

Tassili n'Ajjer Plateau of the Rivers

"The desert is beautiful," the little prince added.

And that was true. I have always loved the desert. One sits down on a desert sand dune, sees nothing, hears nothing. Yet through the silence something throbs, and gleams . . .

"What makes the desert beautiful," said the little prince, "is that somewhere it hides a well . . ."

Antoine De Saint-Exupery:
The Little Prince



Photo: Bokhenti

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ISBN 978-90-9025461-6

The publisher of the book:
Tassilin taivaltajat

Printed by Blurb (Netherlands)

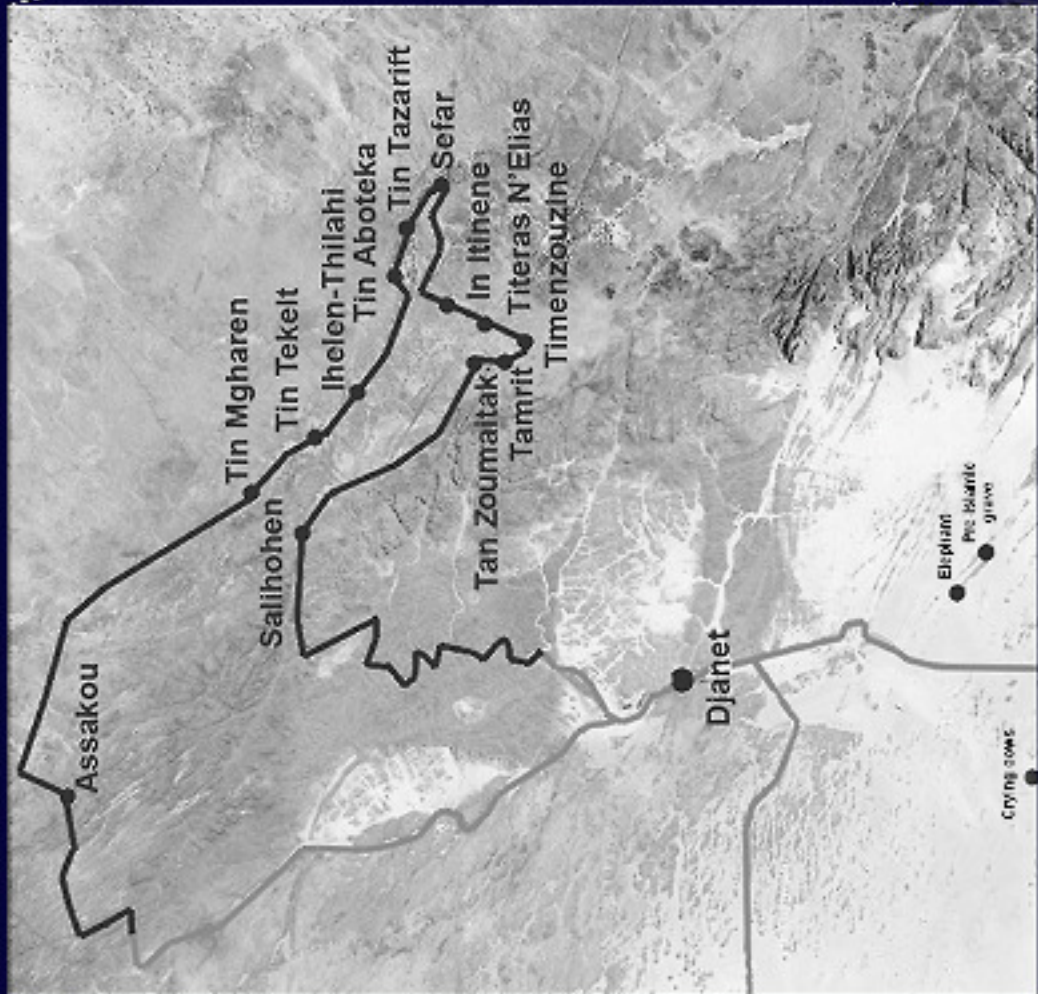
Design: Bokheni

Front cover photo: Bokheni
Back cover photo: Fadimata



Return from the plateau. Photo: Aicha

blurb



Wisdom of Sahara

Hiking in Algerian Tassili

"If you want to open up a window to the world you should prepare yourself for strange winds blowing inside." (Zarko Petan) This was exactly my experience. Some time ago I returned from Algeria a completely changed man. The Tuareg life had left a mark in my soul.

In retrospect I would say that every person in charge of environmental decision making should spend a couple of weeks living among the Tuareg on their terms. Why did I choose this specific destination, a former French colony (became independent in 1962). As a schoolboy I was enthralled by Henri Lhote's "Search for the Tassili Frescoes". Lhote examined and his team photographed and copied every painting and engraving they found at the Tassili n' Ajjer region. The fruits of this expedition can be found at Musée de l'Homme, Paris.

Adventure awaits

The feeling of adventure was in the air when I was looking for a bus to the 3T terminal outside the 2D terminal (FINNAIR arrivals) of the Paris Charles De Gaulle Airport (CDG). Six sturdy

men were standing about smoking cigarettes and what do you know, they were all dressed in military uniforms with the flag of Finland on their sleeves.

- What's your destination, asked one of them.
- To the middle of Sahara: Djanet, Algeria, I replied.
- Well, then we have an almost identical route. We are heading down to Chad to stop fights.
- Woah! There it was. I was going quite near the border of Libya, Chad and Niger. Already at the planning stage my wife had forced me to check, if my insurance was enough to bring me home in all possible situations. I got an assurance in print from my insurance company, "If...". Judging from discussions on the Internet, especially representatives of large companies had to have bodyguards while travelling in Algeria because of the danger of kidnapping. It was too late to chicken out now. One of the men guided me:
- Go straight ahead and take the steps down...there you'll find the shuttle that goes between the terminals.
- I said thanks and went about my way. Although I had to walk 300 meters with a rucksack on my back after the shuttle until I reached the terminal. brave ones



Photo: Boudem

Listen to the wind, it is the crying of the Sahara, longing to be green again.
(A song from the Algerian Hoggar)

Getting a visa was quite a challenge. It had to be requested from the Algerian Embassy in Stockholm. The price was a bit of a mystery as well. After a few phone calls I learned it was 300 Swedish kronas. The recipient and the purpose of the trip were considered to be important pieces of information. We were leaving in the beginning of November, when it is wintertime in Sahara. Sixteen days was thought to be a sufficiently long period of time. So, in due time we packed our things and took off. In Paris we switched planes. At the CDG I met the rest of our group, who had arrived in the morning aboard Blue 1.

On a big charter plane full of French people we flew past our destination by several hundred kilometers and landed in Tamanrasset near the south edge of Sahara. This was a peculiar flight: when we tried to find the airport in the dark, we had to circle many rounds before they turned on the lights. We were starting to feel our bumpy ride would end someplace else than the airfield. The pilot turned off the interior lighting and lit up some curious lights on the tips of the wings illuminating the fuselage of the plane. Maybe it was

a signal for the airport staff.

We did not get to Djanet until late hours, when the moonlight was at its finest. We had to go through quite an examination there. Every passenger was photographed with a device that was presumably a thermographic camera to ensure none of us were suffering from swine flu. A doctor in a white coat and a couple of green-robed nurses carefully observed the operation and gave out H1N1-flyers (in Arabic). The inspection lasted probably over an hour, because they x-rayed our luggage and went through our backpacks. We had to fill out an entry form (Arabic/French) and also a paper about valuables.

Well, finally we got into jeeps, in which we were sitting a couple of hooded gentlemen (our future assistants) with their teeth and the whites of their eyes shining in the moonlight.

Here was the actual beginning of our photographic journey in the UNESCO World Heritage site Tassili n'Ajjer National Park. Our intention was to spend the aforementioned two weeks wandering criss-cross in the area behind our camels and take pictures of



Photo: Fadimata

That which you do not need will kill you. (Tuareg proverb)

all the ancient rock art sites. There were five of us, two women and three men. Our Tuareg reinforcements consisted of two guides, an interpreter, a cook and three cameleers along with eleven camels. We immediately received Tuareg names. My name was Agaouad during the journey.

200 kilometers on foot in the height of 1700 meters.

To our surprise we noticed Sahara is not all sand and smooth dunes. Instead, we had to climb from the 1000 meters of Djanet to 1700 meters and on this level we wandered on foot the whole two weeks spending the nights in our little tents. The views were beyond belief. Steep passes, through which the camels had to climb or descend were full of huge boulders and near impossible to climb. The scenery was dominated by enormous shore stacks (needle-like rock formations), about 30 meters high, in the lower plain areas eroded by wind and water. At times the terrain was pitch black rock, extending as far as the eye could see, like straight out of a volcano's mouth. On two occasions we had to get our hands dirty and build a strip of road for the camels or we

would not have reached our destination for the night. We got up at 6 am and put up the tents. Then, at seven we had breakfast, which the cook had placed on a blanket. We sipped tea and munched the snacks kneeling or laying sideways on mattresses. Camels were loaded at eight and we got moving. When the camels were ready to go, the guide shouted "neglal" (= let's go!). For four hours we trotted after the guide and stopped to shoot rock paintings and petroglyphs. Then we had a moment of delicacy, provided by our cook at the resting place of the camels. The lunch was a vegetable tray, always very elegantly arranged. We never ate meat during the two weeks, if one does not count a little fish purée. After the meal we rested for a couple of hours (siesta) and in the afternoon we walked for additional two or three hours. Soon it would get dusky and we had to quickly find a spot that was smooth enough for the tents. Evening tea and warm soups disappeared in our bellies and then it was "laila saidal" (=good night!). In total we walked over 200 kilometers and in what terrain! The barren and unique landscape left the greatest impression on us after the rock art.

Photo: Agaouad

Better to walk without knowing where than to sit doing nothing. (Tuareg proverb)

Tuareg bread on the camp fire

The Tuareg way of life sure is something to reflect upon. With small sandals on their feet they would move through the hot, over 30 degrees centigrade, rocky spots, where horned vipers or scorpions could strike at any moment. With apparent ease they moved along and in the evening they gathered around their camp fire to tell about their observations. For the night they would wrap in their blankets in some hole in the rock. The temperature at night was under five degrees centigrade. Every night at the fire one of them prepared a dough for Tuareg bread (flour, water and a little bit of salt) in a small metal bowl. Strong arms beat the dough for over half an hour, making it swell and become solid. They then scooped a hole for the bread in the hot sand and ashes of the fire and placed the dough in it. The dough was then covered with hot ashes and burning shrubs and coals. After a little while they dug out a lovely, fresh bread (tagella), tapped off the sand and bon appetit! The Tuareg crumbled their bread in a common bowl among a soup dish and munched it up from there. Sometimes we could take part in this meal, but usually the cook had prepared a proper soup with

beans, peas, lentils or such. Time spent sitting around the fire in the moonlight was absolutely memorable. In the rocky wilderness, one had to be careful to not get lost while going for a leak.

In the Stone Age

I could not help but think of the people of the Stone Age who we scattered around these parts already 12 000-10 000 years ago. 8000 years ago these people were growing barley. The herds they tended could have sheep and goats. They could have been the first people to tame the aurochs. Scientists say this seems to have been the situation 7000 years ago in Sahara. But then the climate started to become more dry. Because they were herdsmen, people had to move to the rainier mountains in the middle of the desert, while some of them retreated to the savanna zone south of Sahara. It rained out here until about the year 3400 before present, after which the more severe dryness hit and never left. Perhaps the ancestors of the Tuareg and other migrating tribes had created these pictures, which filled every cave around here (Lonely Planet says there are about 15 000 pictures in the Tassili National Park).



