sequences) known in the worldwide system as haplogroup R0a. This haplogroup is otherwise frequently also found in Arabia and Northeast Africa; however, we have identified, within the Soqatra R0a, two distinctive clades quite specific for the island and adjacent regions. The first one has never been found anywhere else in the world except for one case from Al-Mahra; we classified it as R0a1a1a. According to our calculations the origin of this specific clade corresponds with the period of some 4,000 years ago. The second Soqotri clade can be classified as R0a2f1 and is slightly older with its beginnings calculated at almost 6,000 years ago. Apart from Soqatra it was located only in adjacent regions such as Al-Mahra and Hadramawt. Geographic specificity of these unique mitochondrial clades suggests a population expansion that was enabled by favorable climatic conditions during early stages of the Holocene.

It thus seems that the main population boom in Soqatra was quite recent and might be related to the differentiation of South Arabian languages. That is not to say there are no traces of the first migration 'Out-of-Africa' in Soqatra, but we have not as yet identified any. In fact, there are some other rare sequences in Soqatra that will deserve closer attention. However, it is now more certain that more recent periods of population inputs from South Arabia had a much more important impact on the population history of the extant Soqotri people.

Viktor Černý

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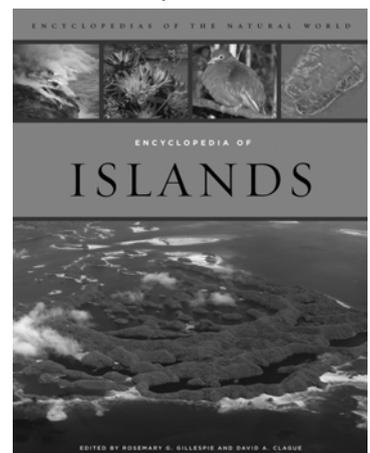


## Soqatra in Publications

In 2009-2010, a number of international publications, chapters and even books appeared on Soqatra. Several species new to science were described, such as one gecko that was not named yet of the genus *Hemidactylus*, new beetles (e.g., *Adelostoma*), grasshoppers, isopods, plants (e.g., *Dicoma*), etc., illustrating that the island's biodiversity is still underestimated. Other publications include archaeological studies on the *hawari*, studies on the Soqotran language, the medical and chemical properties of endemic plants, populations dynamics of *Dracaena* and genetic studies on origins of plants and animals.

Among the books, Ricard Boggs produced "The Lost World of Socotra, Yemen's Magical Island", published by Stacey International, richly illustrated and based on several years he spent on the island as an English Instructor. Also in 2009, a new "Encyclopedia of Islands", edited by Gillespie

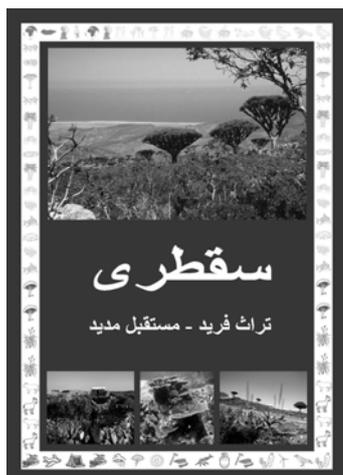
& Clague, University of California Press, was published – the most comprehensive book on biological processes on islands and a reference to all world archipelagos, with a special chapter dedicated to Soqatra.



# PUBLICATIONS

## Soqotra – Heritage and Future

Sue Christie and Roderic Dutton



The scientific exploration of the Soqotra archipelago dates back to the 19<sup>th</sup> century when surveyors reported on its unique plant communities. Research recommenced in earnest in the late 20<sup>th</sup> century, when an international team of terrestrial and marine bio-scientists worked on the island for several years with enthusiastic support from the Socotra Conservation and Development Programme led by Abdul Rahman al Eryani (currently Minister for Water and Environment in Yemen). Books and learned articles were telling the world that a high proportion of the plants and animals on Soqotra are unique – endemics – and it was being recognised internationally for its priceless heritage.

To some extent the sheer poverty of the island, which engendered a deep respect for conservation (if the water becomes polluted and if the plants and animals die, we die!), ensured that community-based regulation preserved the rangelands and the other habitats. Children worked alongside their parents from a young age and absorbed from them an understanding of the principles and practice of biodiversity conservation. The island's remote location and relative isolation reinforced this need for self-sufficiency.

