Homopus Research Foundation



Annual Report 2002

Victor Loehr January 2003

CONTENTS

1.	INTRODUCTION AND ACTIVITIES IN 2002	4
1.1.	PUBLICATIONS AND PRESENTATIONS HOMOPUS RESEARCH FOUNDATION (SEE ALSO CHAPTER 12)	4
1.2.	INTERNET SITE	4
1.3.	JOURNEYS	5
1.4.	KESEARCH	5
1.J. 1.6	Einances	6
2.	PLANS FOR ACTIVITIES IN 2003	7
2.1.	Publications and presentations Homopus Research Foundation	7
2.2.	INTERNET SITE	7
2.3.	JOURNEYS	7
2.4.	Research	7
	Homopus s. signatus	
3.	CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS	9
4.	IMPORTS, BIRTHS AND DEATHS	13
4. 5.	IMPORTS, BIRTHS AND DEATHS	13 16
4. 5.	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS AREOLATUS	13 16
4. 5. 6.	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES Homopus areolatus Current living studbook population and transfers	13 16 20
4. 5. 6. 7.	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES Homopus areolatus Current living studbook population and transfers Imports, births and deaths	13 16 20 22
4. 5. 6. 7. 8.	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS AREOLATUS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS IMPORTS, BIRTHS AND DEATHS	13 16 20 22 23
4. 5. 6. 7. 8.	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS AREOLATUS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS FEMORALIS	13 16 20 22 23
 4. 5. 6. 7. 8. 9. 	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS AREOLATUS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS IMPORTS, BIRTHS AND DEATHS	13 16 20 22 23 27
 4. 5. 6. 7. 8. 9. 10. 	IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS AREOLATUS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS IMPORTS, BIRTHS AND DEATHS TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES HOMOPUS FEMORALIS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS IMPORTS, BIRTHS AND DEATHS HOMOPUS FEMORALIS CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS	13 16 20 22 23 27 27
 4. 5. 6. 7. 8. 9. 10. 11. 	IMPORTS, BIRTHS AND DEATHS	13 16 20 22 23 27 27 27 27

APPENDIX 1 HUSBANDRY CONDITIONS AND ADDITIONAL INFORMATION PER LOCATION HOMOPUS S. SIGNATUS APPENDIX 2 HUSBANDRY CONDITIONS AND ADDITIONAL INFORMATION PER LOCATION HOMOPUS AREOLATUS APPENDIX 3 HUSBANDRY CONDITIONS AND ADDITIONAL INFORMATION PER LOCATION HOMOPUS FEMORALIS APPENDIX 4 FINANCIAL REPORT HOMOPUS RESEARCH FOUNDATION APPENDIX 5 EXAMPLE AGREEMENT HOMOPUS RESEARCH FOUNDATION AND STUDBOOK PARTICIPANTS

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The Homopus Research Foundation was founded in January 2001, aiming to gather and distribute information on *Homopus* in the benefit (directly or indirectly) of the species in the wild. This aim is realized by carrying out activities such as setting up captive studbook populations, studying captive populations and conducting research in the field. Unofficially, these efforts started as early as 1995 when the foundation's precursor, the Studbook Breeding Programme *Homopus* started.

The current report will focus in detail on the studbooks coordinated within the foundation. The aims of the studbooks are:

- To inform the herpetological community with data and publications generated from captive situations
- Procuring, maintaining, and reproducing genetically healthy captive individuals for future loans to recognised individuals and institutions

These conservation goals are particularly relevant today as wild populations of many reptiles and amphibians experience increasing survival pressures. Establishing working programs that emphasise captive husbandry in conjunction with fieldwork is crucial in developing sound wildlife management. A significant contribution that captive animals may perform is through the concept of re-introduction of their potential offspring. Although re-introduction of species is at a very early stage and occasionally controversial, there may come a time when the offspring of captive animals are the sole source for re-introducing species into previously suitable habitat where the natural population has become extinct. More importantly re-introduction has the potential of insuring genetic diversity to populations that have become unnaturally isolated due to human interference.

1. INTRODUCTION AND ACTIVITIES IN **2002**

This report updates the 2001 annual report of the Homopus Research Foundation, that was drawn up in December 2001. The Homopus Research Foundation aims to form captive populations and to study these, to carry out research in the field and to gather and distribute as much information as possible about species of the genus *Homopus*. The current report summarises the activities of the foundation in 2002, its plans for 2003, and it gives an overview of the actual composition and changes in the captive populations: *H. signatus signatus*, *H. areolatus* and *H. femoralis*.

Additional information may be obtained from the internet site of the Homopus Research Foundation, http://www.homopus.org, or from the author of this report.

In the next sections an overview of the main activities in 2002 is presented.

1.1. Publications and presentations Homopus Research Foundation (see also chapter 12)

One manuscript on captive husbandry and breeding of *Homopus* sp. (formerly known as *H. bergeri*) that was reported as unpublished in the previous annual report in 2001, turned out to have been published (*Chelonian Conservation and Biology*) in 2001. This is the first report that provides details on the biology of this poorly known species.

Various manuscripts that had been submitted in 2001 or earlier were published in 2002. These concerned articles on population characteristics and activity in *H. s. signatus (Journal of Herpetology)*, natural diet of *H. s. signatus (African Journal of Herpetology)*, and male aggression in *H. s. signatus (Bulletin of the Chicago Herpetological Society)*. A manuscript on adjusting *H. s. signatus* to captive conditions was submitted and published in 2002 (*Turtle and Tortoise Newsletter*). An interview with Victor Loehr, focussing on the Homopus Research Foundation, was also produced and published (in Dutch) in 2002. The Dutch caresheets on *H. s. signatus* and *H. areolatus* that had been produced in 2001 were translated into English, and posted on the internet sites of the World Chelonian Trust (http://www.chelonia.org) and the Homopus Research Foundation. A leaflet with general information on the work of the Homopus Research Foundation, inviting to make donations, was also drawn up. So far only a Dutch version is available, but this leaflet will be translated into English and German.