Photo: Agabouad

Houses are the graves of the living. (Tuareg proverb)

And they were the reason we came here for.

Usually tourists come to Djanet or Tamarrasset to see Sahara and maybe take the trouble to visit some accessible sites on a rented car. We, however, would not settle for this kind of touring.

What did we see, then? The most impressive paintings were from the so-called Round Head period (about 10000 – 8000 years old) depicting slim human figures, deities, animals of the time such as elephants, giraffes, crocodiles, hippos, lions, ostriches, gazelles and so forth. If we look at the past of Sahara, we see a pattern of fluctuation. Sometimes it was very moist and the rivers and lakes have offered food for a large Neolithic group. Next, a very dry period with people moving south to once again, return with the coming of another moist period. There was a sort of constant "pumping motion".

Nowadays, as everyone knows, Sahara is a parched area, where nomads (Tuareg) can only herd their donkeys and goats in wadis and may find small quantities of water in oases

or holes in rocks. Here it was that we met real nomads, who still inhabit those very rock art caves with their livestock in an almost prehistoric way. We met a nomad mother with her daughter, who had lost their donkeys and seemed perfectly happy with how they could move from place to place. Algeria as an oil state has enticed the nomads to give up their livestock and move to city flats, which have been reserved for them, but in vain.

About 200 kilometers south of Djanet are the oil fields of Edjele and Hassi Messaoud. The price of gas did not seem very high to us. It was 23 cents per liter.

Surviving Sahara

I was left with a positive feeling after the trip, even though we had some minor problems with lack of fluid. Every day we got a 1½ liter plastic bottle of water for brushing our teeth and for other basic needs. At the end of our trip we apparently got chlorinated puddle water judging from its muddiness. We washed ourselves up with nothing but baby wipes. Strangely, our group stayed healthy the whole time, if one does not count changing band-aids.



Photo: wikipedia

Luxury begins the day a man starts wearing shoes. (Tuarreg proverb)

I managed to grind an acacia thorn through my sneaker. It entered almost a centimeter into the sole of my foot, but iodine and bandaid were enough to deal with it. Removing the thorn from the sneaker was a tough one. It was like pulling on a 2½ inch nail from a board. We wondered how the camels manage to rip the thorny acacia branches into their mouths on a whim.

What did Sahara teach us?

-First, that it is a place with the highest amount of rock art in the world. Perhaps one of the most famous petroglyphs is "The Crying Cow" (La Vache qui Pleure) near Djanet. It is thought to be about 6000 years old. Why does the cow weep? Because the puddle in front of it has gone dry. That is, Sahara has seen many periods suitable for habitation and then ones that were miserable.

-Second, that not all people in Sahara and Africa are happy with their lives. On this we got a thorough lecture from our guide after I had photographed a group that swiftly passed by our camp. The leader of the group answered our waving by wrapping his turban more in front of his face.

Someone at the end even waved back. The group of 23 young people was going towards the Mediterranean coast, maybe intending to get on a boat to Europe. They were mostly young men with not much load on them. Our guide said this folk might have come from quite far south, Chad, Mali, Nigeria etc. They were looking for a better life. According to the guide some of them might, due to lack of funds, end up as "house slaves" on some wealthy property, working for food.

-Third, that young (men) were able to spend lively nights on the streets without alcohol. The stores did not carry anything stronger than Turkish 0% ale, even though Algeria is known as a fine land for wine. The partying on the streets continued until morning hours after Algeria had won the match against Egypt in football (African Nations Championship).

-Fourth, that it pays off to obtain a strip of cloth five meters long right at the beginning and learn to wrap it around one's head Tuarreg style. It provides protection in for example a sandstorm. I used this achach headdress the whole time. I did not know how



Photo: J. G. Ghabliad

The difference between a garden and a desert isn't water but man.
(Tuareg proverb)

to wrap it, though, and our main guide prepared it every morning with eagerness. It provided protection against the thin sand dust, which floated around everywhere and blocked our little cameras with automatic shutters. The cameras had to be kept in, say, a minigrip bag.. at least the lenses. The dust was not seen clearly until dark under a headlamp.

-Fifth, that this severe dryness hitting East Africa yet again is not wholly because of mankind's actions. The areas we wandered in have remained unchanged for what must be over 3000 years. The places dried up at the end of the last Ice Age around 9000 – 10000 years ago. A tremendous amount of water was bound to ice. Then it was moist again for a while and enough water in Sahara for hippos and crocodiles.

-Sixth, that a Tuareg woman is not to be photographed without permission and a man does not want to get his picture taken with a bare face. As soon as you point your camera towards a man, he will wrap his cloth around his mouth in particular. This is related to some old belief. Maybe evil spirits can

enter through the mouth this way. We failed to get an answer to this.

-Seventh, that we must have been the first Finns to shoot those old works of art. At least none of our helpers had ever heard of Finnish people.

All in all our journey was a success and left permanent marks in our souls. I think someone even mentioned something about a new trip to newer sites that we missed.

Sakki Hanninen

Photo: Agasquad



From the left:
cook Khaled Benazza, guide Mohamed Touggui, Fadimata in the back, Aïcha in the front, cameleer Mohamed Eghahmad (brown scarf) in the back, guide Abdellah Elies in the front,

cameleer Abderahman Bilali (white scarf) in the back, behind him Agaouad (blue scarf), Oucha, Bokheni and local guide Hamid Ouaoua. Cameleer Khaouinia Touggui is missing from the photo.

Photo: Agaouad

The rock art of Sahara

The foundation for the research of Saharan rock art, including chronology, was laid by a German named Henri Barth in the middle of the 19th century after a six year expedition through Sahara. Barth had found pictures of oxen carved into the rock and concluded, correctly, that Sahara was at one point considerably more verdant than today and suitable for keeping livestock. He also noticed that the pictures never portrayed camels, which must have been introduced into Sahara long after the creation of the rock art.

Still in the 1930-40's several expeditions found many rock art areas in the mountain ranges of Sahara, mainly in the southern parts of Algeria and Libya. Interest in the prehistory of Sahara increased greatly after 1956, when plenty of new paintings and petroglyphs were discovered in the mountains of Tassili n'Ajjer. This work done in 1956-1970 by Frenchman Henri Lhote has been the most significant study of Saharan rock art to this day (see the index of literature, p. 200).

Lhote's team made thousands of copies of the rock art, kept today at the Musée de l'Homme of Paris. In 1982 Tassili and three years later the nearby Tadrart Acacus rock art area were accepted to the list of UNESCO World Heritage sites.

After the Algerian civil war (1991-2002) it has again been possible to travel into the country and also its eastern neighbor Libya. As a result of the growing number of travelers and the increased interest in Saharan rock art, the amount of books on the topic, mainly in French, is on the rise. There is also a good deal of websites presenting the subject.

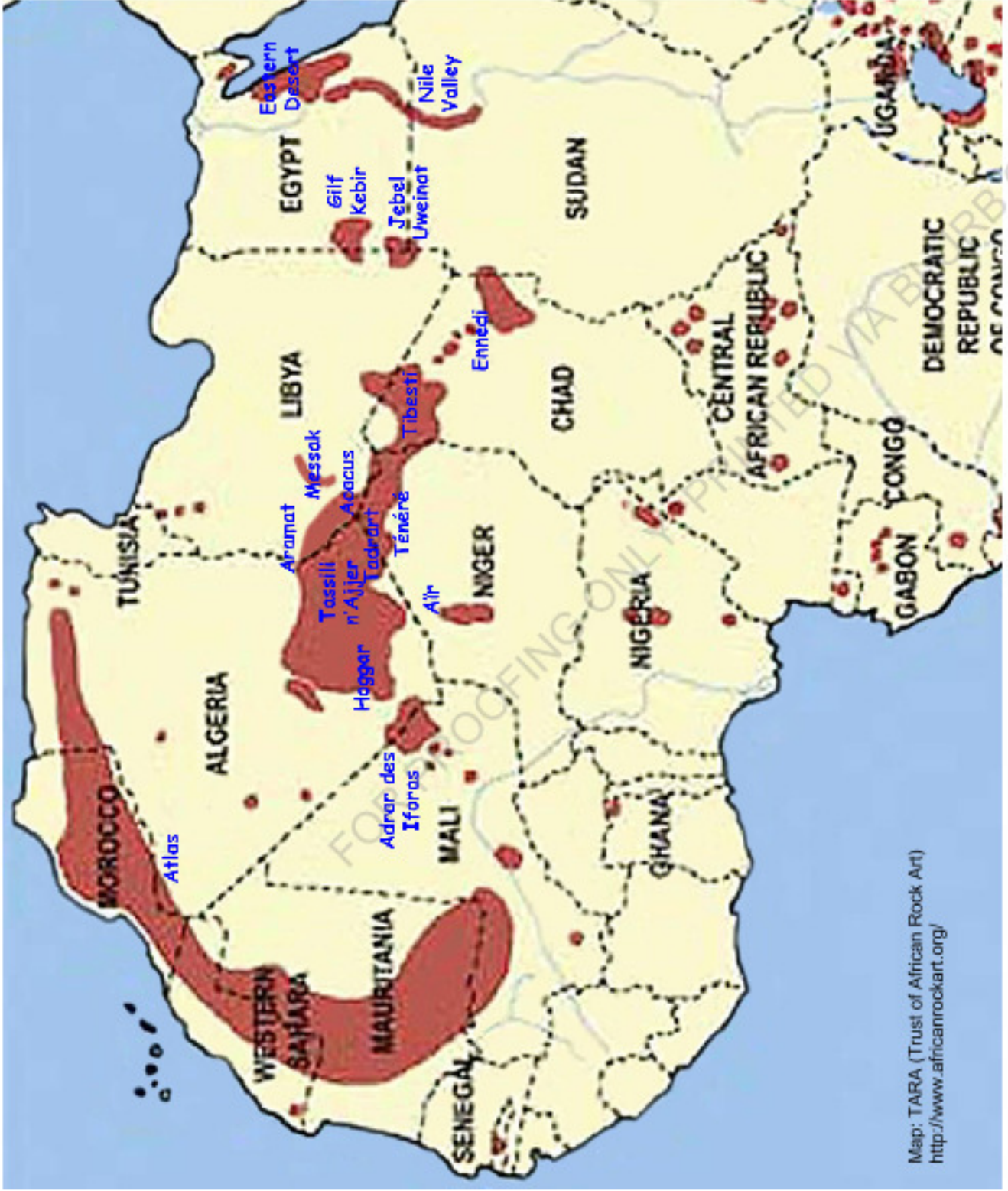
Already at the beginning of the 1960's, over 30 000 petroglyphs had been identified in Sahara and 10 000 paintings in Tassili alone. Rock art can be found and it has been created until present day in all mountain regions of Sahara. They include ten very important regions, which have been marked into the map included here. Tassili has the most rock paintings and also the significant Wadi Djerat concentration of 4000 petroglyphs.

Rock art was the first source of information to the scientific community of the fact that the Saharan climate changed from a verdant savannah with aquatic animals (crocodiles, hippos) to the desert it is today. At the turn of the 20th Century the geologist G.B.M. Flammard noticed that the extinct long-horned ancient buffalo Bubalus (Bubalus/Pelorovis antiquus) was depicted only in the oldest of the petroglyphs.