However, circumstances began changing as this isolation eased. Schools were being built so both boys and girls started to spend the most active hours of their days away from their parents, usually being taught by teachers from other Arab countries who knew nothing about the flora and fauna of Soqotra, or its importance. The difficult three-day journey from

the mainland to Soqotra by fishing boat was being replaced, in 1999, by weekly flights from both Sana'a and Aden which brought mainland Yemenis and their business enterprises (big and small) to Soqotra, as well as a growing number of tourists. Also, an ever growing network of roads and imported vehicles were making it much easier for everyone to reach even the most remote parts of the islands.

A paradox developed. At the same time that the world was learning about the biodiversity splendours of the islands, the young people on the island were losing understanding of their heritage and how to live in harmony with it. The same thing had been seen in Oman in the 1970s when oil wealth fostered both biodiversity research and a reduced the respect of local children for their biodiversity when education shifted to new schools led by teachers from other countries. What could be done to mitigate the problem in Soqotra?

We were awarded Darwin Initiative funds to develop materials based on the accumulated scientific information on the culture and natural heritage which would help in delivery of the school curriculum (maths, science, social science and English). The materials referred to local biodiversity and the issues impacting upon it. However, through time, the project has evolved. A 130 page, 15 chapter, fully illustrated book in Arabic on Soqotra's natural and cultural heritage and its future management was published in January. The book is aimed not only at the older children of the island, but also at all people interested in it, including on the Yemeni mainland. It combines information on the local biodiversity with basic knowledge about the threats to biodiversity on a global scale. We hope it presents the issues in a way accessible to all readers on Soqotra, the mainland and more widely in the Arab world. Our goal is to develop pride in the unique heritage of the island, provide information about the issues and encourage local people to become fully involved in the debate on finding the right – sustainable - balance between conservation and development in the long-term interests of themselves and of the islands which are their home. To that end local NGOs were fully involved in the development of the project and are managing the distribution of the books on the island in a way which should maximise their usefulness. We have been able to print 10,000 copies of the Arabic book to distribute to children on the island in early 2010 through schools and local villages; we hope that there will be enough copies for every family to have one. While aimed at young people, including a question section, it is hoped that all the family will enjoy looking at the pictures and perhaps learning more about specific aspects of their island which they may not all be familiar with.

Additional funding from UNESCO, plus support from the Friends of Soqotra and the Development of Isolated Peoples charity, is allowing us to publish copies of the same book in English. We hope this will be used by people on Soqotra to help improve their English, but most copies will be sold to visitors to the island who will thus, we hope, walk more carefully when there! The proceeds will go to local sustainable projects. A few copies in both languages have been retained in the UK; if you would like one please contact sue at: [drsuechristie@aol.com](mailto:drsuechristie@aol.com). A donation of £15 per copy to include postage to Friends of Soqotra would be greatly appreciated.

# CONFERENCES

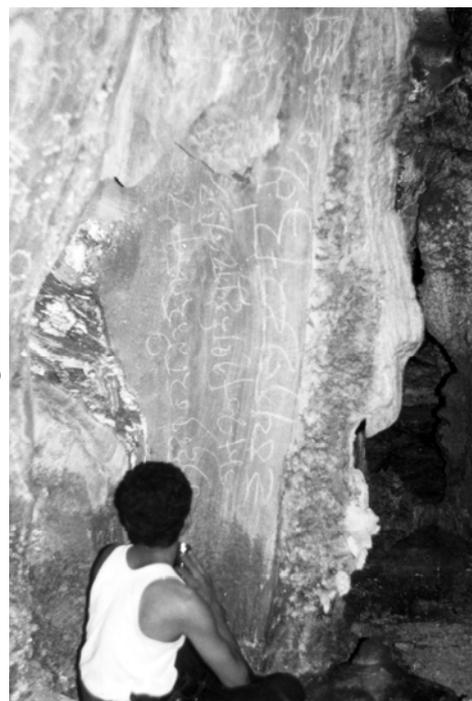
## Socotra on the Conference Scene

### Indian traders between Africa and South-Arabia: The Indian inscriptions from the Hoq Cave on Socotra

Dr Ingo Strauch (Freie Universität Berlin)

Global Geographies: the Indian Ocean in historical perspective Collaborative workshop between BASAS and BIEA, with IIRNS, India Royal Asiatic Society, 31st October 2009.