Manuscript submissions in 2002 include a paper on reproduction, and one on growth and movement in H. s. signatus. The latter submission was rejected, but is being rewritten as a new manuscript (with additional data added) on growth of this subspecies, for submission elsewhere. Other submissions in 2002 include a short communication on the natural diet of H. s. signatus, and notes on temperature variation in the natural habitat of H. s. signatus (accepted for publication in Radiata), and on a new thread-trailing technique for small tortoises in densely structured habitats.

The number of reprint requests is increasing, originating (among others) from Sao Paulo Zoo (Brazil), Polytechnic of Namibia, Krakow University (Poland), and the University of the Western Cape (South Africa) in 2002. Most of the published information is also available at http://www.homopus.org, literature section.

Presentations were made at the following meetings:

- First European symposium on turtles and tortoises (Austria, January: Wild and captive *H. s. signatus*, and captive *H. areolatus* and *Homopus* sp.)
- Regional meeting of the Dutch herpetological society (Lacerta) (Netherlands, March: Turtles of southern Africa)
- University of Umeå (Sweden, June: Homopus s. signatus field research)
- Cape Nature Conservation (South Africa, September: Captive H. s. signatus)
- V. Landauer Landschildkrötentag, Regional group Kurpfalz of the German herpetological society (DGHT) (Germany, October: Rock-dwelling tortoises)

1.2. Internet site

The internet site of the Homopus Research Foundation was upgraded with a page that contains high quality photographs of African turtles and their habitats, and a downloadable theme for pocket

computers (PDAs). The appendices of the annual reports of the foundation continue to function as updates on the husbandry information provided on the internet site itself. A major change is that the studbook inventory is now available as PDF files (Adobe Acrobat) rather than as HTML, as was the case until now. In 2002 SPARKS software (also used for zoo studbooks, provided through ISIS, http://www.isis.org) was introduced to manage the studbooks. It has turned out to be too time-consuming to keep the inventory up to date in several different formats (HTML, SPARKS, annual reports), so that from now on SPARKS reports will be used directly for the internet site (PDF files), and the annual reports (see chapter 3 onwards). Minor changes of the Homopus Research Foundation internet site concern updates of the literature listing and research activities.

Over 7900 page views have been counted since June 1998 (approximately 2200 in 2002, 300 more than in 2001). South Africa has changed from the 8th to the 7th position in terms of number of visitors per country.

1.3. Journeys

South Africa was visited for six weeks in September and October 2002, within the scope of the field research project on *H. signatus cafer/H. s. signatus* (see also section 1.4). Three delegates from the Homopus Research Foundation participated in the fieldwork. One other *Homopus* studbook participant visited South Africa for holidays in November and December 2002.

1.4. Research

The *H. s. signatus* field projects that were initiated and conducted in 2000 and 2001 were followed by a study on *H. s. cafer* in September - October 2002. Unfortunately we were unable to locate more than one specimen during a full week of intensive searching (expecting to find at least fifteen specimens), and therefore it was decided to continue the *H. s. signatus* study rather than to accept the risk of ending up without any useful results at all. The fieldwork was conducted by one Belgian (Frank van Loon), and two Dutch (Mark Klerks and Victor Loehr) participants. It has resulted in important additional information on *H. s. signatus*, that is currently being processed for publication in international peer-reviewed journals. Since it has become obvious that only continuation of the study over a long period would provide answers to questions about annual activity and population and individual tortoise development, a study that will cover the next 5 - 10 years is now considered. A research proposal is in preparation.

Details about the set-up of all studies can be found in the project proposals. These may be obtained from the Homopus Research Foundation, or can be downloaded from its internet site. Information about results can be found in this annual report, in sections 1.1 and 2.1, and in chapter 12.

The 2002 field study would not have been possible without donations of money (Chelonian Research Foundation/Linnaeus Fund, Dutch Foundation for the Advancement of Herpetology, various private individuals), and research materials or services (CamCode/Statsdirect (UK), Onderstepoort Veterinary Institute, South African Weather Services, Springbok State Veterinarian, Springbok Hospital (all South Africa)). A permit was provided by Northern Cape Nature Conservation (South Africa). Retha Hofmeyr, Brian Henen, and Ernst Baard have continued their valuable input, greatly improving the research results.

Apart from the *H. s. signatus* field project and the continuing long term captive study on *H. s. signatus* (as described in the 1999 annual studbook report, and as referred to in section 2.1), the Homopus Research Foundation was involved in two other projects:

• Homopus s. signatus egg shells

Declan Nolan (previously employed at Nijmegen University, Netherlands) has been studying shells of tortoise eggs. Electron microscope scans from shells of captive hatched and non-hatched *H. s. signatus* eggs have been performed to study differences in calcium crystal shape and size.

• Metabolism in H. s. signatus in relation to temperature and metabolism in other tortoise species Fabian Schmidt at Frankfurt University (Germany) is conducting the above study as a graduation project. Metabolism (oxygen consumption) in H. s. signatus at different temperatures is compared to that of an ecologically related species, *Malacochersus tornieri*. Captive-bred H. s. signatus specimens were loaned to Frankfurt University in May 2002, and most of the specimens (see chapter 4) have been transferred to their final destinations in the studbook, upon completion of the experiments in Frankfurt. Unfortunately two specimens died during their stay at Frankfurt University.

1.5. Contacts

The Homopus Research Foundation was contacted by various persons and organisations in 2002. Among others: South African Technicon (input in project in which *H. boulengeri* could be encountered), Namaqua National Park (data on the biology of *H. signatus*), Markus Baur (Germany) (dead *Homopus* for study on gastrointestinal morphology), and various persons and institutions to request reprints of articles. A delegate of the Homopus Research Foundation, Victor Loehr, was proposed and accepted a member of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group.

In addition, the foundation has actively contacted others. A letter was sent out to the European Commission, in reply to a report drawn up by the English and German animal welfare organisations RSPCA and Pro Wildlife. These organisations had sent a report to the European Commission, concluding that *Homopus* spp. are not suitable for private husbandry. This conclusion was based on an incomplete literature review, and subjective interpretation by the authors, and cried for justification. The Homopus Research Foundation also secured registration of the current *H. signatus* field study in the Dutch Research Database (http://www.niwi.nl/nl/nod/nod.htm). Furthermore, the National Foundation for Research in Zoological Gardens was contacted and offered support in attempts to ensure improved collaboration between zoo and private studbooks. The latter foundation is continuing its efforts to realise this collaboration. The author of *Terralog* (Vetter, 2002, Edition Chimaira) was sent comments on the husbandry suggestion for *Homopus* in the book. These will be included in a second edition.