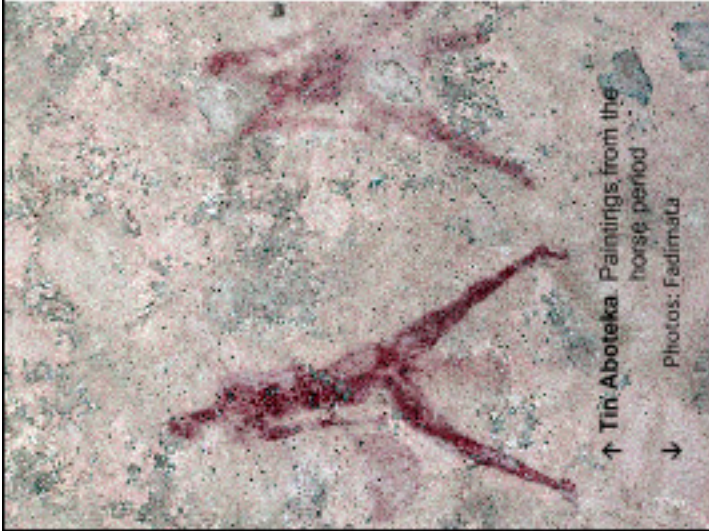
Soon it was discovered that in the next phase the buffaloes had been replaced



Photo: Fadimata



Map: TARA (Trust of African Rock Art)
<http://www.africanrockart.org/>



↑ Tiñ Aboteka. Paintings from the horse period ↓
Photos: Fadimata



by domesticated cows and large roundheaded human figures with "Negroid" features.

In the subsequent pictures the cow stayed the same, but the humans became smaller as did their heads. The next quite prominent change was the introduction of horse and carriage into the rock art, especially paintings.

The camel is depicted only in the youngest, more awkward pictures. This periodization made at the beginning of the 20th century based on animal and human figures is still the foundation of all research into Saharan rock art.

Researchers of Saharan rock art have preferred to speak about stylistic periods rather than periods of time. Specification of the periods has continued until recent years. The newest discovery, from the beginning of 21st century, is the Kel Essuf - period.

In 2002-2003 pictures of slightly human-like figures with animal tails were discovered in the southern part of Algeria's Tadrart. The raised hands and feet of the figures curiously showed only three or four fingers and toes. These pictures have been assessed to predate the Round Head ones.

Dating the art has been difficult and methods have included comparing information on the changes in climate and the subject matter of the pictures.

Radiocarbon dating is hard to do, because the fields with the rock art are still in use as camping places and organic material definitely tied to the art is not easy to find. A newer technique called accelerator mass spectrometer, which uses a particle accelerator, has not yielded any results worth mentioning.

The beginning of the creation of rock art in Sahara is thought to be the warm and, in the case of Sahara, moist early Holocene after the latest interglacial period 10 000-9 000 BCE. Monsoon rainfall began in Sahara in 8500 BCE and the climate got dry in 3000 BCE, after which the aquatic animals disappeared and raising livestock became difficult.

The domesticated horse spread from the east into North Africa around 1500 BCE followed by the use of the carriage, which came from the cultures of the antique through Libya. The horse was probably not used as a mount until 5th century BCE.

The camel arrived late, probably reaching West Sahara only in the 3rd century BCE. The first historical mentions of the West Saharan camel are from 46 CE. Due to the desertification the camel replaced the horse as a beast of burden in the first centuries CE. During the transitional phase both horses and camels were featured in rock art.

A summing up of Saharan rock art and datings is presented in the following table:

Name of the period	Motifs	Dating
Bubalus period. Also known as the Savannah phase, early hunter phase and Wild Fauna period	Large drawings engraved into the rock showing mainly large animals: bubalus-buffaloes, elephants, giraffes, hippos, crocodiles, lions.	Circa 10000-6000 BCE
Kell Essuf period. Defined only in the 21 st century and is not usually mentioned.	Figures resembling humans engraved into the rock. Possibly a forerunner of the Round Head period	Circa 10000-8000 BCE
Round Head period where Lhote has separated different phases. See Aisha's article in this book.	A great number of pictures. Big pictures by people who arrived from the south and pictures involving worship.	Circa 8000-6000 BCE
Nomadic period, also known as the period of the cow or ox herders. Plenty of pictures.	The pictures usually show bovines. The maximum size is a bit over a meter. People are shown as cattle herders and naturally. Also shown are oxen, sheep and dogs.	Circa 5500-2000 BCE
Horse period, also known as the period of the nomads/soldiers, who used carriages and mounts. In the central part of Sahara there are Libyan-Berberian glyphs in rock art, which horse riders have brought into this area.	Galloping horses and carriages play the leading role, in the final stage also the rider. Portrayed usually from the side. Size 20-50 cm. Probably tells about a new group of people, who came from the east. Elephant is the only large animal shown. In the final stage the human body is shown as two triangles with their tips facing each other and the ox gets more uncommon.	Circa 1000 BCE to 0
Camel period. Fauna of the pictures is the same as in modern day Sahara, like the antelope, gazelle, wild sheep, ostrich, goat and camel. Horse is very uncommon.	The camel appears. The style of the art is weakened and turns formulaic. Works resembling drawings by children are among these. Size 1.5-20 cm.	Circa 200 BCE to present day



- 1) The camping places of Saharan mountains contain lots of different ceramic objects from a long period of time. In the picture here is also a quartz arrowhead.
- 2) A warrior of the camel period from Ighlen-Thilahi. He is wielding a throwing spear and has on his belt a type of sword still used by the Tuareg.
- 3) The dead were buried inside stone circles about 5 meters in diameter with a standing stone often added. The burial style has stayed the same for thousands of years, which means the age of the grave is difficult to estimate without excavations. Photos: Fadimata

The styles of the rock art, the size of the pictures and particularly the way of depicting people have helped reach a conclusion that different tribes and nations arriving from the south have populated northern Sahara in different times and simultaneously.

The pictures tell us about what kind of clothing people wore and what weapons they used. During the Bubalus-period clubs, throwing staffs, axes or bows were in use, but not yet throwing spears. The next period shows only the bow as a weapon. In the horse period we see a big change in weaponry as the spear and the round shield appear alongside the bow.

In connection with art featuring carriages there also appears a knife hanging from the arm very much like the knife the Tuareg still use. Feathers used as head decorations on warriors start appearing at the end of the horse period. In the camel period the throwing knife is almost exclusively the weapon of choice and occasionally a Tuareg style sword and a gun.

All in all the rock art of Sahara, quantitatively the richest in the world, tells about the lives of people and how it changed in a very precise and detailed manner. This treasure trove has been preserved in the rough terrains of the mountain range for a long time behind closed state borders.

Fortunately the inhabitants of the area are proud of their art, which means this truly precious heritage will survive for future generations.

فاديماتا

K. The Algerian law strictly prohibits carrying any type of archaeological findings and even Saharan sand out of the country. The smallest of sand jars will be confiscated by the customs agents.



Round Heads

The name for this period comes from the distinct round human heads lacking facial features. The pictures are mostly paintings, the largest rock paintings in the world. A single figure might be over five and a half meters tall. The area where the Round Head style is found extends north to Tassili of Algeria, south to Djado of Niger and east to Acacus and Aramat of Libya.

The archaic pictures of Tassili n'Ajjer are situated at a distance of 20 kilometers of each other in a sanctuary of art comprised of the areas of Tamrit, Tan Zurnaitak, Tin Tazarift, Sefar and In Auanthal. This region has art with distinct themes and great variation of style: Oversized supernatural figures, floating or swimming figures from a shamanistic realm, single figures with feather decorations and body paintings, mushroom-headed humans, masks and masked figures, scenes of dancing and silhouettes of African big fauna like giraffes and elephants. Insects and fishes are also present and some oxen. Freeform human figures, antelopes and Barbary sheep (Ammotragus lervia), which have an evident cultic significance, have a special status compared to the other pictures.

The oldest of the Round Head figures have been painted with outlines only, mostly red, purple or white (according to Fabrizio Mori). Later pictures were completely filled with a palette of green, ochre, red and white. People in these later pictures (8600-7800 years BP / Mori) have Negroid features, which indicates that they arrived from deeper south.

The people are large and portrayed in a frontal position. The faces of female figures are shown in profile, breasts on top of each other, the belly is curved and navel protruding. Their hands of the women are often raised up as if they were seeking blessing from an enormous deity. The formless and large testicles of the deities, probably caused by elephantiasis, are typical of the pictures in the area. François Soleihavoup, among others, has written about this subject.

The huge size of the pictures indicates that wild animals have been a significant part of the livelihood of the people and they also had an essential role in the rituals of early hunters and gatherers. Wild animals, like giraffes, were approached in disguise so they would not be frightened. It was fed and



Photo: Aicha

thus became gradually accustomed to humans, who in turn benefited from its milk.

Women have a great importance in hunter societies and one can notice this in the Round Head pictures, which feature lots of women, also in hunting scenes where the only weapon is the bow. Pieces of decorated pottery from this era have been found as well.

The Round Head style is dated to 10 000-7000 years BP, though researchers have opinions differing quite a bit from each other: the earliest pictures are 7000 years old according to Mussolini and Le Quellec, while Aumassipi thinks they were made 10 000 years ago and Lupacciolo estimates 12 000 years. In any case the climate in this stylistic period was favorable to plants, animals and people - there was enough water for everyone.

The pictorial fields contain lots of pictures that have been painted on top of each other, which have proven to be a good thing for datings. Big deities have not been painted over, perhaps they have been honored this way.

The Round Head style or period has been a very strong influence to the periods that followed it.

Photos: Aicha

Written sources:

Jügen F. Kunz: Verborgene Schätze der Sahara. Druckhaus Kastner, Wolnzach 2009

François Soleilhavoup: L'art mystérieux des Têtes Rondes au Sahara. Imprimerie Loire Offset Plus à Saint-Etienne 2007

Unwritten knowledge:

Abdellah Elies, tuareg guide, Djanet, Algeria

Aicha



Photo: Aicha



Photo: Agaaouad



Photo: Agaaouad

On the colors of the paintings

Pigments

Earth colors have been in use from the beginning. The pigments available in the soil of each area have dictated the palette of the paintings. Yellow shades are iron hydroxides and clay containing silicic acid, red and ochre are iron oxide.

The most common color worldwide is red, its shades from bright cinnabar to near black.

Many of the pictures in Tassili n'Ajjer, especially the earliest, have been painted with a strong emphasis on the outline, mostly with red, purple or white.

It is not known whether mountain cinnabar was also used for red. Blackening in phases is however characteristic for this pigment, although blood used as a binding agent causes blackening as well.

Ochre's are the oldest known pigments. Dark ochre is reddish and the red shade is caused by a low amount of free iron oxide. The color is classified as a yellow ochre, even though strictly speaking it is close to brown.

Shades from brown to black were obtained from manganese oxide, greenish colors from iron silicate.

Charred bone and wood was also a source of black, white came from calcium carbonate (chalk) and calcium sulfate (plaster), talc was also used.

Binding agents

The earth color had to be ground up to a powder first. Cups carved into stone were used in the grinding. Each shade probably had its own cup to keep the shades pure.

A binding agent was then rubbed into the powder to make sure the color would stick to the painted surface. Red pigments have been mostly rubbed into blood, white ones into milk. The casein in the milk acted as a glue and it included some fat.

Egg white is also an old binder for colors. Gum Arabic is another. It was obtained from hardened sap of acacia, which is waterproof as a powder.

Tuareg nomads have used this resin, abergarian n-absa, as an ingredient for soup in a tight situation.

Also animal fat and possibly honey, beeswax and bird feces have been employed as binders.

Methods of applying paint

It is likely that different brushes of various sizes were used to paint. Animal hairs, bird feathers and softened plant stems are possible elements of the tools.