An extremely interesting presentation by Ingo Strauch provided some of the first glimpses into the wealth of inscriptions that were found by Peter de Geest and his SKP team in Hoq cave. Together with providing a detailed account of the number of inscriptions and their providence, Ingo demonstrated the variety of different languages used in the scripts present. These ranged from South Arabian, Ethiopian, Aramaic and several forms of Indian scripts and represented a diverse range of visitors to the cave from sailors to elites from the 2<sup>nd</sup> to 4<sup>th</sup> century AD, all of whom had left their names inscribed over the walls and speleotherms of the cave. This presentation has only further tantalised us with the amazing revelations that are being teased from the inscriptions and we are all eagerly awaiting the publication of the results in a forthcoming book.



### Dvipa Sukhadhara: The Forgotten Island of Bliss Julian Jansen van Rensburg (MARES Project, University of Exeter)

Ancient Indian Ocean Corridors: Placing Coastal and Island South Asia in their Broader Indian Ocean Context – A Joint UCL – University of Oxford Conference held at the School of Archaeology, University of Oxford. November 7-8, 2009

In my presentation I looked at Socotra's strategic position in the Indian Ocean trading networks, highlighting the importance of the island within this trading network through looking primarily at the evidence for Indian involvement. This Indian involvement on Socotra was highlighted by the Indian inscriptions found in Hoq cave but also occurs in the historical texts and limited archaeological excavations undertaken. This evidence has shown the various roles Socotra has played within the Indian Ocean, from being a source and market for frankincense, Dragons blood and the famous Socotran aloe to being a haven for pirates. Also, due to Socotra's strategic position and towering mountains it has also provided a beacon for all navigators throughout history as is seen in several Indian charts from the 15<sup>th</sup> – 17<sup>th</sup> centuries.

## Friends of Soqotra Annual Conference 2009



A successful 8<sup>th</sup> AGM was hosted by Dr Dana Pietsch at the University of Tuebingen, Germany, September 4-6, 2008 with 19 people present. The meeting included a series of well received lectures: Dr Mike Thiv on Plant colonization of the Soqotran Archipelago, Eike Neubert on terrestrial molluscs of Soqotra – opening a window back in time, Dr Victor Cerný on the human genetics and settlement of Soqotra Island, Julian Jansen Van Rensburg on Socotra Myths and Stories, based on archaeological, historical and ethnographic data concerning maritime links of Soqotra, Dr Lothar Stein, Soqotra 25 years ago and Dr Kay Van Damme, reporting on the new SGBP project, based on a contribution by Dr Nadeem Taleb. Priorities were outlined for this year, such as an update and renewal of the FoS Website. During the meeting, the

committee offered its formal support to SGBP and to members who have contributed in the last year: Sue Christie for her commitment to the publication of *Tayf*, John Farrar for this dedication to the website, Issam El-Din for his reliable translation, Hugh Morris for his contributions as Treasurer. The youngest attendant to the meeting was the newly born daughter of Dana Pietsch, named in honor of Dr Miranda Morris.



# RESEARCH

## How did Plants Colonise Socotra?

Mike Thiv

Botany Dept., Staatliches Museum fuer Naturkunde, Rosenstein 1, D-70191 Stuttgart, Germany

Since the first scientific exploration of Socotra's natural history in the 19th century, about 825 species of vascular plants have been reported for these islands. About a third of those cannot be found anywhere else in the world. This raises the question of how these plants have reached the islands and where they evolved.

Scientists have formulated many hypotheses concerning the origins of the Socotran flora. Strong relationships have been proposed to adjacent parts of the African and Arabian mainland, to Madagascar, the Mascarenes, southern Africa, the Canary Islands and the New World. Hitherto most of these hypotheses for Socotran plants have been inferred from distribution patterns of the genera or families these plants can be attributed to. For 20 years molecular analyses using genetic information on certain DNA sequences have provided a powerful tool to study phylogenetic relationships. We used this method to investigate the four Socotran species of *Aerva* (Amaranthaceae). Two of those, *Aerva javanica* – a plant which is used to stuff bolsters and saddle bags and for medical and cosmetic purposes – and *A. lanata*, are widespread in Asia and Africa. The other two, *Aerva revoluta* and *A. microphylla*, exclusively occur on Socotra. *Aerva revoluta* is found in higher parts of the Haggeher Mountains and *A. microphylla* usually grows on limestone in lower altitudes.

