Humboldt-Universität zu Berlin, Seminar für Afrikawissenschaften Linguistisches Kolloquium October 26th, 2010

# Two language documentation tools in Khoisan research:

1) 'Tsammalex' - A repository for lexical information and pictures of flora and fauna

(http://lingweb.eva.mpg.de/tsammalex/index.php/Main\_Page)

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### Structure

- 1. Background The documentation of Taa
- 2. 'Tsammalex' A 'wikibase' of flora and fauna
  - 1. Problem: Lexical documentation needs non-ling. resources
  - 2. Idea: Sharing basic knowledge, images and lexicon
  - 3. Existing alternatives? (Wikipedia etc.)
  - 4. Structure: Search by biological and geographical categories
- 3. A multi-dialectal Toolbox project
  - 1. Problem: How to combine dialect-specific analysis with a multi-dialectal lexicon?
  - 2. Suggestion: Create dialect filters and export dialect-specific dictionaries for interlinearisation



### 1. Background – The documentation of Taa

- Dorothea F. Bleek, 1927, 1929: linguistic surveys
- Hans-Joachim Heinz, 1960-1990: anthropological studies (East !Xoon)
- Anthony Traill, 1970-2000: phonology + lexicon of East !Xoon
- DoBeS projects "Documentation of Western !Xoon of Namibia" (2004-2007) and "A Pan-dialectal Documentation of Taa" (2007-2009) (MPI-EVA/Leipzig: Güldemann, Kießling, Boden, Naumann)
  - audio and video recordings + annotation (in progress)
  - phonological analysis, morpho-syntactic analysis (in progress)
  - focus: 2 Namibian varieties; survey of varieties in Botswana
- 2010-2012 EuroBABEL: Collaborative Research Project "The Kalahari Basin area: a 'Sprachbund' on the verge of extinction"
   > individual project "Inheritance and contact in a language complex: the case of Taa varieties (Tuu family)" (HU Berlin: Güldemann, Naumann)

### 1. Background – The documentation of Taa

### DoBeS: http://www.mpi.nl/DOBES/ •





Home

Structure

# 2. Tsammalex - A repository for lexical information and pictures of flora and fauna





- A full linguistic documentation implies encyclopedic (non-linguistic) information
- The specialised traditional knowledge (incl. lexicon) of Taa refers to large parts to the natural environment:
  - geography(land use, water)





- flora (eatable plants, medicine)









 In the past 100 years, conditions of space and environment have drastically changed (water boreholes ⇒ immigration + cattle, farms, fences, game kill, overexploitation).



Maps from Boden (2007), based on Mendelsohn et al. (2002)

- As a consequence, the traditional economy (hunting and gathering) has broken down. Traditionally prominent animals such as lions, hyenas or elephants are practically unknown to young speakers. Special encyclopedic and lexical knowledge is lost.
- ⇒ Basic encyclopedic knowledge and images must be accessed or included for
  - the documentation process itself (questionnaires),
  - the documentation of language, lexicon and culture,
  - the presentation of the material in a way useful for future generations of speakers.

 The lexicographic practice of lists [vernacular term] – [scientific name] is not user-friendly for both 1) comparative linguists and 2) native speakers.