There might have been painting by fingers and blowing pigment from one's mouth to the surface, which is perhaps how the white color around pictures of palms was applied.

Aicha

Written sources:

Jürgen F. Kunz, *Verborgene Schätze der Sahara*, Druckhaus Kastner, Woinzach 2009

Akke Kumlien, *Taidemaalauksen käsikirja*, WSOY, Porvoo 1962



Aicha





At the beginning of our journey, it seemed that all the waters of the Plateau of Rivers would have flooded down into the valley!

Photo: Bokheni

Hargel (*Solenostemma argel*). Leaves of the plant are used in, for example, liver and kidney ailments and the treatment of wounds (image p. 188). Hargel is an oleander plant (*Apocynaceae*). Its Finnish relatives are the poisonous swallow-wort and lesser periwinkle. Photo: Bokheni



A picture from the beginning of our trip. The Tassili plateau is still far ahead.

Photo: Oucha

From the dimness of the narrow pass of Assakou into light, 600 meters above the level we started at.

Photo: Aïcha





Rose of Jericho. This plant can survive up to 50 years of drought.

Photo: Aïcha

Phallic symbols or spacecraft? The drawing is certainly old, from the Bubalus period.

Photo: Fadimata





Tin Mgharen. Shepherd following a bull or perhaps a horse. This separate picture poses an opportunity for other interpretations. Are the legs of a second shepherd behind the animal? Horses and carriages period.

Photo: Agaouad

Tin Mgharen. An enigmatic figure. The wheel under the animal indicates that we are looking at a horse. Horses and carriages period.

Photo: Aicha





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Tin Mgharen. Design for an apartment, carpet or wall tapestry. Camel period.

Photo: Bokheri

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Tin Mgharen. Guide Abdellah Elies interprets a Tifinagh text. Writing in Tifinagh started about 2200 years ago, during the Camel period.

Photo: Bokheri







Tin Mgharen. Camel rider with spear. Camel period.

Photo: Oucha

Tin Mgharen. Hunting scene from the Nomadic or Camel period. Camel and rider added later.

Photo: Aicha



Tin Mgharen. Drawings in the Saharan rocks have often been made with a thin line and making them out is sometimes difficult. In the light of the setting sun our shadows have moved into the prehistoric time to respect the buffalo. Bubalus period.

Photo: Bokheri

Tin Mgharen. A man on all fours with a knife on his waist, behind him another figure. On the left side of the picture a prey animal being observed. Bubalus period. There is room for other interpretations.

Photo: Fadimata





Tin Mgharen. Doodlings by or for a child in the Camel period.
Black characters were probably added later.

Photo: Agaouad



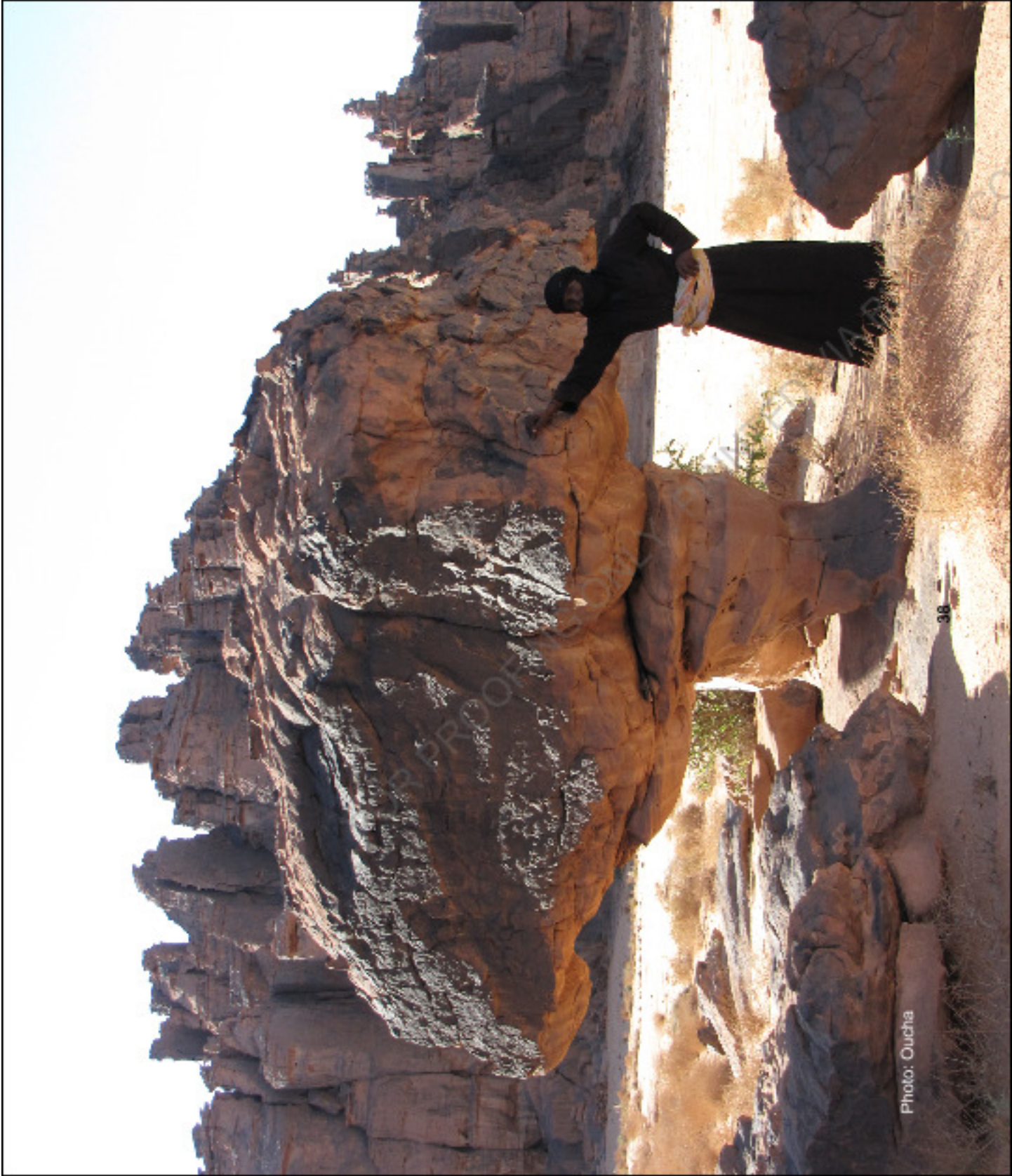


Photo: Ouchta



ihelen-Thilahi. Rare picture of palm trees. Most likely from the Camel period.

Photo: Aïcha

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Ihelen-Thilahi. Goat with horns and hunter with spear bottom center. On the left a frame of a hut (?), bags hanging from it. Top middle we see a horned animal with human hind legs. Normadic period.

Photo: Agaouad

Ihelen-Thilahi. Many games that have been played for ages are known from Africa. One only needs holes pressed in the sand and sticks or stones to play them.. Normadic period.

Photo: Bokheni





Ihelen-Thilahi. Typical half caves (shelters).

Photo: Agaouad

Ihelen-Thilahi. Petrified footprints perhaps (?)

Photo: Agaouad







Ihelen-Thilahi. Hut being built. Nomadic period.

Photo: Bokheni



Ihelen-Thilahi. Giraffe painting from the early Nomadic period.

Photo: Agaouad





Ihelen-Thilahi. Petroglyph portraying a cow from early Normadic period.

Photo: Aicha



Ihelen-Thilahi. Buffalo and shepherd with his dogs from the Nomadic period. Picture is painted over an older one, which can be seen in the background.

Photo: Agacuaed

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Ihelen-Thilahi. In the upper part, a buffalo painted red is being chased by two dogs. Nomadic period hunting. Below are pictures in black from the Camel period.

Photo: Bokheni

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Ihelen-Thilahi. Spectacular battle scenes were also depicted during the Camel period. Tifinegh script on the right.

Photo: Aïcha





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Ihelen-Thilahi. Model of a house from the Horse or Camel period.

Photo: Fadimata



Ihelen-Thliali. Two female figures from the Round Head period.

Photos: Oucha





Ihelen-Thilahi. Two horned animals, a mare and foal. Round Head period.

Photo: Fadimata

Ihelen-Thilahi. The human figure in the middle with perhaps a feathered headdress has been discussed a lot. Some have even assumed it is a portrait of a Martian. Round Head period.

Photo: Fadimata



Ihelen-Thilahi. Skillfully painted giraffes. Early Nomadic period.

Photo: Agaouad

Ihelen-Thilahi. Lunch in on the ground. French fries as side dish this time, à la Tuareg.

Photo: Fadimata







Tin Aboteka. Known painting from the Horse period depicting a couple riding in a carriage and a dog running beside them. Pictured are also a woman and a man. During the Horse period people were portrayed having a narrow waist and triangular shoulders. Photo: Bokhemi

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Tin Aboteka. Human figure from the Horse period. Ring pattern over his head is probably painted at a different time.

Photo: Agarouad

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Tin Aboteka. Pregnant woman and human figure with the head of an animal. The curved lines are difficult to interpret. Nomadic period.

Photo: Fadimata







Tin Aboteka. Human figure apparently from the Horse the period. Large headdress or coiffure.

Photo: Agaouad

Tin Aboteka. Lion with coiled tail. A few excerpts from the Camel period.

Photo: Oucha





Tin Aboteka. Characteristic of the Round Head period are big-headed and large-sized people and animals. The auroch in the picture touches a man with its muzzle. The height of the wall is approximately 2 meters.

Photo: Bokheni



Tin Aboteka. Detail from previous photo. Gigantic figure with body-painted arms and legs.

Photo: Agaouad.



Tin Aboteka. Detail from the leftmost picture.

Photo: Bokheni





Tin Aboteka. A gigantic hunter wielding a bow and arrow and clearly having Negroid features.

Photo: Oucha

Tin Aboteka. Close-up of a hunter.

Photo: Oucha



Photo: Bokhesa



Photo: Fadimata



Tin Tazarift. Spectators of the paintings in the Tassili n'Ajjer nature reserve must remain behind low stone fences. Depicted are hunters and dancers from the Round Head period. The pictorial field has a height of about 3 m and a width of about 5 m.

Photo: Fadimata



Tin Tazarift. These "Martians" from the Round Head period are probably wearing hats with extensions resembling rabbit ears.

Photo: Aicha



Tin Tazarift. Round-headed figure surrounded by rams.

Photo: Aicha

Tin Tazarift. Shepherd and cows. Rock paintings have been moistened with water or even brushed with oil in hope of better photographs. Unfortunately, this unacceptable method spread widely, causing the images to gradually fade away. Guilty parties include researchers (Lhote) as well as guides and tourists.



Photo: Fadimata





Tin Tazarift. A magnificent painting from the Neomedic period with probably a father and child herding spotted cows.

Photo: Oucha

Tin Tazarift. The slender deer are from the Round Head period.

Photo: Fadimata



Tin Tazarift. "Sprinter" and a cow from the Nomadic period.

Photo: Aïcha

Tin Tazarift. The most common and most widespread motif in the world is the palm, which here have been made by blowing pigment around the hand (a so-called negative picture of a palm). Although we saw only a few pictures of palms on our trip, according to Lajoux it is common in Tassili. Photo: Aïcha







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Tin Tazarift. Typical motif from the Nomadic period. The female figure on the left side does not necessarily belong to the same composition.

Photo: Aïcha

Tin Tazarift. This is one way of contemplating the world around us.

Photo: Aïcha





Tin Tazarift. Squatting woman nurturing a child / children.
Nomadic period.