Our results indicate that the two Socotran endemic species, *Aerva revoluta* and *A. microphylla*, are most closely related to each other. The next closest relative is the southern Arabian *A. artemisioides*. Using specific methods like the reconstruction of ancestral areas and molecular clock calculations we propose the following scenario. The ancestor of the endemics reached the island about 5 (2-11) million years ago. At this time the Socotran archipelago was already separated from the Arabian plate, a process which started in the early to middle Miocene. Hence, we assume that this ancestor has colonised Socotra from Arabia. This might have happened via small seeds with hairs which are easily dispersed by wind. Other alternatives cannot be ruled out; for instance, migration on bird feathers also seems possible. Once on Socotra, this ancestor split into lineages which gave rise to *Aerva revoluta* and *A. microphylla*. Independently from this, the widespread palaeotropical *A. javanica* and *A. lanata* also colonised the archipelago.

This pattern seems to apply to many Socotran plants. The majority of species have close affinities to Arabia and eastern Africa, e.g., they likely came from these regions. This makes sense since the distances to cover are short and the numerous, natural arrivals of new plants in the past increased the probability that these species could settle on Socotra, asserting themselves and forming new species throughout time.

### Relevant Literature:

- Fleitmann, D., A. Matter, S. J. Burns, A. Al-Subbary and M. A. Al-Aowah. 2004. Geology and Quaternary climate history of Socotra. *Fauna Arabia* 20: 27-43.
- Miller, A. G. & Morris, M. 2004. *Ethnoflora of the Soqotra Archipelago*. Edinburgh: Royal Botanic Garden Edinburgh.
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*Pristurus* sp. from Wadi Kilisan, one of the endemic reptiles. Photo Kay Van Damme.



*Aerva revoluta*

# RESEARCH

## Seed Longevity of Endemic Soqotran Plants

Steve Scott, Royal Botanic Garden Edinburgh

A small collection of endemic Soqotran plants is kept in RBGE's Arabian house, a research glasshouse that is not open to the public. Ten new endemic Soqotran plants have been described from plants in the Arabian collection, including the critically endangered *Pelargonium insularis*. This species from Samha island has only been seen once by scientists; it had no flowers and could not be identified. However, seeds were collected by Tony Miller and grown by myself in the Arabian house. This gave us the opportunity to study the plant and its flowers and eventually describe it as a new endemic species.



Figure 1. Seedlings less than a year old.

Since 2008 and my last working visit to Soqatra I have spent some time going through the RBGE Germplasm bank and found other seed of endemic Soqotran plants collected by Tony Miller in the early 1990s. As the seed had been in storage for 15 years or more I was unsure if any would germinate. To my surprise the majority of species grew, including *Dracaena cinnabari*, *Wellstedtia socotrana*, *Farsetia socotrana* and *Kalanchoe rotundifolia*, and as you can see in Fig 1, the plants are flourishing.

Little is known about how long seed of endemic species of Soqatra remains viable but this little experiment has shown they can survive for a considerable amount of time if stored in the right conditions. We employ a very simple method of storing the seed. Firstly we allow the seed to dry naturally after which it is cleaned and placed in small seed packets. I often leave the seeds in their pods or capsules as this can save time and I have seen no detrimental effects from this on the seed or subsequent sowings. However, care would need to be taken with pests within the pods etc. Larger quantities of seed would have to be stored without their capsules to save on space. Finally the packets are put into small envelopes and labeled with their relevant collection details and then placed in small, airtight glass storage jars, illustrated in Fig 2. The jars are then stored in an ordinary refrigerator between 2-5°C which prolongs the life of the seed. This method could easily be undertaken on Soqatra but success would depend on a constant and reliable electricity supply.