border	Inūle  à lqhúm-kâ-sà (- of a territory)
bore	<b>  k×'ûm</b> (a hole); gl×ú'ni (out)
born	'Inài; g  kx'óu; ‡ám sîi (id.);  nāe Inúle (id.);
t	+hàã, kx'âm-tê  ē ⊙qậa (first-)
	lgōa
botanical species	jàã (plants with corms, bulbs and tubers); dàna (trees, shrubs
	and bushes);  nùja (sp. of); +ābe   nàm (sp. of.); câhe (sp.
	of); lgú'ũ (sp. of);   qàhni (Acacia ataxacantha D.C.); +gàhli
	(Acacia Fleckii Schinz );   áa, tàla ūhu (Acacia erioloba E. Mey.
	X Haematoxylon willd);   nàhã (Acacia hebeclada D.C. sp.
	hebeclada ); lúla (Acacia luederitzii Engl. var. luederitzii );   qháa
	(Acacia mellifera (Vahl.) Benth. ssp. detinens (Burch) Brenan);  Gá'li (Acacia nebrownii Burtt. Davy)  Gàli–Sè (Albuca
	amboense); Onāha (Alectra orobanchoides Benth);   Gólu (Aloe
:	zebrina Bak.);  gòho (Anthephora pubescens Nees-form ); !×óli
	(Antizoma angustifolia (Burch.) Miers. ex. Harv.); glk×'à na
	(Asclepiadaceae Duvalia polita N.E. Br. var. Polita); ‡qhába
	(Asclepiadaceae Fockea sp.); <b>‡gú'a</b> (Asclepiadaceae Pentarrhinum
i	insipidum E. Mey.); kà lgúu-bè (Asclepidaceae Pergularia

Source: Traill (1994:208)

### • DoBeS archive: Search through metadata – less suited

Session         Name TNd040427-01 Title Coccinia rehmannii (wild cucumber) Date 2004-04-27         Description         www_mpi_n1         Description         Photo shows woman presenting a root of Coccinia rehmannii.         • Location         • Project Taa         Keys         Location Corridor 18 Land status Communal land Portal Fauna and Flora         • Content         Actors         • Actor O1 5-KT         • MediaFile         • Source         • Anonyms         References

# 2.2. Idea: Sharing basic knowledge, images and lexicon

- How about a ethnobiological 'wikibase' including... •
  - free images of species for documentation, dictionaries, education (shared between biologists, anthropologists, lexicographers, language developers, NGOs, other enthusiasts)
  - lexicon (and culture-specific knowledge beyond) in vehicular and vernacular languages, lexical comparison
  - search facilities for specific regions (identification tool)

3 192.168.4.7 talk for this ip address log in / create account



### navigation

- Main page Community portal
- Current events.
- Recent changes
- Random page
- Help

12



How to contribute (or short: Templates)

view source

discussion

history

There are three different kinds of entries: (1) Categories of animals and plants such as 'mammals' or 'trees', (2) pages of species listed under these categories with illustrative photos as thumbnails, and (3) individual images. You can search for images top-down (Taxa) or directly through the List of Images 🗗

Please contribute! If you have taken a useful photo of a relevant species, and if you are ready to share it for the mentioned purposes, please create first an account and send a message to Peter Fröhlich & so that he can give you the status of a contributor. You can then follow the instructions under How to contribute. You are also invited to add information to existing entries, to determine a previously unidentified species, or to download images.

About Tsammalex

page

## • Wikipedia: Much more comprehensive, detailed

### http://en.wikipedia.org/wiki/Main\_Page



13

# • Wikispecies: Multilingual information, scientific classification

http://species.wikimedia.org/wiki/Main\_Page



# • Wikimedia Commons: Images, multilingual information

http://commons.wikimedia.org/wiki/Main\_Page

									new features  & log	in / create account
	6.2	Gallery Discussion				View	Edit	√iew history	Search	Q
	WIKIMEDIA	Acacia erioloba								
	COMMONS	Deutsch: Kameldorn · Engli	sh: Camel Thorn •							
N	Main Page	Divisio: Magnoliophyta • Cla	ssis <b>: Rosopsida •</b> Subclassis <b>: R</b> o	osidae • Ordo: Fabales • Fam	ilia <b>: Fabaceae •</b> Subfamilia: Mi	mosoideae • Genus: Aca	cia			
C	Welcome Community portal /illage pump	Species: Acacia erioloba	E. Meyer (1847), Edgew. (1847	7) ??						
-	Participate Upload file Recent changes Latest files Random file Help Contact us Donate				Blüte Sossusvlei, Namibia	Frucht Sossusvlei, Namibia		eeds at Sossu	svlei,	
In Wikipedia     Deutsch     English     Categories: Acacia erioloba   Flora of Namibia										
15	English Essti Français Italiano Svenska	This page was last modified on 1 Text is available under the Creativ Privacy policy About Wikimedia	ve Commons Attribution/Share-Alike L	License; additional terms may app	lly. See Terms of Use for details.				I Powered By MediaWik	