Photo: Aicha

Tin Tazarift. This is apparently an aardvark (*Orycteropus afer*).

Photo: Fadimata



Tin Tazarift. Anthropomorphic figures: a human figure with the head of an animal on the left, on the right one with feathers. Round Head period. Figures are badly weathered.

Photo: Aicha

Tin Tazarift. Dancers. Woman in the middle is about 50 cm tall. Round Head period.

Photo: Fadimata







Tin Tazarift. Big (50 cm) picture of a hand from the Round Head period. The hand is missing a finger and the remaining fingers seem to be bandaged...

Photo: Aicha

Tin Tazarift. Typical Round Head period hunters. The bow was already known at that time in Sahara.

Photo: Bokheni



Tin Tazarift. One of the most famous paintings in Tassili is an Egyptian boat, if you believe Henri Lhote. Many scientists doubt his interpretation. It may be a snake or even a curved hunting instrument. Early Nomadic period.

Photo: Fadlimata

Tin Tazariff. Round Head period male figure, which carries an object shaped like a crescent Moon, the purpose of which is unknown. The man carries a staff with a spherical head in both hands.

Photo: Aicha







Tin Tazarift. Round Head period male figure, which carries an object shaped like a crescent Moon, the purpose of which is unknown. The man carries a staff with a spherical head in both hands.

Photo: Aicha

Tin Tazarift. A man and a building, which may be an oven. Round Head period.

Photo: Oucha



Tin Tazarift. Scene with dancers, people and animals. The figure on the left is probably a monkey.

Photo: Fadimata

Tin Tazarift. Close-up of the previous. People are probably wearing headdresses decorated with feathers.

Photo: Bokheni





Photo: Bokhent



Photo: Bokhenti



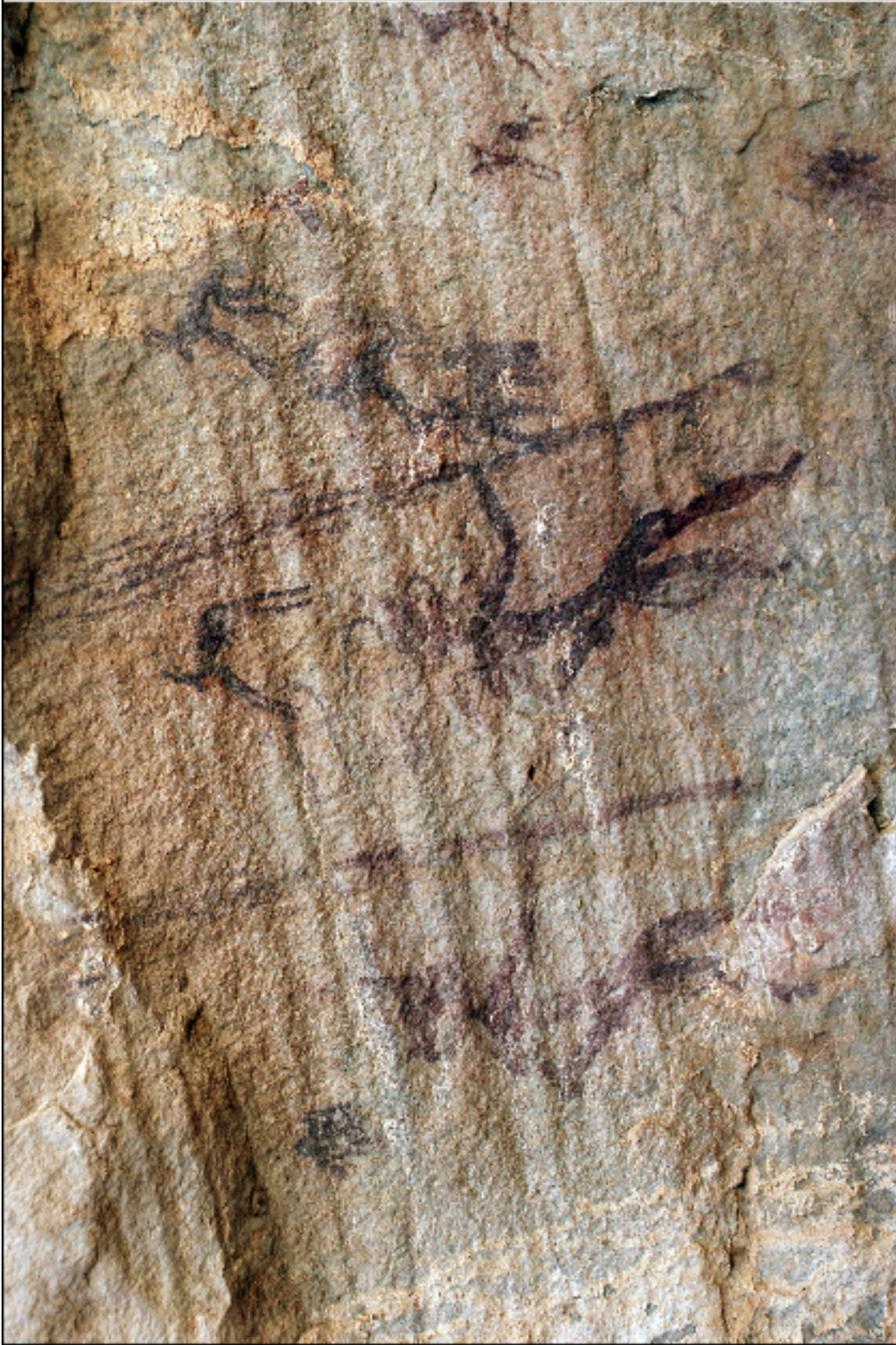
Sefar. A large fish from the Round Head period and above it a fox with long ears, likely younger than the fish.

Photo: Aicha

Sefar. People dancing, from the Round Head period.

Photo: Fadimata





Sefar. Men and foxes from the Round Head period. The men are holding long forked poles, which have a round object attached to their lower parts.

Photo: Agaouad

Sefar. Dancing women wearing masks and short reed skirts. Round Head period.

Photo: Bokheni





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Sefar. A big painting from the Round Head period with a large outlined ox at the top and below it two outlined human figures.

Photo: Aïcha

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Sefar. Girls dressed in short dresses in a ritual position. Round Head period.

Photo: Fadimata

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Sefar. Close-up of the previous showing "horned" headdresses.

Photo: Fadimata

Sefar. A famous painting from the Round Head period. Male figure in the middle can be shaman with a headdress. The woman on the right is in a worshipping position.

Photo: Bokheni



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Sefar. Close-up of the previous, which shows how both characters have been depicted without palms.

Photo: Ouchta

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Sefar. Round Head period motifs.

Photo: Aïcha







Sefar. Detail from the previous, picture of a bird or a butterfly. It has been interpreted as a butterfly by F. Soleilhavoup.

Photo: Bokheni

Sefar. A hunter from the Neolithic period. The rock face also has a small wasp nest.

Photo: Fadimata



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Sefar. Big herd of cattle and three families, perhaps the owners, from the Nomadic period.

Photo: Fadimata

Sefar. A hunter with bow and arrows. Nomadic period.

Photo: Agaouad





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Sefar. A sheep and a deer from the Round Head period. The circle may be a symbol of the Sun.

Photo: Aïcha

Sefar. A woman giving birth hides in the ceiling of a small depression in the rock.

Photo: Fadimata





Sefar. A burly hunter from the Normadic period.

Photo: Aïcha

Sefar. Men dancing in line from the Round Head period. Sexual symbolism can be seen in the picture.

Photo: Oucha



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Sefar. Dancing figure painted with outlines only. Nomadic period.

Photo: Fadimata

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Sefar. Long haired lanky hunter from the Nomadic period. Caricature. Does the man have a some kind of loincloth? The pattern is repeated in many pictures of Tassili. And what object is he holding in his left hand?

Photo: Oucha









Sefar. Overlapping images from the Round Head period. In the bottom middle a large ox decorated with ribbons, on top of which has been painted a mother with a newborn.

Photo: Fadimata

Sefar. Close-up reveals an ejaculating man. The man and woman are linked with a familiar crescent Moon symbol.

Photo: Bokheni



Sefar. Part of a fresco consisting of overlapping images from the Round Head period. In the middle a big disembodied arm, the significance of which is unknown. Small runners may be from a later period.

Photo: Aicha

Sefar. Nomadic period battle scene. Maybe this is a battle for diminishing pastures. At the bottom are Round Head period rams.

Photo: Aicha





Tin Aboteka. Detail from the previous painting.

Photo: Fadimata

Sefar. Round Head period giraffe and rams. The figure "riding" on the giraffe is probably painted later.

Photo: Fadimata







Sefar. In the background a Round Head period man, with white figures painted on top.

Photo: Fadimata

Sefar. A painting from the Nomadic period. The leftmost woman has again a weird crescent-shaped object on her shoulder. Human figures may be from different times.

Photo: Oucha



Sefar. A family portrait from the Round Head period.

Photo: Bokheni

Sefar. Round Head period figures in worship. In this field of paintings there are several enigmatic ring patterns.

Photo: Oucha



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Sefar. Round Head period shaman.
Note the worshipping figure at the right
calf.

Photo: Agarouad



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Sefar. The famous large "God of Sefar", height about 250 cm. This deity being worshipped seems to suffer from deformities, the largest of which are the huge testicles, implying elephantiasis (Soleihavoup, Kunz).

Photo: Fadimata

BBC NEWS 8.10.2008

'End in sight' for elephantiasis

A painful and disfiguring disease affecting more than 100 million people worldwide could be wiped out by 2020, say experts.

Lymphatic filariasis (LF), often called elephantiasis, is caused by parasitic worms and causes grotesque swelling of the limbs, breasts and genitals.





Sefar. The same wall at a greater distance photographed from below. Note in particular the way animals are portrayed. The body is seen from the side, but certain parts of the body from the front: legs, horns and ears. On the back of the animal is a woman giving birth (?). Photo: Bokheni

Sefar. Female figure in worship, depicted in a typical style with breasts on top of each other.

Photo: Agarouad







Sefar. At the feet of a deity is a large group of worshipping figures. An enigmatic oval on the right.

Photo: Aicha

Sefar. Conflict from the Round Head period.

Photo: Aicha



Sefar. Large auroch with an antelope painted on top. Another antelope is almost in contact with a natural crevice. A crescent-shaped object usually connected with people is attached to its feet.

Photo: Fadimata

Sefar. Round Head period female figures, one of which is turned towards a crack in the rock.

Photo: Fadimata



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Sefar. The crowned "Fish god" of Sefar adorned with a crescent (L'hole) from the Round Head period. The fish has also been interpreted as a bird. Height about 250 cm.