To reward individuals that contribute to the Homopus Research Foundation, a screen saver was created for donation to such persons. The screensaver contains a large number of high quality scans of southern African turtles and their habitats. German publisher Chimaira was prepared to distribute the screensaver to individuals making a donation to the Homopus Research Foundation.

1.6. Finances

The Homopus Research Foundation is a non-profit, tax-exempt organisation. A financial report of the year 2002 can be found in appendix 4. All expenses were covered by external sources of income. Most notably, contributions were received from the Chelonian Research Foundation (Linnaeus Fund), the field assistants in the *H. signatus* field research project, the Dutch Foundation for the Advancement of Herpetology, and a major donation was received from Victor Loehr. The latter donation covered all overhead costs of the foundation and the international travel expenses of the person concerned for the field research (including a reservation for 2003).

Appendix 4 also contains an estimate of private expenses of persons involved in the Homopus Research Foundation. These concern costs made for, but not through the foundation. To calculate the actual costs for the 2002 field research project, most of these costs have to be added to the foundation's expenses.

2. PLANS FOR ACTIVITIES IN 2003

The main focus of efforts within the Homopus Research Foundation will remain the ongoing field study of *H. signatus* in South Africa. Nevertheless, it will be attempted to pay attention to other activities related to *Homopus*.

2.1. *Publications and presentations* Homopus Research Foundation

Two manuscripts will soon be completed for submission in international peer-reviewed journals. These deal with growth, and thermoregulation of *H. s. signatus*. The Homopus Research Foundation will contribute to two other manuscripts, on egg shell morphology (Nijmegen University, Netherlands), and reproduction (University of the Western Cape, South Africa) in *H. s. signatus* and other tortoises. Furthermore, a manuscript that forms an update on the 1999 report on captive breeding of *H. s. signatus* (*Chelonian Conservation and Biology*) will be submitted for publication in the proceedings of the first European turtle symposium held in Vienna in January 2002. It will be attempted to process data and submit two other (shorter) manuscripts, on tick infections and scute aberrations in *H. s. signatus*. The Dutch leaflet for acquisition of funding will be translated into English and German.

• Presentations on reproduction and thermoregulation in *H. s. signatus* will be presented at the SOPTOM Congress on Chelonian Conservation in Senegal, June 2003. A presentation on temperature-dependent metabolism of *H. s. signatus* and *Malacochersus tornieri* will be presented at Frankfurt University (Germany) in January 2003.

2.2. Internet site

The internet site of the Homopus Research Foundation will continue to grow. Papers published within the foundation will be posted on the site when copyrights will permit, and changes in studbook composition will be updated frequently. Moreover, it will be attempted to post information about *Homopus* from outside of the foundation, when available.

One additional idea exists to expand the internet site with a new subject (already mentioned in the 2001 annual report):

• Highlights of the fieldwork (photos)

It will depend on the available time if this new section can be realised in 2003.

2.3. Journeys

In order to conduct follow-up fieldwork on H. s. signatus, a group of research participants (including at least three studbook participants) will visit South Africa in September and October 2003 (see paragraph 2.4).

2.4. Research

It is likely that the field research on *Homopus* in 2003 will be conducted in closer co-operation with the University of the Western Cape. Since the research proposal still needs to be discussed, it is not yet possible to present any details. However, it is the intention to continue the *H. s. signatus* study, focussing on annual activity in 2003. Several enthusiasts have applied for participation in the fieldwork in 2003, so that capacity should not be a problem.

The *H. s. signatus* metabolism study at Frankfurt University (Germany) will be finished in 2003. The tortoises that were on loan in Frankfurt have already been moved to their final destinations. There are no plans for participation in other external research projects, but applications will always be considered.

Part 1:

Studbook *Homopus s. signatus*

3. CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS

The number of locations where live *Homopus s. signatus* specimens were housed in 2002 grew from 7 to 12. These locations are in the Netherlands (3), Germany (6), USA (1), Sweden (1), and Belgium (1), and include 1 zoo. The 5 new locations are in the Netherlands and Germany, and were added when captivebred specimens that had been used for research purposes at Frankfurt University (Germany) (see section 1.4) were moved to permanent housing locations. It was attempted to house related specimens of different sex at different locations, to prevent accidental inbreeding. Locations will be supplied with unrelated offspring as soon as this will be available.

The total number of live specimens in the studbook population grew from 33 to 37: Ten specimens were born, at 3 locations, one captive-bred specimen was purchased, and 7 specimens died. With the exception of two specimens (studbook numbers 17 and 47), all founder specimens originate from a single population in South Africa. In September 2002 it was noted that the exact stretch of land was still for sale and it is not known what effect this might have on the tortoise population.

Specimens 6, 7, 10, 12, 13, 15, 25, 26, 31, 33, and 34 were transferred from Frankfurt University (A31) to various other locations. Additional transfers were not realised in 2002. All transfers were in accordance with national and international legislation.

Table I: Current living studbook population *Homopus s. signatus* per location as registered in the studbook. Numbers far right are relative numbers per location, indicating which specimens are housed together. MULT1 are specimens 18 and 19, MULT2 specimens 20 and 21. UNK1 and UNK2 are unknown specimens outside of the studbook.