# • Encyclopedia of Life: Detailed information, alternative classfications

http://www.eol.org/index



16

### • Universal Biological Indexer and Organizer

http://www.ubio.org/

uBio		Universal Biological Indexer and Organizer	
	Find name		
<ul> <li>uBio Project Introduction News</li> <li>Servers</li> <li>NameBank <ul> <li>ClassificationBank</li> <li>Statistics</li> <li>Name sources</li> <li>Attribution Reports</li> </ul> </li> <li>Web Services <ul> <li>Methods</li> <li>Using ubio SOAP</li> </ul> </li> <li>Sample Applications <ul> <li>References</li> <li>Nomenclator Zoologicus</li> <li>uBioPortal</li> <li>Demo Applications</li> </ul> </li> <li>Tools/Algorithms <ul> <li>LinkIT</li> <li>FindIT</li> <li>ParseIT</li> <li>MapIT</li> <li>CrawLIT</li> <li>X:ID</li> </ul> </li> <li>Editors: Sign in</li> </ul>	Classification: cellular organ Eukaryota Viridiplant Streptop Strepto Embry Traci Eup Sg I Alternate Class Species2 UBiota 20 Species2 Synonyms: Acacia en Acacia en Acacia en Common Name	2844954 umilsidiubio.org:namebank:2844954 (view metadata)         (According to: MCBI Texonomy)         hisms         ae         hyta         phyta         oophyta         beophyta         boophyta         boophyta	COMMENT ON THIS PECCIPIC         External Resources:         Species:         Species: </td

# Biological Library BioLib: Search by biological and geographical categories

http://www.biolib.cz/en/main/



### • PlantzAfrica.com: Regional information

http://www.plantzafrica.com/

### Acacia erioloba E.Mey.

Family : Fabaceae Common names : camel thorn, kameeldoring (Afr.) South African Tree No .: 168



The beautiful, slow-growing camel thorn grows well in poor soils and in harsh environmental conditions. It

### Description

The camel thorn ranges from a 2 m spiny shrub to a 16 m robust tree. The stem is shiny reddish brown who pairs of almost straight, whitish or brown spines. Spines often have swollen bases and appear at the bases divided. There are normally 2 to 5 pairs of pinnae per leaf and 8 to 18 pairs of leaflets (pinnules) per pinna.



The tree bears bright yellow ball-like flowers that are sweetly scented. They are borne in late winter and la



### Plants of SA

tes transfer transfer

Vegetation of SA

Using SA Plants

From the Archives

Miscellaneous Info

Site Search

Welcome to PlantZAfrica.com The site for information about plants native to southern Africa and related topics.

This site is brought to you by the



ite is brought to you

¥.



South African National Biodiversity Institute

Copyright

Contact us webmaster@sanbi.org.za Plants of the



### • The Animal Files

http://www.theanimalfiles.com/

### **The Animal Files.com** Google" Custom Search Search Home > Mammals > Hoofed Mammals Springbok Seductive Germany Females Similar Animals: Meet Super Sexy Ladies Tonight! Exclusive Steenbok Elite German Personals. Impala EliteMeeting.com Gerenuk **Endangered Animals Work** Thomson's Gazelle Volunteer with Endangered Species at Wildlife Sanctuaries in Africa! www.enkosini.com Wildlife Tours Ads by Google Animals in their natural habitat. Once in a Animal lifetime experience! www.BaobabExpeditions.com/ Animal Anatomy Bones Cowhide Rugs Males Females Shop world's best Cowhide Rugs - Modern, African Antelope Natural & Sustainable.