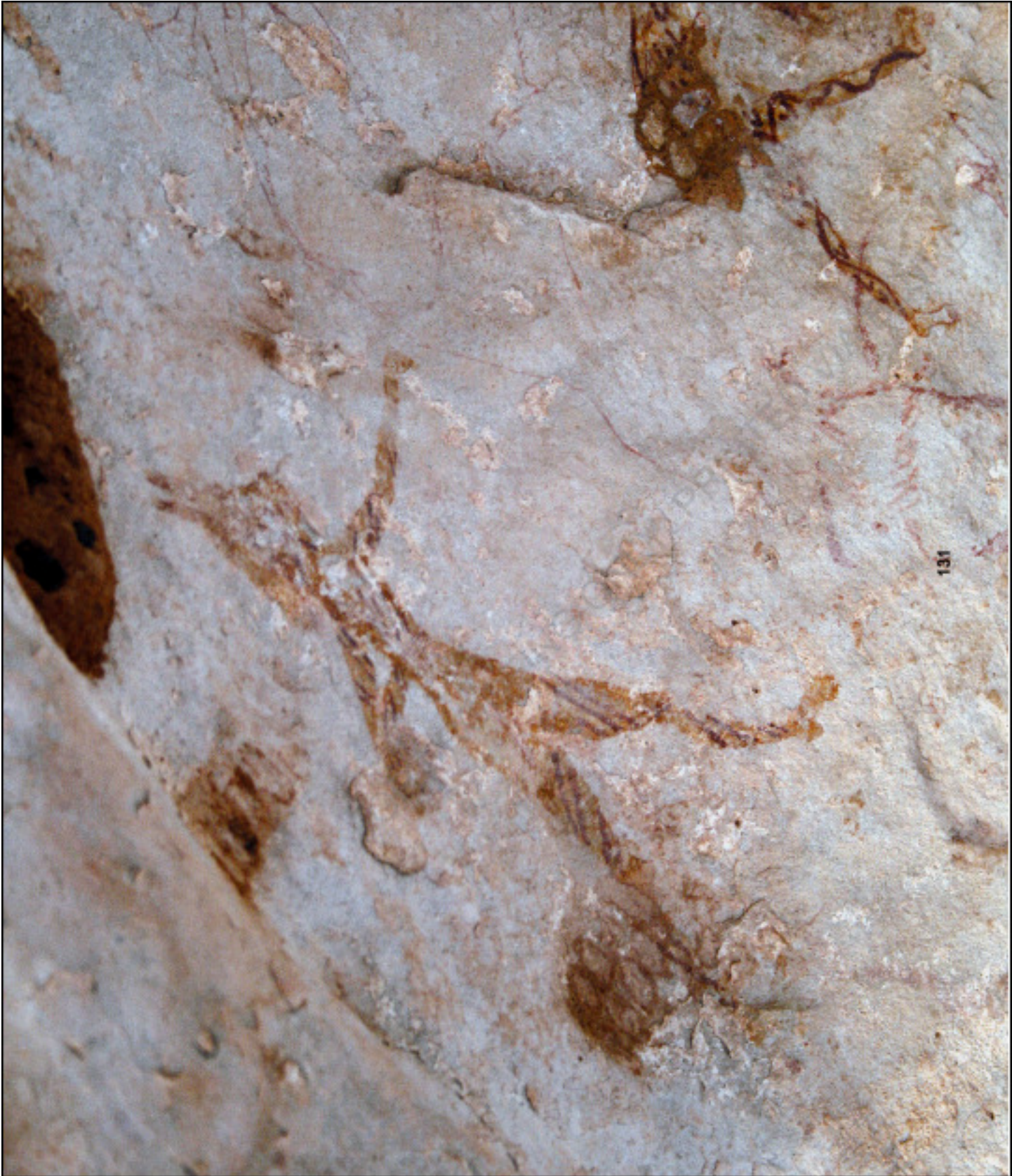
Photo: Agaouad

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Sefar. On the left a human with a "rabbit hat", on the right an ostrich. Round Head period.

Photo: Aicha







Sefar. Nomadic period hunters. Pictures painted at different times.

Photo: Bokheni



Sefar. Nomadic period man.
Caricature.

Photo: Fadimata



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Sefar. Female hunter bent over in front of a ram. Strange long-necked bird figures. People in everyday chores. Pictures from different periods. The person on the right may be from the Horse period, others from the early Normadic period.

Photo: Aicha

Sefar. Dancers from the Round Head period.

Photo: Fadimata







Sefar. Picture of an arm, with a rhinoceros painted with a thin line below or on top of it and an ostrich painted with a thick line. Only the neck of the ostrich fits in the photo. Round Head period.

Photo: Bokheni

Sefar. Slender antelopeis from the Round Head period.

Photo: Oucha





Sefar. Dancers dressed in decorative clothing from the Round Head period.

Photo: Aicha

Sefar. Dark dancers are connected by a rope.

Photo: Aicha





Sefar. Female dancers decorated with bodypaintings or clothing pictured from behind. Round Head period.

Photo: Agaouad

Sefar. "Masquerade" at Sefar in the Round Head period.

Photo: Aicha



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Sefar. A masked woman known as the "Black Lady" from the Round Head period. It is unclear what the woman is holding in her hand. Perhaps pottery.

Photo: Aïcha

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Sefar. Life of the Nomadic period at the bottom of the picture, the upper part possibly painted later.

Photo: Oucha

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Sefar. An anthropomorphic figure from the Round Head period.

Photo: Agaouad



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Sefar. Woman decorated with stripes
from the Round Head period.

Photo: Bokheni



FOR I



Sefar. Pig herders from the Normadic period.

Photo: Agaouad



Sefar. Stylized wasp masks from the Normadic period.

Photo: Agaouad



Sefar. Double triangle people from the Horse-period. Picture of camel added later.

Photo: Oucha



Sefar. Houses are shown from above and the people living in them from the side. Camel on the left and a horse with rider on the right. Camel period.

Photo: Agouad



Sefar. Palm presses. The picture in the top center indicates that the so-called negative palm picture has been overlaid by a palm pressing with red pigment.

Photo: Agarouad

Sefar. Possibly a Camel period hunting scene with dogs surrounding a wounded ram.

Photo: Agarouad





Sefar. Horse-period battle scene.

Photo: Oucha

Sefar. Route traveled by camels and donkeys.

Photo: Agaouad





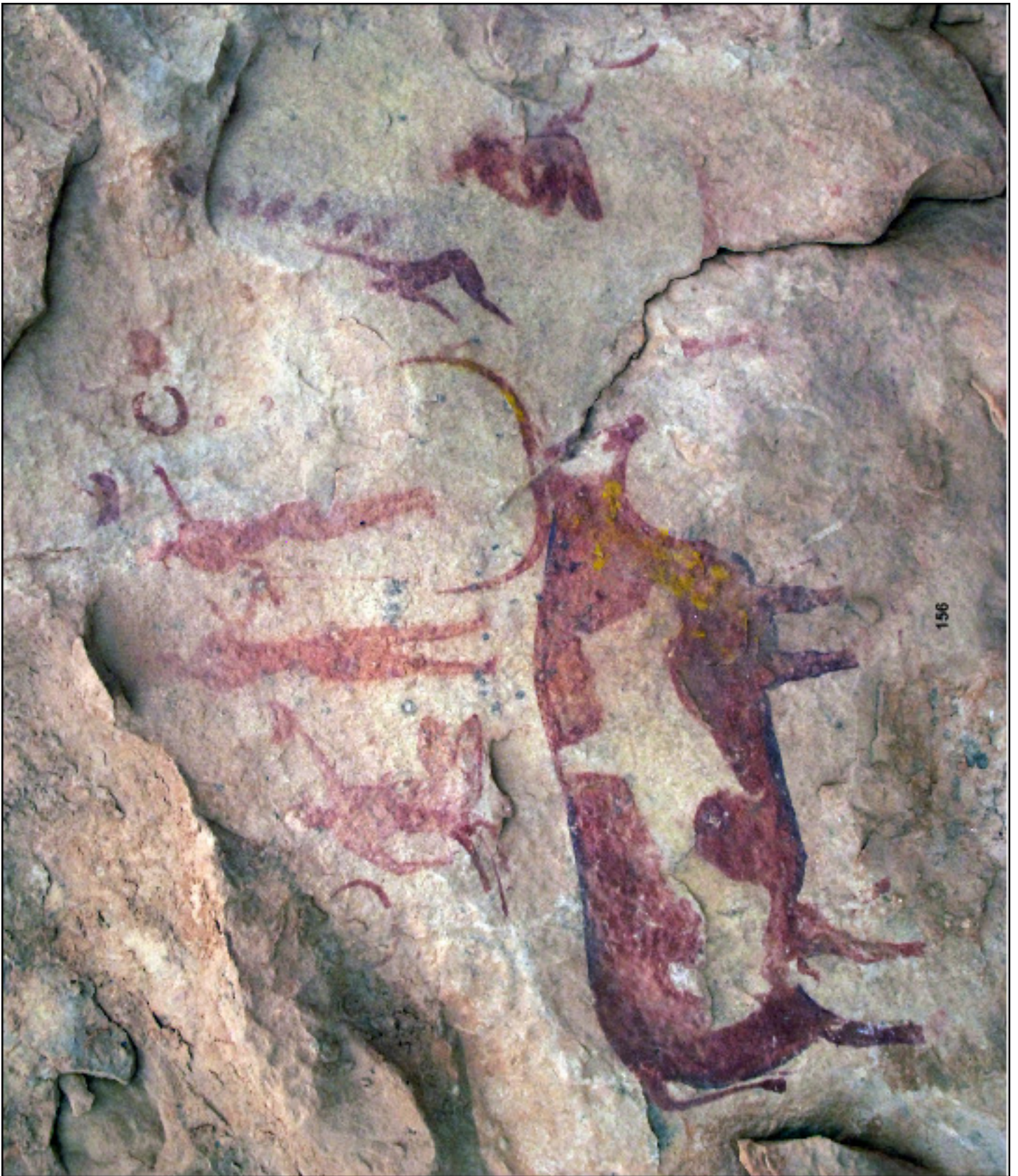


Titeras N'Elias.

Photo: Bokheni

Titeras N'Elias. Man driving a carriage drawn by two horses.
Horse period.

Photo: Bokheni





Titeras N'Elias. This picture from the Nomadic period contains many enigmas of interpretation.