Location: A02

Stud # | Sex | Hatch Date | Sire | Dam | Location | Date | Local ID | Event |

1	М	?????	WILD	WILD	SPRINGBOK A02	27 Sep 30 Sep	1995 1995	NONE I	Capture Loan to	1
2	F	????	WILD	WILD	SPRINGBOK A02	26 Sep 30 Sep	1995 1995	NONE II	Capture Loan to	1
3	F	?????	WILD	WILD	SPRINGBOK A02	26 Sep 30 Sep	1995 1995	NONE III	Capture Loan to	1
5	F	27 Feb 1996	WILD	3	A02	27 Feb	1996	III-1	Hatch	2
9	F	30 Nov 1996	1	2	A02	30 Nov	1996	II-1	Hatch	2
13	М	26 Sep 1998	1	2	A02 A07 A18 A31 A02	26 Sep 22 Nov 14 Dec 6 May 8 Dec	1998 1998 2001 2002 2002	II-5 	Hatch Loan to Loan to Loan to Loan to	2
40	?	2 Jul 2002	1	3	A02	2 Jul	2002	III-13	Hatch	3
41	?	25 Jul 2002	1	3	A02	25 Jul	2002	III-14	Hatch	3
42	?	20 Aug 2002	1	2	A02	20 Aug	2002	II-11	Hatch	3
43	?	29 Sep 2002	1	2	A02	29 Sep	2002	II-12	Hatch	3

Totals: 2.4.4 (10)

Location: A07

====== Stud #		Sex	Hatch Date	Sire	======= Dam	Location	Date	Local ID	======================================	
35		M	????	WILD	WILD	SPRINGBOK A02 A07	4 Oct 20 6 Oct 20 16 Dec 20	001 NONE 001 001	Capture Loan to Loan to	1

3	36	F		????	?	WILD	WILD	SPRINGBOK A02 A07	3 6 16	Oct Oct Dec	2001 2001 2001	NONE	Captur Loan t Loan t	e o o 1
4	14	?	31	Oct	2002	35	36	A07	31	Oct	2002		Hatch	2
Total	ls: 1	.1.1	(3)											
Locat	ion:	A10												
Stud	#	Sex	Hat	tch I	Date	Sire	Dam	Location	Da	te		Local ID	Event	
=====		=====	===:	====:	======	=======		===========	====:	====:		===========		
	б	М	8	Nov	1996	1	3	A02	8	Nov	1996	III-2	Hatch	
								A10	4	Aug	2001		Loan t	0
								A31	7	May	2002		Loan t	0
								A10	8	Dec	2002		Loan t	o 1
	7	F	24	Dec	1996	1	3	A02	24	Dec	1996	III-3	Hatch	
								A06	22	Nov	1998		Loan t	0
								A07	5	Jul	2000		Loan t	0
								A18	14	Dec	2001		Loan t	0
								A31	6	May	2002		Loan t	0
								A10	8	Dec	2002		Loan t	o 2

Totals: 1.1.0 (2)

Location: A12

Stud # =======	Sex =====	Hatch Date	Sire ======	Dam	Location	Dai	te ====		Local	ID ====	Event ========	
17	М	????	WILD	WILD	A12	8	Sep	1999			Transfer	1
18	М	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE VIEJO		Capture Transfer	2
19	М	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE STUMPY		Capture Transfer	3
20	F	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE MIDGE		Capture Transfer	3
21	F	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE BERTHA		Capture Transfer	2
27	?	17 Oct 2000	MULT1	MULT2	A12	17	Oct	2000	SASHI		Hatch	4
28	?	15 Nov 2000	MULT1	MULT2	A12	15	Nov	2000	PEANUT		Hatch	4
30	?	26 Jul 2001	MULT1	20	A12	26	Jul	2001			Hatch	5
32	?	10 Aug 2001	MULT1	20	A12	10	Aug	2001			Hatch	5
47	М	????	UNK1	UNK 2	A12	~	Jan	2002	ERNST		Transfer	6

Totals: 4.2.4 (10)

Location: A16

====== Stud # ========	====== Sex ======	======= Hatch I =======	Date	Sire	====== Dam =======	===	 Location	=== Da [:]	===== te =====		Local	ID	====== Event =========	== ==
11	М	10 Nov	1997		1	3	A02 A06 A07 A16	10 22 5 16	Nov Nov Jul Sep	1997 1998 2000 2000	III-4	1 - -	Hatch Loan to Loan to Loan to	1
14	м	22 Oct	1998		1	3	A02 A07 A16	22 22 16	Oct Nov Sep	1998 1998 2000	III-5	5 - -	Hatch Loan to Loan to	2

Locatior	n: A18							
======== Stud # ========	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	=========== Event ==========
15	F	20 Sep 1999	1	2	A02 A31 A18	20 Sep 1999 6 May 2002 8 Dec 2002	II-6	Hatch Loan to Loan to 1
Totals:	0.1.0	(1)						
Locatior	n: A25							
======= Stud # =======	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	======== Event =======
37	М	?????	WILD	WILD	SPRINGBOK A25	3 Oct 2001 6 Oct 2001	NONE	Capture Loan to 1
38	F	?????	WILD	WILD	SPRINGBOK A25	3 Oct 2001 6 Oct 2001	NONE	Capture Loan to 1
Totals:	1.1.0	(2)						
Locatior	n: A33							
======= Stud #	Sex	Hatch Date	 Sire	Dam	Location	 Date	Local ID	========= Event
10	-==== M	22 Oct 1997	1	2	A02 A10 A31 A33	22 Oct 1997 4 Aug 2001 7 May 2002 8 Nov 2002	II-3 UHURU	Hatch Loan to Loan to Loan to Loan to 1
Totals:	1.0.0	(1)						
Locatior	n: A35							
======== Stud #	====== Sex	Hatch Date	======= Sire	 Dam	Location	 Date	Local ID	======== Event
=======								
31	F	3 Aug 2001	1	2	A02 A31 A35	3 Aug 2001 6 May 2002 30 Nov 2002	II-10	Hatch Loan to Loan to 1
34	F	30 Sep 2001	1	3	A02 A31 A35	30 Sep 2001 6 May 2002 30 Nov 2002	III-11 	Hatch Loan to Loan to 1
Totals:	0.2.0	(2)						
Locatior	n: A36							
======== Stud #	 Sex	Hatch Date	======== Sire	 Dam	Location	 Date	Local ID	======== Event
12	М	21 Nov 1997	1	2	A02 A07 A18 A31 A36	21 Nov 1997 22 Nov 1998 14 Dec 2001 6 May 2002 8 Dec 2002	II-4	Hatch Loan to Loan to Loan to Loan to 1
Totals:	1.0.0	(1)						
Locatior	n: A37							
======================================	Sex	Hatch Date	Sire	Dam	Location	 Date	Local ID	 Event
25	М	12 Sep 2000	1	3	A02 A31 A37	12 Sep 2000 6 May 2002 11 Dec 2002	III-8	Hatch Loan to Loan to 1