The next step will be to collect seeds of more species and store them to see how long they remain viable. This knowledge will add to what we have already learnt regarding the best way to grow individual plant species; all plants require different conditions and it often takes many years to learn what those conditions are. In recent years we have been working closely with SCDP and Adeeb's nursery to transfer our knowledge to people in Soqatra. This will enable active ex-situ conservation of endemic and endangered plant species to take place on the island itself. I hope to return in the near future and continue this work.



Figure 2. Airtight seed storage jar.

# RESEARCH

## Recent Visit of the Mendel University Brno to Soqotra

Hana Habrova

During September 2009 a group of students and lectors from Mendel University Brno (CZ) worked on Soqotra. The three-week stay was oriented on:

### 1/ Inventory and mapping of *Dracaena cinnabari* (DC) trees using QuickBird imagery

The objective of this study is to map mature individuals of dragon trees (*Dracaena cinnabari*) at Firmihin (14 sample plots) and Shibhon (8 plots) using 5 x 6 km QuickBird multispectral image from February 2008. The spatial and spectral resolution allows identification of mature DC individuals and measurement of their crown diameters. Such data could result in maps of DC density and canopy closure. Reliability of maps is accompanied by field sampling - in total about 1500 individual trees were measured. Classification of satellite images continues in 2010.

### 2/ Outplanting of *Dracaena cinnabari* seedlings in wadi Zoriq

In 2007, local people planted 100 DC seedlings, protected them against livestock browsing and irrigated them once a week for their first 6 months. On a revisit only 15 surviving trees were found, i.e. planting was 85% unsuccessful. Possible causes could be drought, absence of light (due to protection by stone walls), destruction of the protection by people, followed by goat browsing. Sixteen new DC seedlings were planted using a stone wall protection of just 1m. Special seedling care and growth records will continue.

### 3/ Seedling inventory in 3 nurseries guided by Czech Development Assistance

Adib's nursery (Shilhinitin, N.coast), Noah Sail's nursery (Quareh, S.coast) and Sabar Ali's nursery (Zemhom, central part) were visited with these findings: Adib's nursery - 10 040 seedlings of 30 species (*DC* - 6280 pcs, *Boswellia elongata* - 780, *Boswellia socotrana* - 430, *Sterculia africana* - 405 pieces); Noah's nursery 3 085 individuals in 15 species; and Sabar's nursery - 592 plants in 12 species.

### 4/ Assessment of vegetation on the grounds of Yemeni President at Diksam

The President's land is fenced and encompasses area of about 4 ha. There are 16 adult trees of *Dracaena cinnabari* and surprisingly we found 286 one-year seedlings and 13 two-year seedlings around mother trees. The natural regeneration has occurred mainly due to access restrictions for goats.



### 5/ Environmental education

The aim was to find out what children know about nature, especially about trees and to encourage their knowledge on benefits arising from forest. During six village meetings interactive shows were held, demonstrating tree growth - from seed to adult plant (including a sophisticated *Dracaena* puzzle), table games with animals, local tree photos, etc.

Noh Sail Nursery Quereh

# RESEARCH

## Plant Communities and Vegetation Dynamic of Socotra

Michele De Sanctis<sup>°</sup>, Attorre Fabio<sup>°</sup>, Nadim Taleb\*, Chiara Patriarca<sup>°</sup>