Ads by Google

Latin Name	Antidorcas marsupialis		
Conservation Status	Conservation Dependent		
Location	Southern Africa		
Colour	Reddish/Brown		
Length	1.2 - 1.4 m (4 - 4.5 ft)		
Tail	15 - 30 cm (6 - 12 inches)		
Weight	30 - 48 Kg (66 - 105 lbs)		
Life Expectancy	7 - 9 Yrs		

### Main Characteristics

www.purerugs.com

Springbok are a small antelope that have a body length between 1.2 and 1.4 m (4 - 4.5 ft), a



### • Picsearch: Image search

http://www.picsearch.com/index.cgi



## • Comparison:

	editable by	includes free	search by bio-	includes	multilingual	includes
	users	images:	logical taxa AND	overview	lexical infor-	language-/
		small (+),	geographical	pages (browse	mation (+),	culture-specific
		large (+)	region	or table views)	sortable (+)	information
Wikipedia	+	(Wiki			(1)	
	+	Commons)	-	-	(+)	(+)
Wikispecies	/ikispecies + (Wiki - Commons)					
					+	-
Wikimedia			+			
Commons	+	++	(not systematic)	+	+	-
Encyclopedia						
of Life	+	+	-	-	+	-
Biological		? (mostly				
Library	+	copyrighted)	+	+	+	-
Tsammalex	+	++	+	+	++	+

# 2.4. Structure of 'Tsammalex'



navigation

Help

search

toolbox

Go

& Log in / create account page discussion view source history Main Page Tsammalex is a free-content repository for photos of plants and animals of the Afrotropic realm de (currently still focussed on Southern Africa) including multilingual lexical information. It has been set up for linguists, anthropologists, developers of educational material, non-profit organizations, and other interested people willing to share their images intendedly for scientific or non-commercial publication or community-oriented purposes. Find more information in 'About Tsammalex'. There are three different kinds of entries: (1) Categories of animals and plants such as 'mammals' or 'trees', (2) pages of species listed under these categories with illustrative photos as thumbnails, and (3) individual images. You can search for images top-down (Taxa) or directly through the List of Images 🖉. Main page Community portal Please contribute If you have taken a useful photo of a relevant species, and if you are ready to share it for the mentioned purposes, please create first an account and send a message to Peter Current events Fröhlich @ so that he can give you the status of a contributor. You can then follow the instructions under How to contribute. You are also invited to add information to existing entries, to determine a Recent changes previously unidentified species, or to download images. Random page About Tsammalex How to contribute (or short: Templates) Search SEARCH BY CATEGORY AND GEOGRAPHICAL REGION Animals (old list) What links here Plants (old list) Related changes Special pages Printable version Contributors Permanent link Ecoregions - Maps Languages References All Images 🗗 All pages (species and categories) Categories [e] Powered By MediaWiki This page was last modified on 10 June 2010, at 15:21. This page has been accessed 1,273 times. Disclaimers Privacy policy About Tsammalex

# 2.4. 'Tsammalex' – Search by biological categories (taxa)

Select the category of animals or plants you are interested in (click on one of the links below). A list with geographical specifications follows on the next page.

### navigation

- Main page
- Community portal
- Current events
   Recent changes
- Random page
- Help

search

### Go Search

### toolbox

- What links here
- Related changes
- Special pages
- Printable version
- Permanent link

1.1 ANIMALS 1.2 PLANTS & FUNGI 2 Scientific classification 2.1 ANIMALS 2.2 PLANTS 3 Folk categorisation

Contents [hide]

1 Simple classification

This page in other languages: Deutsch

### Simple classification

ANIMALS

Taxa

- Mammals
- Birds
- Reptiles
- Amphibians
- Fishes
- Insects
- Spiders & other arachnids
- Other invertebrates