33	М	19 Aug	2001	1	3	A02 A31 A37	19 Aug 6 May 11 Dec	2001 2002 2002	III-10 	Hatch Loan to Loan to	2
Totals:	2.0.0	(2)									
Location	: WUPE	ERTAL									
Stud #	Sex	Hatch 1	Date Sire	e Dam		Location	Date		Local ID	Event	

Totals: 0.1.0 (1)

Together, all specimens make the total living studbook population 15 males, 13 females, and 9 unknown, housed at 12 locations. Five (potential) bloodlines are present, with founders at locations A02 (1 bloodline), A07 (1), A12 (2), and A25 (1). One couple at location A12 includes a very old male (18). This male has not shown any mating activity so far, and location A12 has requested an alternative male. At this moment no wild-caught surplus males from the same locality are available. Coupling female 21 to a captive-bred male is not advisable, as it would decrease the potential number of unrelated bloodlines by 20%. It could be considered better to transfer the couple (specimens 18 and 21) to another location on breeding loan, to see if this might bring about a change in the behaviour of the tortoises. A response to this proposal from location A12 would be appreciated.

At location A02, a 1.2 breeding group is kept. Because of the lack of wild-caught males from the same locality, this group will be maintained. However, one of these females is available for formation of an unrelated bloodline if a suitable male became available.

Three single captive-bred females (7, 15, and 26) and 7 single males (6, 10, 11, 12, 14, 25, and 33) fit for breeding purposes are present, at locations A10 (6 and 7), A16 (11 and 14), A18 (15), A33 (10), A36 (12), A37 (25 and 33), and WUPPERTAL (26). All these originate from the same 1.2 founder population and thus are genetically related (same sire). Captive-bred specimens 5 and 13 are unrelated, and have been placed together. Female 9 has been placed in the same enclosure, although this female is related to male 13. Any eggs that may be produced by this female will be destroyed, and the female will only be bred with an unrelated male after it will have been separated from the related male for a period of 3 years. This way, inbreeding due to sperm storage will likely be avoided. The unrelated captive-bred males that will become available from other bloodlines in the next years will first be combined with the other solitary females (locations A10, A18, and WUPPERTAL), leaving sufficient time for separation of female 9 before a sufficiently large number of males will be available.

Wild-caught specimens 18, 19, 20, and 21 were originally housed as a 2.2 group at location A12. They were separated to form different bloodlines in 2001. Until 2005, all hatchlings will be considered related to both males (due to possible sperm storage), unless it is possible to prove otherwise by DNA analysis.

Males 17 and 47, fit for breeding, are available at location A12. These males originate from unknown wild locations and founders (47) and therefore will only be paired with females that are from unknown original location or otherwise surplus.

4. IMPORTS, BIRTHS AND DEATHS

In 2002, no imports of *H. s. signatus* have taken place. A strategy for future imports has been drawn up in the previous annual reports. At this point there are no reasons to change this strategy, meaning that additional imports of wild-caught specimens will only be required in 10 - 15 years from now.

The studbook population H. s. signatus produced eggs and hatchlings at 3 locations in 2002. At location A02, female 3 produced three eggs and female 2 produced 4 eggs. These eggs were the first that were produced in the new enclosure in which the tortoises had been released in summer 2001 (see annual report 2001, appendix 1). The transfer did not change the expected egg-laying period or egg number, but it changed the egg-laying behaviour of female 3. Whereas she never buried her eggs in a normal way in the previous enclosure (they were produced in rock crevices or just buried a few centimetres deep), she did so in the new enclosure. Furthermore, females 2 and 3 did not construct any "test nests" anymore before oviposition. This may be a result of more optimal conditions in the new enclosure. The first egg of female 3, and the last of female 2 were found in the enclosure after absence of the keeper (oviposition date unknown). The first egg was only partly buried due to shallow soil, and was exposed to night temperatures of 10° C or lower. This egg developed and hatched successfully. The egg mentioned above from female 2 was found in a vertical position, incubated in this way, and also hatched successfully. The latter egg was incubated in Seramis (weight ratio Seramis:water = 4.4:1; buried completely), the others in vermiculite (weight ratio vermiculite:water = 1:2; buried completely). Two eggs produced by female 2 failed to develop, and one had a large longitudinal crack in the underside of the shell. It is not known if this was a result of decomposition or substrate humidity. From 2003, all eggs will be incubated in Seramis to see if this yields different results.

An additional elongated (45.4 x 22.0 mm) egg was found in the enclosure of captive-bred females 5, 9 (both born in 1996), and 15 (born in 1999) at location A02. At that moment, none of these females had been kept with a (sub-)mature male. The egg was found when it exploded during spraying. It was positioned in a hiding place, with sand (app. 2 cm) on the bottom. It was not buried completely.

Location A07 produced 1 egg, resulting in one hatchling. This is the first hatchling of a second European bloodline (founders imported in 2001). The first egg of this pair, produced at location A02 shortly after importing in 2001, and the egg produced by the second couple immediately after importing in 2001, failed to develop.

At location A12, 3 eggs were produced by female 20. One egg resulted in twins. One twin was dead, and the other one died 1 hour after hatching, although it was separated from the dead hatchling immediately. The second egg hatched, but the hatchling died within 24 hrs with blood coming from its nose and mouth, and the third egg contained a dead embryo when opened. These negative results may have been caused by occasionally too high incubation temperatures. A new incubator with lower maximum temperatures will be built and used in 2003.

Additional husbandry information is present in the appendices.

Table II	: Birt	hs of Ho	omopus	s. sign	<i>atus</i> in	2002.	MULT1	is	spec	cimen	18 or	19.		
Stud #	Sex	Hatch I	Date	Sire	Dam	Locat	ion	Dat	.e		Local	ID	Event	
39	?	11 Jun	2002	1	3	A02		11 20	Jun Jun	2002 2002	III-12	2	Hatch Death	
40	?	2 Jul	2002	1	3	A02		2	Jul	2002	III-13	3	Hatch	
41	?	25 Jul	2002	1	3	A02		25	Jul	2002	III-14	4	Hatch	
42	?	20 Aug	2002	1	2	A02		20	Aug	2002	II-11	1	Hatch	
43	?	29 Sep	2002	1	2	A02		29	Sep	2002	II-12	2	Hatch	
44	?	31 Oct	2002	35	36	A07		31	Oct	2002		_	Hatch	

45	?	~ Jun 2002	MULT1	20	A12	~ Jun 2002 ~ Jun 2002	Hatch Death
46	?	~ Jun 2002	MULT1	20	A12	~ Jun 2002	Hatch
						~ Jun 2002	Death
48	?	2002	MULT1	20	A12	2002 2002	Hatch Death
49	?	2002	MULT1	20	A12	2002	Hatch Death

Totals: 0.0.10 (10)

One hatchling that was born in 2002 at location A02 died shortly after hatching. It refused to feed and remained completely inactive. The cause of death is unknown, but since this specimen was treated exactly as most other hatchlings that thrived, it may have been born with some sort of abnormality. The specimen has been preserved in ethanol at location A02. Husbandry practises have not been adjusted based on this death.