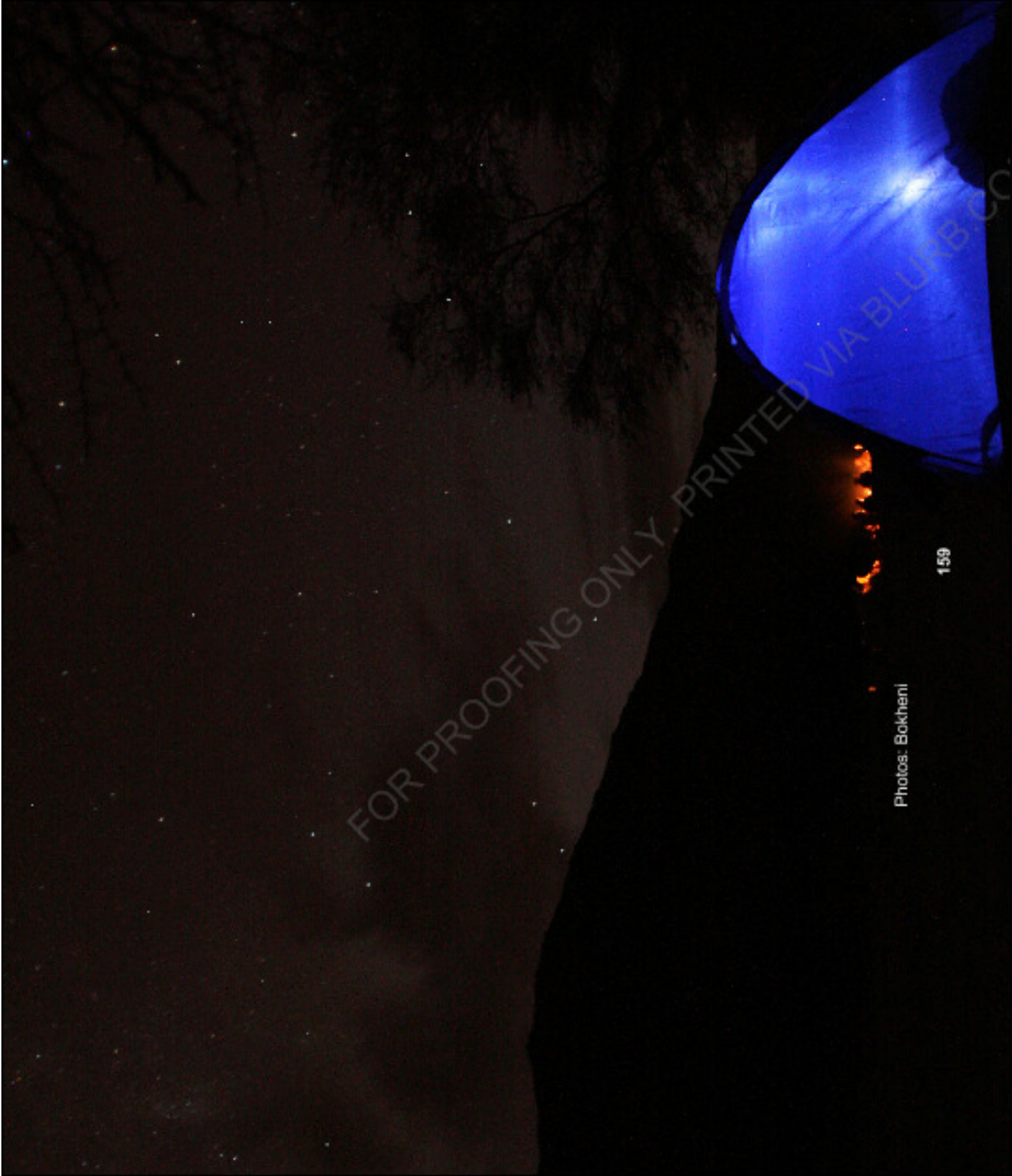
Photo: Agaouad

Titeras N'Elias. Above a Round Head period delty figures decorated with bodypaint.

Photo: Bokheni



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Photos: Bokheni



Timenzouzine. Round Head period people in enigmatic poses.

Photo: Aicha

Timenzouzine. A large elephant engraved into horizontal rock from the Bubalus period.

Photo: Bokheni





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Timenzouzine. Close-up of an elephant. Sun shining directly from above prevents shadows from being cast and makes it impossible to get a decent picture of the target!

Photo: Bokheni

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Timenzouzine. On the ceiling of the depression on the left is an impressive painting shown in the next page.

Photo: Bokheni







Timenzouzine. Host dressed in ceremonial garb raises a toast in honor of his cattle. Nomadic period.

Photo: Agaouad

Timenzouzine. A magnificent group of antelopes in a rock depression.

Photo: Bokheni



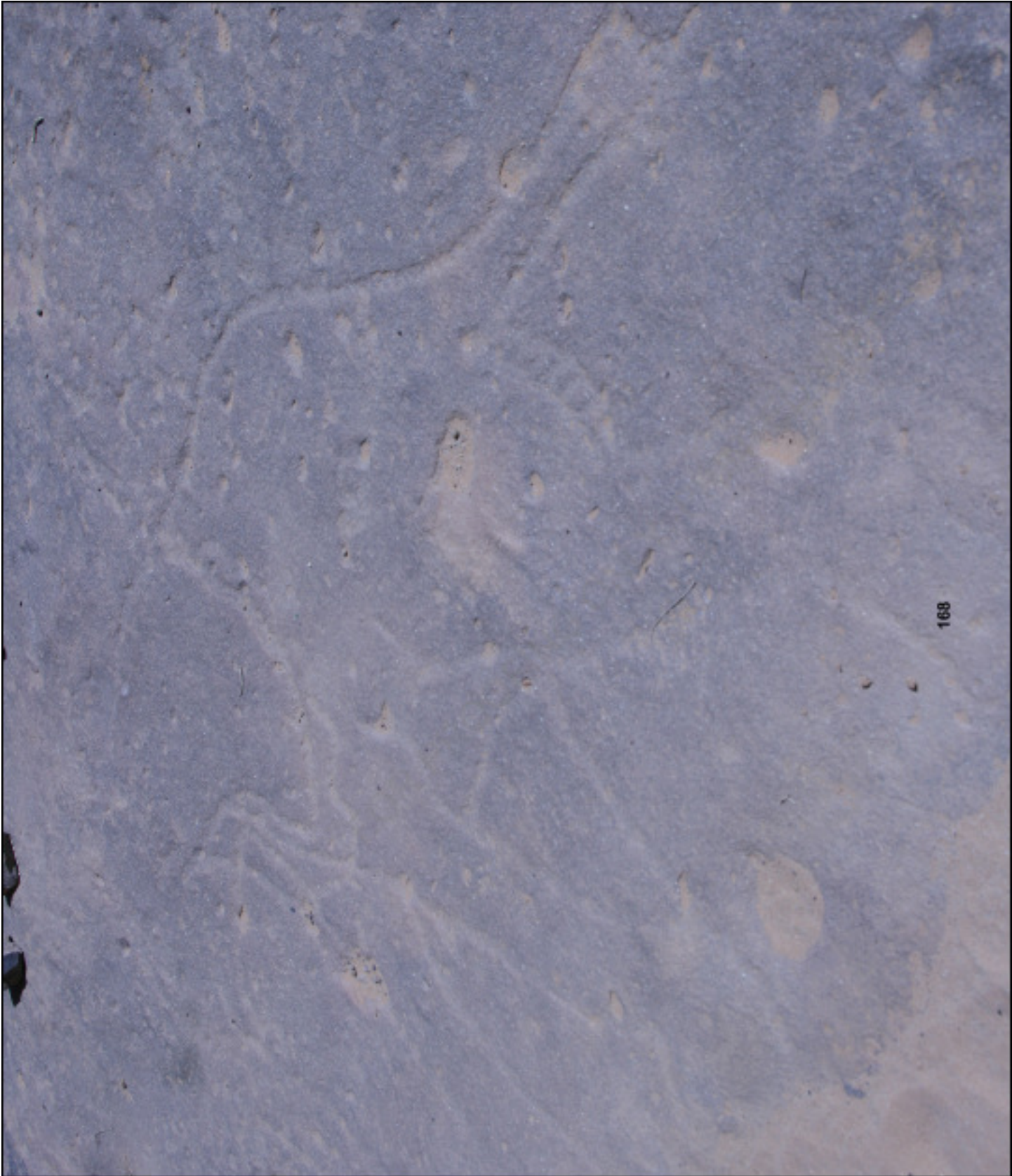


Timenzouzine. A bigger shot of the antelopes from the previous page.

Photo: Bokheni

Timenzouzine. A curious mula-mula (White-crowned Wheatear, *Oenanthe leucopyga*) has come to check, if the tourists will leave crumbs for lunch ...

Photo: Bokheni





Timenzouzine. The second elephant engraving seen by us from the Bubalus period.

Photo: Bokheri

Tan Zoumaltak. A maw shaped by nature.

Photo: Oucha



Photo: Agnouad



Tan Zoumaitak. Saharan myrtle (*Myrtus nivellei*), listed among the endangered plants in Tassili. In the Tassili region its leaves are used to improve the functioning of the liver. A handful of leaves are infused into goat's milk and consumed hot. (Source: A guide to Medicinal plants in North Africa). Photo: Agouad

Tan Zoumaitak. A grand fresco from the Round Head period. At the center a beautiful dancing couple.

Photo: Bokheni



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Tan Zoumaitak. A child riding a ram is visibly thrilled because of the light fluffballs!

Photo: Bokheni

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Tan Zoumaitak. Dancers surrounded by rams, the one with the finest horns in the foreground. Behind the ram is probably a drum with fringes.

Photo: Bokheni





Tan Zoumaitak. The dance continues.

Photo: Bokheni



Tan Zoumaitak. A girl and a scary animal figure with features of different animals. But is the ring with fringes a drum? Perhaps the dancing girl was painted on top of it later, but the color is partly worn away.

Photo: Agacouad

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Tan Zoumaltak. A detail of a decorated Round Head period dancer and an infant. Below an enigmatic animal figure, added later.

Photo: Agouad



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Tan Zoumaitak. On the right side of the previous picture a mother, who has on top of her a painting of a girl with a staff. There would have been room to paint the girl farther away, but the placement of the picture has been deliberately chosen.

Photo: Agaouad



Tan Zoumaitak. Close-up of a woman waving bags.

Photo: Agaouad



Photo: Bokhent



Photo: Bokhemi

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Tamrit. Hunting Scene from the Nomadic period. Red spots are part of the prey. (Lhotie)

Photo: Bokheni

Tamrit. A surprise picture found under a low protrusion. The entire underside of the protrusion is covered with red spots, which do not appear to form a clear pattern. They might represent movement. Our local guides were not familiar with the painting. Photo: Bokheni

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Sallhothen (Salyhowhen).

Our two week wandering is nearing its end. We still have to make it into a valley 600 meters below through a pass filled with rocks and boulders.

Photo: Bokheni



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Erg Admer.

Photo: Oucha



Photo: Fadimata



Tim Rass. Pictures from the Horse period. At the middle of the picture a hut, bottom left a carriage partly visible.

Photo: Agaouad

Tegahahart

Right next to Djanet, along the road leading to the airport, is one of Sahara's most famous and most beautiful petroglyphs, "The Crying cows".

Local guides like to tell the story of how the cow herd arrived at a familiar drinking spot they realized the pond had dried up ...

The story touches with its timelessness. The results of the ongoing rapid climate change are already commonplace here.

Photo: Bokheni

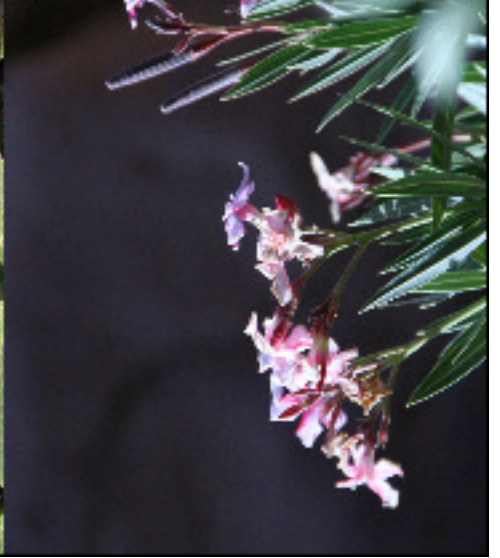
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Tin Amali. Pre-Islamic grave, d = 25 m.

Photo: Fadimata





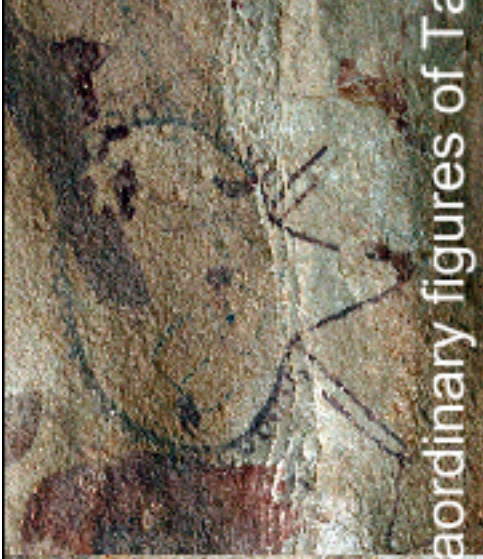


Flora and fauna of Tassili



Stone galleries of Tassili

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Extraordinary figures of Tassili



Extraordinary figures of Tassili

Nomads

Nomads are communities of people who do not settle down to a permanent place of residence, but travel with grazing animals, for example. Many cultures have traditionally been nomadic, but these days this way of life is getting more and more uncommon.