### PLANTS & FUNGI

- Trees
- Shrubs
- Dwarf shrubs
- Creepers & climbers
- Bulbs & herbs
- Grasses & sedges
- Succulents
- Ferns
- = Fungi

Plants are categorized here according to the growth forms as stated in Van Rooyen et al. (2001:21):

# 2.4. 'Tsammalex' – Search by biological categories (taxa)

### Scientific classification

### ANIMALS

(Eukarya/Opisthokonta/Holozoa/Filozoa/Animalia; selected clades; following Wikipedia 🗗 and Wikispecies 🚱

- (Lower phyla)
- Phylum Annelida (ringed worms)
- Phylum Mollusca (molluscs)
- Phylum Nematomorpha (horsehair worms)
- Phylum Onychophora (velvet worms)
- Phylum Arthropoda (arthropods)
  - Subphylum Chelicerata
    - Class Arachnida (spiders, scorpions, harvestmen, ticks, mites and solifugaes) Spiders & other arachnids
      - Order Acarina (ticks and mites)
      - Order Amblypygi (whipscorpions)
      - Order Araneae (spiders)
      - Order Opiliones (harvestmen)
      - Order Palpigradi (microwhip scorpion)
      - Order Pseudoscorpionida (book scorpions)
      - Order Ricinulei (hooded tickspiders)
      - Order Schizomida (shorttailed whipscorpions)
      - Order Scorpiones (scorpions) Scorpiones
      - Order Solifugae or Solpugida (sunspiders)
      - Order Thelyphonida (vinegarroons)
  - Subphylum Myriapoda
    - Class Chilopoda (centipedes)
      - Order Scutigeromorpha
      - Order Lithobiomorpha
      - Order Craterostigmomorpha
      - Order Scolopendromorpha
      - Order Geophilomorpha
    - Class Diplopoda (millipedes)
      - Order Polyxenida
      - Order Glomeridesmida
      - Order Glomerida
      - Order Sphaerotheriida
    - Order Polyzoniida
    - Order Platydesmida
    - Order Siphonophorida
    - Order Polydesmida

# 2.4. 'Tsammalex' – Search by biological categories (taxa)

a com	page discussion view source history
62 3333	Taxa/Deutsch
<b>UB</b>	Diese Seite in anderen Sprachen: English
	Einfache Klassifikation
navigation	
Main page	TIERE
Community portal	<ul> <li>Säugetiere - Mammals</li> </ul>
Current events	Vögel - Birds
Recent changes	Reptilien - Reptiles
<ul> <li>Random page</li> <li>Hole</li> </ul>	Amphibien - Amphibians
Help	Fische - Fishes
search	Insekten - Insects
	Spinnentiere - Spiders & other arachnids
Go Search	Andere Wirbellose - Other invertebrates
toolbox	
What links here	PFLANZEN UND PILZE
<ul> <li>Related changes</li> </ul>	Bäume - Trees
<ul> <li>Special pages</li> <li>Printable version</li> </ul>	<ul> <li>Baume - Trees</li> <li>Sträucher - Shrubs</li> </ul>
Printable Version     Permanent link	
	Zwergsträucher - Dwarf shrubs
	<ul> <li>Kriech- und Kletterpflanzen - Creepers &amp; climbers</li> </ul>
	<ul> <li>Knollenpflanzen und Kräuter - Bulbs &amp; herbs</li> </ul>
	<ul> <li>Gräser und Sauergrasgewächse - Grasses &amp; sedges</li> </ul>
	<ul> <li>Sukkulenten - Succulents</li> </ul>
	Farne - Ferns
	Pilze - Fungi

the a	page discussion view source history	
	Taxa/Mammals/Regions	
navigation Main page Community portal Current events Recent changes Random page Help	Mozambique Namibia South Africa Zimbabwe All EcoRegions AT0709 Kalahari Acacia-Baikiaea woodlands AT1309 Kalahari xeric savanna AT1316 Namibian savanna woodlands	
search		
Go Search		
toolbox		
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Special pages		
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Permanent link		
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 WWF: 8 biogeographical realms (macroregions) and 14 biomes (major ecological types)

http://www.worldwildlife.org/wildworld/profiles/terrestrial\_at.html



Figure 1. The ecoregions are categorized within 14 biomes and eight biogeographic realms to facilitate representation analyses.