At location A12, twins were born, one of which one was stillborn. The second specimen died within 1 hour after hatching, presumably as a result of the earlier death of the first twin. One other hatchling was born, but died within 24 hrs. A third egg contained a dead embryo. A new incubator with lower maximum temperatures should result in better results in 2003.

Two additional specimens died during their stay at Frankfurt University (A31) for the metabolism experiments. One of these specimens was housed in a relatively small enclosure (60 x 30 cm) with three other specimens from the 2001 cohort (born at location A02). Although the cause of death is unknown, it may have been stress-related. Also the trials (three times within two weeks during 10 - 28 hrs in small measurement chambers, imitating retreats) may have caused considerable stress. When this specimen had died, a second basking spot was installed in the enclosure concerned. The second tortoise that died at this location ended up on its back frequently, and at one point remained undetected for two days, after it had manoeuvred itself in a rock crevice. This specimen probably died from exhaustion when it tried to upright itself in the crevice. The tortoises in the Homopus Research Foundation studbooks remain available for research purposes, but based on the experience gained during the metabolism study, 2 conditions will be applicable in future projects:

- Spare enclosure(s) should be available to house at least 1 specimen, if this is necessary (it should be noted that there were no signs that the 2001 cohort at Frankfurt University suffered from stress and needed to be separated).
- At least 2 animal keepers with some knowledge on tortoises should be present. If 1 is on leave, there should always be another person who knows how to take care of tortoises.

The carcasses of the latter two tortoises have been donated to the Zoology Museum in Dresden (Germany). Collection numbers are MTD45177 and MTD45178.

Table II	I: Deat	ths of Homor	ous s. sig	<i>matus</i> in	2002.	MULT1 is	s spe	ecimer	n 18 or 19.		
Stud #	Sex	Hatch Date	Sire	Dam	Locati	on Da	==== te =====	 	Local ID	Event	== ==
22	М	19 Jun 2000) 1	2	A02 A31	19 6	Jun May	2000 2002	II-7	Hatch Loan to	
[Death b (Lehr),	y: Env regist:	. or Beh. Co ration MTD 4	onditions 15177 No	Given Autopsy	to an I Planne	14 institut: d]	Sep ion:	2002 Mus.	fur Tierku	Death nde, Dreso	den
29	?	15 Jul 2001	L 1	3	A02 A31	15 6 14	Jul May Aug	2001 2002 2002	III-9	Hatch Loan to Death	
[Death b registra	y: Other	er/Unknown FD 45178	Given to No Autops	o an Inst v Planne	itution dl	: Mus. 1	Fierl	cunde ,	, Dresden (Lehr),	

39	?	11 Jun	2002	1	3	A02	11 20	Jun Jun	2002 II 2002	II-12	Hatch Death
[Death	by: Othe	er/Unkno	own	Mounted or	Prese	rved:	A02 No	Auto	opsy Pla	anned]	
45	?	~ Jun	2002	MULT1	20	A12	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Jun Jun	2002 2002		Hatch Death
[Death	by: Stil	lbirth	Unk	nown desti	nation	No	Autopsy 1	Planr	ned]		
46	?	~ Jun	2002	MULT1	20	A12	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Jun Jun	2002		Hatch Death
[Death	by: Stil	lbirth	Unk	nown desti	nation	No	Autopsy I	Plann	ned]		
48	?		2002	MULT1	20	A12			2002 <u></u>		Hatch Death
[Death	by: Env.	or Beł	ı. Con	ditions	Unknow	n dest	tination	No	Autopsy	/ Planned]
49	?		2002	MULT1	20	A12			2002		Hatch Death
[Death	by: Stil	lbirth	Unk	nown desti:	nation	No	Autopsy I	Planr	ned]		200011

Totals: 1.0.6 (7)

5. TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES

The current total *H. s. signatus* studbook population consists of 49 specimens. From these, 13 are wild-caught specimens (12 collected and imported by the Homopus Research Foundation), and 36 are captive-bred (35 within the studbook). Thirty-seven tortoises (12 wild-caught, and 25 captive-bred) are currently alive, housed at 12 locations.

The tortoises that were imported in 2001 have adjusted to captivity and appear to be doing well. The total number of bloodlines is 5, in Europe (3) and the USA (2), and all founders are healthy and stable. Reproduction and raising of hatchlings continues to be fairly successful, and the sex ratio in the studbook is almost 1:1. The rather negative breeding results of 2002 have a known cause, and a solution should result in better results in 2003. All specimens but two have known (founder) localities. Solitary specimens are present, but it will only be a matter of time until unrelated partners will become available from other bloodlines. The overall perspectives of this studbook are very good.

In 2001 all locations were requested to sign an agreement about studbook policies (see appendix 5). All locations have done so, except location A12 in the USA. This was probably due to a misunderstanding, as location A12 assumed that ownership of the specimens at that location would be transferred to the Homopus Research Foundation (all other specimens are the property of the foundation). This is not the case, and location A12 has assured in writing that it will act in agreement with the studbook policies. Location A12 will again be requested to sign the agreement.

 Table IV: Total studbook population Homopus s. signatus. MULT1 are specimens 18 and 19, MULT2 specimens 20 and 21. UNK1 and UNK2 are unknown specimens outside of the studbook.