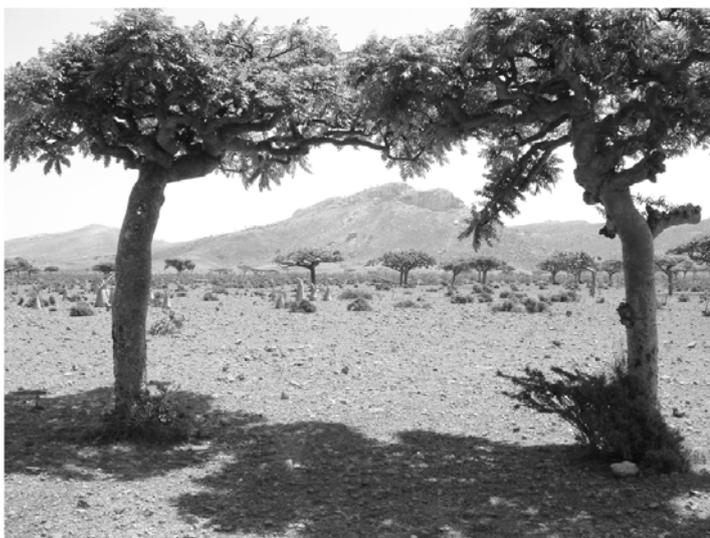
*Boswellia socotrana*

The Socotra archipelago hosts 837 vascular species, of which 308 or 36.8% are endemic. These figures place Socotra among the most important archipelagos for floristic diversity and endemism richness. Today the island's natural environment is threatened by rapid socio-economic development and our capability to protect species is ultimately dependent on the conservation of representative plant communities that support the endemic species. In fact, conserving biological diversity at the level of natural communities is an important complementary approach to single-species conservation efforts, not only because they are home for such species but also because natural communities contain important assemblages of both plant and animal species.

One of the main goals of our research in the framework of the Socotra Conservation and Development Program (SCDP), supported by the Government of Italy, the United Nation Development Program and The Government of Yemen was to provide the first comprehensive phytosociological analysis of the vegetation, its altitudinal zonation and dynamics. The knowledge of structural and functional features of Socotran vegetation will support the elaboration of effective conservation strategies to protect the unique biological heritage.

Data on vegetation were obtained from releves collected in the field between 2007 and 2009. In total, 318 releves (including 417 vascular plant taxa) were obtained. Each site was selected with respect to homogeneity of physical features, vegetation structure and species dominance and cover/abundance data for all vascular plants were recorded. These data were elaborated by means of multivariate analysis, specifically classification and ordination. This analysis allowed the identification of a great variety of plant communities. With respect to the forest types, according to the altitudinal gradient, the following plant communities have been identified: mangroves stands along the coasts, woods dominated by *Sterculia africana* on the basal hills, woodlands with *Commiphora ornifolia* and *Boswellia elongata* in the hills and limestone plateau, woods dominated by *Boswellia ameero* and those by *Dracaena cinnabari* in the sub-mountain areas, and closed forest characterized by *Pittosporum viridiflorum* on the granitic mountain of the Hagheer.

Scrubland vegetation is characterized by several types: the xerophitic *Croton socotranus* and *Jatropha unicostata* shrublands in the alluvial and foothills areas; shrublands characterized by *Buxanthus pedicellatus* in the hills areas and along the wadis; *Rhus thyrsoiflora* and *Croton sulcifructus* submountain shrubs and the shrub level dominated by *Hypericum scopulorum* in the mountain zones.



*Boswellia elongata*

The herbaceous vegetation presents also a great variability: halophylous grasslands dominated by *Atriplex griffithii*, along the coastal areas, overgrazed pastures characterized by *Tephrosia apollinea* on the basal and foothills, grassland with *Aristida funiculata* in the hill areas, mesophilous prairies with *Panicum atosanguineum*, overgrazed grasslands dominated by *Asphodelus fistulosus* in the submountain areas and those with *Heteropogon contortus*.

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# ETCETERA

## New Project of Mendel University – Management of Natural Resources in Tropics and Subtropics Study Program Innovations

**Petr Madera and Zdenek Cermak**

Mendel University in Brno has organized a new education project called "Management of natural resources in tropics and subtropics – study program innovations" since June 2009 on Soqotra. This project is financially supported by the EU operational program "Education for Competitiveness".

Students of the Faculty of Forestry and Wood Technology in Brno are the target group of the project, which is aimed at preparing specialists in the field of forestry and resource management in tropical and subtropical environments. The project takes advantage of the long-term experience of the faculty staff with development of projects on Soqotra.

The education program consists of two modules. Students learn theoretical essentials of the problems related to tropical and subtropical regions in the first, one-week long, module. Lecturers come from the fields of botany, dendrology, pedology, zoology, hydrology and climatology and they also include experts with long-term experience with operating in tropical countries. All subjects are taught with a focus on the tropics and subtropics. Students are also informed about the conditions on the island, its specific natural phenomena and culture. Twenty students are selected every year from the group that successfully passes the theoretical module and they take part in the practical module on Soqotra. This practical module takes place three times a year – in February, May and September – and lasts 21 days. Students operate in groups of 3 to 5 under the supervision of experienced lecturers. They process various field projects that they present to EPA (Environmental Protection Authority) personnel before the end of their stay.