rotropics > Deserts and Xeric Shrublands > Kalahari xeric savanna (AT1309) Peer review in process - unreviewed document presented



+ SIZE

square

227,100 square

miles (588,100

about twice the

size of Arizona

kilometers) --

Relatively

Stable/Intact

National Park, Namibia Photograph by © WWF-Canon/Rick

WEYERHAEUSER

+WHERE Afrotropics

Deserts and

Xeric Shrublands

+ BIOME

Location and General Description Biodiversity Features Threats Ecoregion Justification References More Photos

The Kalahari Xeric Savanna is characterized by a harsh climate, where temperatures may increase by 45°C from night to day, and rainfall is infrequent. Rain only falls on the reddish-brown Kalahari sands during the summer, pelting the savanna with violent, localized storms. Although this area is semi-arid, there is an impressive diversity of migratory birds and large mammals, both herbivorous and carnivorous. A considerable amount (approximately 18 percent) of this ecoregion is protected. Where it is not protected, heavy grazing has degraded the habitat. Fences are a serious problem because they obstruct the migratory routes of ungulates, and they pose significant threats to biodiversity in unprotected areas.

### Location and General Description

The Kalahari Xeric Savanna ecoregion stretches across + CONSERVATION STATUS northwestern South Africa, southern Botswana and

southeastern Namibia. Most of it lies on the level plains of the Kalahari



- Tsammalex restricted to the Afrotropic realm
- current focus: Central southern Africa







# 2.4. > Table view: Taxa x Region



### Taxa/Mammals/Namibia

show additional language: Afrikaans, Deutsch, Jul'hoansi, Khoekhoegowab, Khwedam, Naro, Setswana, Taa or: show greater overview and download complete tab file

navigation	Latin name 🗵	English name 📧	Figure 1 🖂	Figure 2 м
Main page     Community portal     Current events     Recent changes     Random page     Help  search  Go Search	Alcelaphus buselaphus	Hartebeest: Red hartebeest	Jan Start St	L.
toolbox = What links here = Related changes = Special pages = Printable version = Permanent link	Antidorcas marsupialis	Springbok		G
	Atelerix frontalis	Hedgehog: Southern African hedgehog	Jan Barris and State Sta	J.

# 2.4. > Table view: Taxa x Region



### Taxa/Mammals/Namibia/Afrikaans

show additional language: Deutsch, Jul'hoansi, Khoekhoegowab, Khwedam, Naro, Setswana, Taa remove additional language or: show greater overview and download complete tab file

navigation	Latin name 📕	English name 🔺	Afrikaans м	Figure 1 м	Figure 2 📧
<ul> <li>Main page</li> <li>Community portal</li> <li>Current events</li> <li>Recent changes</li> <li>Random page</li> <li>Help</li> </ul> search   Go	Orycteropus afer	Aardvark	aardvark, erdvark		Proved
toolbox = What links here = Related changes = Special pages = Printable version = Permanent link	Felis lybica	Cat: African wild cat	wildekat	5	-
	Taurotragus oryx	Eland: Common eland	eland	<b>■</b>	
	Oryx gazella	Gemsbok, Oryx	gemsbok		