Stud #	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	Event
1	М	????	WILD	WILD	SPRINGBOK A02	27 Sep 1995 30 Sep 1995	NONE I	Capture Transfer
2	F	????	WILD	WILD	SPRINGBOK	26 Sep 1995	NONE	Capture

					A02	30	Sep	1995	II	Transfer
3	F	????	WILD	WILD	SPRINGBOK	26	Sep	1995	NONE	Capture
					A02	30	Sep	1995	III	Transfer
4	М	????	WILD	WILD	SPRINGBOK	28	Sep	1995	NONE	Capture
					A02	30	Sep	1995	IV	Transfer
						24	Dec	1995		Death
5	F	27 Feb 1996	WILD	3	A02	27	Feb	1996	III-1	Hatch
6	М	8 Nov 1996	1	3	A02	8	Nov	1996	III-2	Hatch
					A10	4	Aug	2001		Loan to
					A31	7	May	2002		Loan to
					A10	8	Dec	2002		Loan to
7	F	24 Dec 1996	1	3	A02	24	Dec	1996	III-3	Hatch
					A06	22	Nov	1998		Loan to
					A07	5	Jul	2000		Loan to
					A18	14	Dec	2001		Loan to
					A31	6	May	2002		Loan to
					A10	8	Dec	2002		Loan to
8	?	26 Jan 1997	1	2	A02	26	Jan	1997	II-2	Hatch
						2	Feb	1997		Death
9	F	30 Nov 1996	1	2	A02	30	Nov	1996	II-1	Hatch
10	М	22 Oct 1997	1	2	A02	22	Oct	1997	II-3	Hatch
					A10	4	Aug	2001		Loan to
					A31	7	May	2002		Loan to
					A33	8	Nov	2002	UHURU	Loan to

11	Μ	10 Nov 1997	1	3	A02 A06 A07 A16	10 22 5 16	Nov Nov Jul Sep	1997 1998 2000 2000	III-4 	Hatch Loan to Loan to Loan to
12	Μ	21 Nov 1997	1	2	A02 A07 A18 A31 A36	21 22 14 6 8	Nov Nov Dec May Dec	1997 1998 2001 2002 2002	II-4 	Hatch Loan to Loan to Loan to Loan to
13	М	26 Sep 1998	1	2	A02 A07 A18 A31 A02	26 22 14 6 8	Sep Nov Dec May Dec	1998 1998 2001 2002 2002	II-5 	Hatch Loan to Loan to Loan to Loan to
14	М	22 Oct 1998	1	3	A02 A07 A16	22 22 16	Oct Nov Sep	1998 1998 2000	III-5 	Hatch Loan to Loan to
15	F	20 Sep 1999	1	2	A02 A31 A18	20 6 8	Sep May Dec	1999 2002 2002	II-6	Hatch Loan to Loan to
16	?	4 Oct 1999	1	3	A02	4 4	Oct Oct	1999 1999	III-6	Hatch Death
17	М	????	WILD	WILD	A12	8	Sep	1999		Transfer
18	М	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE VIEJO	Capture Transfer
19	М	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE STUMPY	Capture Transfer
20	F	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE MIDGE	Capture Transfer
21	F	????	WILD	WILD	SPRINGBOK A12	~16 ~16	Sep Sep	1999 1999	NONE BERTHA	Capture Transfer
22	М	19 Jun 2000	1	2	A02 A31	19 6 14	Jun May Sep	2000 2002 2002	II-7	Hatch Loan to Death
23	?	19 Jul 2000	1	2	A02	19 29	Jul Jun	2000 2001	II-8	Hatch Death
24	?	2 Aug 2000	1	3	A02	2 2	Aug Aug	2000 2000	III-7	Hatch Death
25	М	12 Sep 2000	1	3	A02 A31 A37	12 6 11	Sep May Dec	2000 2002 2002	III-8 	Hatch Loan to Loan to
26	F	7 Oct 2000	1	2	A02 A31 WUPPERTAL	7 6 18	Oct May Dec	2000 2002 2002	II-9	Hatch Loan to Loan to
27	?	17 Oct 2000	MULT1	MULT2	A12	17	Oct	2000	SASHI	Hatch
28	?	15 Nov 2000	MULT1	MULT2	A12	15	Nov	2000	PEANUT	Hatch
29	?	15 Jul 2001	1	3	A02 A31	15 6 14	Jul May Aug	2001 2002 2002	III-9	Hatch Loan to Death
30	?	26 Jul 2001	MULT1	20	A12	26	Jul	2001		Hatch
31	F	3 Aug 2001	1	2	A02 A31 A35	3 6 30	Aug May Nov	2001 2002 2002	II-10	Hatch Loan to Loan to

32	?	10 Aug 2001	MULT1	20	A12	10 Aug	2001	Hatch
33	М	19 Aug 2001	1	3	A02 A31 A37	19 Aug 6 May 11 Dec	2001 III-10 2002 2002	Hatch Loan to Loan to
34	F	30 Sep 2001	1	3	A02 A31 A35	30 Sep 6 May 30 Nov	2001 III-11 2002 2002	Hatch Loan to Loan to
35	М	????	WILD	WILD	SPRINGBOK A02 A07	4 Oct 6 Oct 16 Dec	2001 NONE 2001 2001	Capture Transfer Loan to
36	F	????	WILD	WILD	SPRINGBOK A02 A07	3 Oct 6 Oct 16 Dec	2001 NONE 2001 2001	Capture Transfer Loan to
37	М	????	WILD	WILD	SPRINGBOK A25	3 Oct 6 Oct	2001 NONE 2001	Capture Loan to
38	F	????	WILD	WILD	SPRINGBOK A25	3 Oct 6 Oct	2001 NONE 2001	Capture Loan to
39	?	11 Jun 2002	1	3	A02	11 Jun 20 Jun	2002 III-12 2002	Hatch Death
40	?	2 Jul 2002	1	3	A02	2 Jul	2002 III-13	Hatch
41	?	25 Jul 2002	1	3	A02	25 Jul	2002 III-14	Hatch
42	?	20 Aug 2002	1	2	A02	20 Aug	2002 II-11	Hatch
43	?	29 Sep 2002	1	2	A02	29 Sep	2002 II-12	Hatch
44	?	31 Oct 2002	35	36	A07	31 Oct	2002	Hatch
45	?	~ Jun 2002	MULT1	20	A12	~ Jun ~ Jun	2002 2002	Hatch Death
46	?	~ Jun 2002	MULT1	20	A12	~ Jun ~ Jun	2002 2002	Hatch Death
47	М	????	UNK1	UNK 2	A12	~ Jan	2002 ERNST	Transfer
48	?	2002	MULT1	20	A12		2002 2002	Hatch Death
49	?	2002	MULT1	20	A12		2002 2002	Hatch Death

Totals: 17.13.19 (49)

Part 2:

Studbook *Homopus areolatus*

6. CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS

Live *Homopus areolatus* are located at 6 studbook locations, the same number as last year: Netherlands (2), USA (1), Sweden (1), Switzerland (1) and Germany (1). Location A21 has transferred its specimens to (new) location A37. No other transfers were registered. All transfers were in accordance with national and international legislation.