The projects are focused mostly on endemic woody plants of the island and they are both application and research focused. The project has assigned support until January 2012. As a result of very positive reactions from among the students, we hope that it will be extended.

## WEBSITES

[www.FriendsofSoqotra.org](http://www.FriendsofSoqotra.org)  
[www.Socotraisland.org/fund](http://www.Socotraisland.org/fund)

The following websites also provide information on the island:

<http://rbgesun1.rbge.org.uk/Arabia/Soqotra/home/page01.html> Royal Botanic Garden Edinburgh. Plants, panoramas and ethnobotany.

[www.uni-rostock.de/fakult/mana/k/biologie/wranik/socotra](http://www.uni-rostock.de/fakult/mana/k/biologie/wranik/socotra). University of Rostock (Animals)

[www.sogotra.info](http://www.sogotra.info) A personal view by John Farrar.

[www.yemen-protectedareas.org](http://www.yemen-protectedareas.org)

[www.socotraproject.org](http://www.socotraproject.org) – SGBP website

[www.sogotra.com](http://www.sogotra.com)

[www.sogotra.net](http://www.sogotra.net)

If you know of other sites, please let us know and we can publish them in the next issue of *Tayf*.

### Friends of Soqotra Website

If you would like to include a note, article or report on the Web, please get in touch with John Farrar,  
[JohnFarrar@metronet.co.uk](mailto:JohnFarrar@metronet.co.uk).

## Ahmad Sa'ad Khamis Tahki from Homhil

by Asmaa' bint Sa'ad, his daughter

On 17<sup>th</sup> July 2009 my father suffered a stroke. For three months he was very ill indeed, lost a lot of weight and was unable to move or to speak. However, with the help of God and his own indomitable will, he has now managed to recover some 65% of his former abilities. He can now understand what is said to him, can move around on his own and is able to talk a little. We give profound thanks to God for this great mercy. The continual and devoted care given by his wife, and the loving support of his ten children, also contributed to this recovery. Important too was his own personality, refusing to accept defeat or to regard anything as impossible, and he has worked very hard to overcome the limitations imposed on him by his illness.

He had a great longing to see his homeland again and, despite his condition, he visited the island for a week in January this year with his son Hamdi and Hamdi's wife (from Soqotra). He was delighted to be able to see his people again and to show them that despite his illness, he was still himself.

Please join with all of us in wishing him a full recovery in the near future. He has devoted so much of his life to working for Soqotra and for his fellow islanders. He may rest assured that we, his children, will do our best to carry on this tradition, and we will do all we can to help the island and its people.

# CONTACTS

صندوق صون سقطري



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## TAYF

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come from the Yemeni press; full  
articles without named authors  
prepared by the Editor from submitted  
material.

## FRIENDS OF SOQOTRA

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 life  
of the island communities and  
support their traditional land  
management practices.

## SOCOTRA CONSERVATION FUND

The Socotra Conservation Fund is an  
independent, not for profit  
organisation dedicated to support  
conservation and sustainable  
development on the Island of Socotra.  
The Fund is a non-governmental  
organisation, born in Yemen in  
November 2002 and registered  
in the United Kingdom (Company No  
4545975). The main objective of the  
Socotra Conservation Fund is to  
support community based  
environmental projects on the Socotra  
Archipelago.

The SCF aims to improve the lives of  
the islanders through capacity building  
and activities such as ecotourism  
development and nature conservation  
handicrafts. All our activities are  
focused on sustainable development  
for the Socotra Archipelago. The Fund  
also supports the conservation and  
protection of the unique  
characteristics of the island and its  
culture.



أصدقاء سقطري  
Friends of Soqotra

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Solid waste at Khor Qalansiyah, March 2010. The problem of solid waste, mainly tins and plastic, is most obvious in major cities. Urgent effort is needed to tackle this issue. A German birdwatcher recently noted that "it was hard to distinguish bird from rubbish". This is an increasingly urgent problem. Photo by Kay Van Damme

The photos below were taken in November/December 1984, most of them in the western part of the island around Qalansiya, by Lothar Stein.