# 2.4. > Table view: Taxa x Region



### page discussion view source history

### Taxa/Shrubs/Namibia/Taa

show additional language: Afrikaans, Ju|'hoansi remove additional language

or: show greater overview and download complete tab file

navigation		😄			<b>FI A D</b>
Main page	Latin name 🖂	English name 🔺	Taa 🖂	Figure 1 🖂	Figure 2 📧
<ul> <li>Community portal</li> <li>Current events</li> <li>Recent changes</li> <li>Random page</li> <li>Help</li> <li>search</li> <li>Go Search</li> </ul>	Acacia mellifera	Black thom	∥qháa (3ii/3ii) (E)	<b>₽</b>	<b>₽</b>
toolbox What links here Related changes Special pages Printable version Permanent link	Acacia hebeclada hebeclada	Candle thorn	∥nàhã (2ii)(E)	G	F
	Grewia retinervis	Kalahari sand raisin	gOqhùű (1ii/4ii)(E)		

# 2.4. Basic entries: One page per species (category)



### Acacia erioloba

### Camel thorn

Names

page discussion

Fabaceae (Pod-bearing family, Pea family)

view source history

### navigation

- Main page
- Community portal
   Current events
- Recent changes
- Random page

### Help

search

### arch

Go	Search

### toolbox

- What links here
- Related changes
   Special pages
- Printable version
- Permanent link

Afrikaans	kameeldoring <sup>[1]</sup>
Deutsch	Kameldorn <sup>[2]</sup>
Ju/'hoansi	l'ànà <sup>[3]</sup>
Khoekhoegowab	∥gánàb, ∥gánàs <sup>[4]</sup>
Khwedam	gyéú-m-∥qàrà, ∥qárà, ∥'aáná <sup>[5]</sup>
Naro	xánà [ ánà] <sup>[6]</sup>
Setswana	mokala (me-) <sup>[7]</sup>
Taa	∥áa (3i/2i) (E) <sup>[8]</sup>

### Distribution

Countries Botswana, Namibia, South Africa Ecoregions AT1309 Kalahari xeric savanna

### Description

Uses

Comments





# 2.4. Basic entries: One page per species (category)

Description			Large
Jses			
Comments			
S <b>hort references</b> /an Rooyen et al. (200	(Cf. References) 1:26)		
1. ↑ Van Rooyen e     2. ↑ http://de.wikip     3. ↑ Leffers (2003:1     4. ↑ Haacke&Eiset     5. ↑ Kilian-Hatz (20     6. ↑ Visser (2001:2     7. ↑ Snyman (1990     8. ↑ DoBeS	edia.org/wiki/Kameldom 🗗 17) o (2002:426) 103:228) 137)		
Gallery		7	
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# 2.4. Images and metadata

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	File File history File links Metadata					
navigation Main page						
<ul> <li>Main page</li> <li>Community portal</li> </ul>						
Current events						
<ul> <li>Recent changes</li> <li>Random page</li> </ul>						
<ul> <li>Help</li> </ul>						
search						
Go Search						
toolbox	No higher resolution available. AlcelaphusBuselaphus02T.JPG (299 × 224 pixels, file size: 41 KB, MIME type: image/jpeg)					
What links here						
Related changes	Name Alcelaphus buselaphus					
<ul> <li>Special pages</li> <li>Printable version</li> </ul>	Source own work					
Permanent link	Date 2009-03-28					
	Place near Auob river, Kgalagadi Transfrontier Park, South Africa					
	Author Taa DoBeS team (Boden/Güldemann/Naumann)					
	Permission Public domain &, please cite the author					
	Comments					
	Keywords					
	File history					
	Click on a date/time to view the file as it appeared at that time.					
	Date/Time Thumbnail Dimensions User Comment					
	current 17:35, 21 April 2009 299×224 (41 KB) Christfried Naumann (Talk   contribs)					

# 2. 'Tsammalex' – A 'wikibase' of flora and fauna Questions

- one page (with multilingual lexical entries) for each biological category (including genera, families, orders)?
- more categories (e.g. family, flowering colour)?
- inclusion of multimedia (audio files)?
- more language-specific facilities?
- integration of a database?
- worth further elaboration/expansion?
- any interest in cooperation (also outside 'Afrotropic')?