Nomads are generally divided into herders (pastoral nomads) and hunter-gatherers. The former herd livestock and move after it, when the previously grazed area does not provide food for it anymore. The latter move around looking for game, fish or edible plants.

The opposite of nomadism is sedentism, living in one location. These definitions are taken from Wikipedia.

A half-nomad or semi-nomad spends part of the year staying in place and the other part moving from place to place. The semi-nomad often favors small animals like sheep and goats as livestock. Special herdsmen in some communities take care of their stock quite far away from residential areas.

Nomads live all around the world all the way from the Laplanders of the Scandinavian shield to the Maasai of

East Africa and Himbos of Southwestern Africa. Because the nomads do not usually care about state borders and paying taxes, governments do not take kindly to them.

A problem of nomads has been having their lands invaded by ignorant and unwanted outsiders with their own agendas.

The nomads of Sahara - without a State

When a westerner thinks about the nomads of Sahara, images spring to mind of people moving among camels in the middle of dunes, wearing deep blue robes and turbans, the Tuareg.

The Tuareg are a nomadic people from Central Sahara belonging to the extended family of Berber. We have lived in North Africa from the beginning of time, the Berber culture and languages were known already in 2000 years BCE.

In the past, the Tuareg inhabited the whole of Sahara, but after the coming of the French their lives became a mess. The Tuareg waged a war



Photo: Fadimata

against the colonial power for fifty years. At the end of the colonial rule, independent states like Algeria and Mali were established in the area. The Tuareg did not get a country of their own. Their territory became splintered in several countries. The wanderers could not wander as they used to. "In the course of time, other nations have picked up the culture of the conquerors, the school system and the language, except the Tuareg."

This was the explanation of Issa Dicko of the band Terakaft at his visit in the Kaisaniemi field of Helsinki 2009

Desert Blues

Why the blues of refugees?

The first wave of Tuareg resistance started in 1963 in Mali. It led to an unfortunate outcome for the Tuareg: livestock and people were killed in states with Tuareg dwelling grounds. The Algerian government had to deliver large numbers of Tuareg people over to Mali to be executed. Then, in the 1960s, a refugee wave started moving.

"We are trying to get support from the ministry of foreign affairs to get a

mobile recording studio in Mali. A mobile studio would serve the whole Tuareg community, not only the ones living in Mali. In many neighboring countries Tuaregs are having a hard time. Mali is the only place, where a project like this can happen. We will take the studio to the border of the country and Tuaregs will cross the border to record their music", says Jaana-Maria Jukkara, director of the AfousAfous centre of Finland.

"Nowadays nomadic has become a buzzword of travel agencies, who are trying to attract backpackers getting off the rat race for a while.

There have always been those who long for the horizon. There are two schools of longing: those, who dream of getting to a certain place and those, seeing the movement itself as the goal. Glorification of leaving increases with the level of impossibility", says the anthropologist Tea Virtanen.



Photo: Agence



Photo: Bokheni

Sources:

- 1) Nomads (Wikipedia, Internet)
- 2) Jürgen F.Kunz: Verborgene Schätze der Sahara Druckhaus Kastner, Wolnzach v.2008
- 3) World Village Festival: Terakaft plays the desert blues (Internet, Finnish)

Agasmed

Tifinagh

Tuaregs still use in their written language the Tifinagh-script based on consonants. It comes from old Libyan writing style and the ancient Phoenician alphabet.

ⵍ	A, E, I	ⵎ	N
ⵏ	B	ⵑ	Q
ⵐ	D	ⵒ	R
ⵓ	F	ⵓ	S
ⵔ	G	ⵖ	SH
ⵕ	GH	ⵗ	T
ⵖ	H	ⵘ	T
ⵗ	J	ⵙ	W
ⵘ	K	ⵚ	KH
ⵙ	L	ⵛ	Y
ⵚ	M	ⵜ	Z
ⵛ	D, J	ⵝ	Z



12 000 years of climate history in Sahara

The climate history of Sahara has been gradually opened up.

By looking at sedimentation in the ocean floor, it was observed that the warm and cold periods of the Earth with their glaciations seem to come and go in a cyclical manner.

An explanation for this cyclic phenomenon is given by the so called Milankovitch Theory, which states that the amount of solar radiation hitting Earth is dependent on the orbit and position of our planet.

Sources:

- Juha-Pekka Lunkka: Maapallon ilmastohistoria (The climate history of Earth)
- Nasa, picture of Earth
- A diagram from the research by Perry & Hsu, modified by Bokkeni

1. The imagined axis of Earth has an angle of tilt to the orbital plane of Earth, which varies 22,2 – 24,5 degrees in a cycle of 41 000 years. At the moment it is 23,5 degrees.

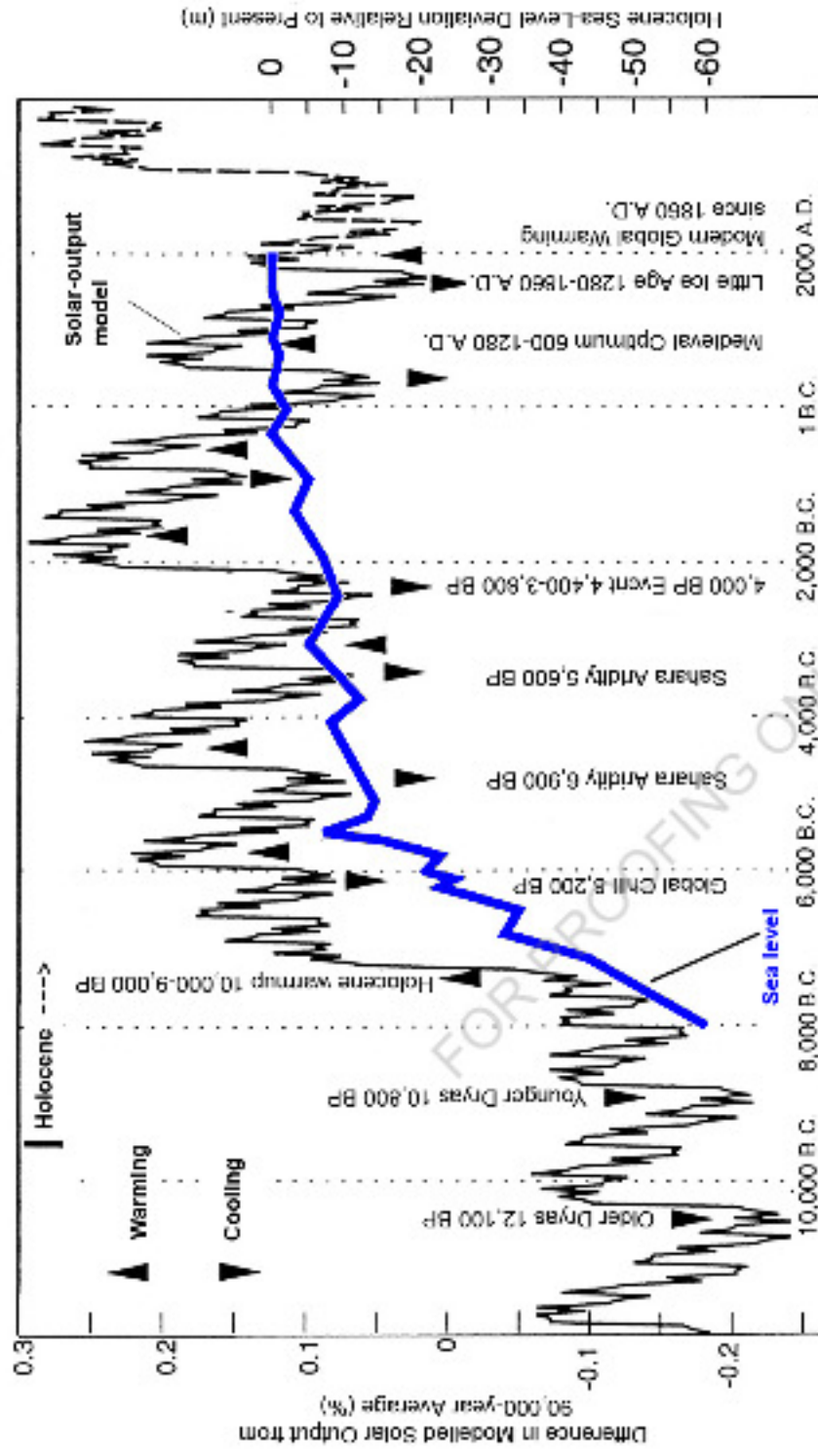
2. The Earth orbits the sun in an elliptical manner. The shape of the orbit varies in cycles of 100 000 and also 413 000 years, when the eccentricity describing the shape of the orbit varies between 0.0050 – 0.0607. At the moment it is 0.0167 and heading towards a more round shape.

3. In addition to the change in angle of tilt, the axis of Earth also has a rotational motion (precession) with 23 000 years being the time for a full rotation.

Taking into account among other things the changes in solar activity (in cycles of 11 and 90 000 years), it has been possible to create models, which seem to agree with the climate history of Earth. Work on models based on Milankovitch's theory has been made by such researchers as **Charles A. Perry** ja **Kenneth J Hsu** (Geophysical, archaeological, and historical evidence support a solar-output model for climate change).



Photo: Nasa



Around this time people start looking into inner dimensions and painting round headed deities to the rock face, outlining a view of the structure of reality.

Yields from hunting start to decline, when about 6900 years ago Sahara starts to get dry again.

The drying does not happen all at once, but inevitably in a wave-like motion the game starts to disappear.

Gradually an idea starts to form in the minds of the hunter-gatherers on how to survive with the dwindling amount of catches.

The capturing of animals is invented – here is a way to save food for harder days ahead. It makes sense to move south if needed and come back to the savannah when the rain returns.

The population has increased. Even though there are more animals to hunt, the ranching of them must continue. Bit by bit a new way of life is formed, resulting in settlements. Agriculture takes its first steps.

Thus begins the Neolithic revolution...

Belkacem

Expedition to Tassili n'Ajjer



Erkki Luoma-aho
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Fadimata



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Oucha



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Photo: Bokheni

Our group is connected by an interest in rock art, documenting it and spreading information about it.

Already at the Tassili rock art sites we made the decision to publish a book about the things we saw and experienced.

The geographer

"What is that big book?" said the little prince. "What are you doing?"

"I am a geographer," said the old gentleman.

"What is a geographer?" asked the little prince.

"A geographer is a scholar who knows the location of all the seas, rivers, towns, mountains, and deserts."

"That is very interesting," said the little prince. "Here at last is a man who has a real profession!" And he cast a look around him at the planet of the geographer. It was the most magnificent and stately planet that he had ever seen. "Your planet is very beautiful," he said. "Has it any oceans?"

"I couldn't tell you," said the geographer.

"Ah!" The little prince was disappointed. "Has it any mountains?"

"I couldn't tell you," said the geographer.

"And towns, and rivers, and deserts?"

"I couldn't tell you that, either."

"But you are a geographer!"

"Exactly," the geographer said. "But I am not an explorer. I haven't a single explorer on my planet. It is not the geographer who goes out to count the towns, the rivers, the mountains, the seas, the oceans, and the deserts. The geographer is much too important to go loafing about. He does not leave his desk. But he receives the explorers in his study. He asks them questions, and he notes down what they recall of their travels. And if the recollections of any one among them seem interesting to him, the geographer orders an inquiry into that explorer's moral character."

Antoine de Saint-Exupéry:
The little prince



Photo: Fadimata

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