The total number of live specimens remained stable at 19 in 2002. Three specimens were born, and 3 specimens died. Location A12 in the USA has not sent any updates since mid 2002, and therefore this location's information as presented here may be slightly outdated.

Husbandry conditions and additional information is available in appendix 2.

Table I: Current living studbook population *Homopus areolatus* as registered in the studbook. Numbers far right are relative numbers per location, indicating which specimens are housed together. MULT1, MULT2, and MULT3 are groups of unregistered specimens at a location outside of the studbook. UNK1 and UNK2 are two specimens at a location outside of the studbook.

Location: A02

======== Stud #	Sex	Hatch Date	======= Sire	====== Dam	======================================	======================================	Local ID	Event	= _
4	F	????	MULT1	MULT2	KRAAIFONT A02	???? 21 Nov 1997	IV	Hatch Transfer	1
5	М	?????	MULT1	MULT2	KRAAIFONT A02	???? 21 Nov 1997	v	Hatch Transfer	1
25	F	15 Sep 2001	5	4	A02	15 Sep 2001	IV-1	Hatch	2

Totals: 1.2.0 (3)

Location: A03

============	=================		========	=============			=============	-
Stud # Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	Event	
			========					i.

6	М	????	MULT1	MULT2	KRAAIFONT A02 A03	???? 21 Nov 1997 VI 14 Apr 2001 HZ0738	Hatch Transfer Transfer 1
33	F	????	WILD	WILD	LONDON RP A03	???? 23 Dec 2001 HZ0793	Transfer Transfer 1

Totals: 1.1.0 (2)

Location: A12

										_
 Stud #	Sex	Hatch Date	Sire	Dam	Location	Dat	:e	Local ID	Event	
10	 М	????	WILD	WILD	A13 A12	~16	???? Sep 1999	ERNST	Transfer Transfer	1
11	F	????	WILD	WILD	KRAAIFONT A12	~16	???? Sep 1999	A5	Transfer Transfer	1?
12	F	????	WILD	WILD	KRAAIFONT A12	~16	???? Sep 1999	A6	Transfer Transfer	1?
14	?	????	WILD	WILD	KRAAIFONT A12	16	???? Sep 1999	BABY	Transfer Transfer	2?

Totals: 1.2.1 (4)

Location	n: A16								
======= Stud #	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	======================================	
=======	======				===========				:=
16	М	????	WILD	WILD	A16	30 Aug 1994	l	Transfer	1
17	F	????	WILD	WILD	A16	30 Aug 1994	£	Transfer	1
18	М	23 May 2000	16	17	A16	23 May 2000)	Hatch	2
34	?	30 Jun 2002	16	17	A16	30 Jun 2002	2	Hatch	3?
35	?	9 Jul 2002	16	17	A16	9 Jul 2002	2	Hatch	3?
Totals:	2.1.2	(5)							
Location	n: A26								
stud #	Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	Event	
27	М	????	WILD	WILD	KRAAIFONT	????		Transfer	
					A26	9 Jul 2001	<u> </u>	Transfer	1
20	F	2222	MITTO	WITD		2222		Twopafor	
20	г		MILU	MILD	A26	9 Jul 2001		Transfer	1
Totals:	1.1.0	(2)							
Location	n: A37								
======= Stud #	======= Sex	Hatch Date	Sire	Dam	Location	Date	Local ID	Event	
									=
22	М	????	WILD	WILD	A20	????		Transfer	
					A21	17 Oct 2000)	Transfer	
					A37	15 Sep 2002	2	Transfer	1
23	F	2222	WITT	WILD	720	2222		Transfer	
40	г		MTTM	МПП	A21	17 Oct 2000)	Transfer	
					A37	15 Sep 2002	2	Transfer	1
								_	
24	?	????	UNK1	UNK 2	A20	????		Hatch	
					A21 A27	15 Sop 2000)	Transfer	2
					I CA	тэ зер 2002		ITAUSTEL	2

Totals: 1.1.1 (3)

Together, all specimens make the total living studbook population 19 specimens, forming 6 (potential) bloodlines. There are no solitary specimens fit for breeding available. Adult specimens are (probably) housed in a multiple female breeding group at location A12, but since there are no additional males available this appears the best way to optimise breeding results in the years to come. However, should males unrelated to the studbook population become available, it would be important to separate the females to form additional bloodlines. Also female 25 at location A02, and male 18 at location A16 may become available as solitary specimens in 2003 or 2004.

7. IMPORTS, BIRTHS AND DEATHS

In 2002 no imports of *H. areolatus* have taken place. Since breeding results with the existing specimens are not too good, no additional imports have been planned at this moment.

Breeding at location A16 was resumed in 2002, and 2 hatchlings were born at this location. Three eggs (7, 8, and 8 g) were laid on 14 March (weight female dropped from 205 to 184 g, and was back at 191 g after drinking and eating), of which two hatched (see appendix 2 for details).

Female 4 at location A02 produced only 1 clutch in 2002. This clutch was produced during absence of the animal keeper and was found several days later. The clutch consisted of 3 eggs, but 1 was broken during oviposition. The other 2 eggs were incubated in Seramis (weight ratio Seramis:water = 4.4:1; buried completely). One failed to develop, and the second contained a dead embryo when it was opened after the normal incubation period had passed. The cause of this is not known. Future clutches will all be incubated in Seramis, to see of this yields different results. Details about the incubation method used until now can be found in the 2001 annual report. The specimens at location A03 showed mating activity, but did not produce any eggs so far.

Further details about egg incubation and periods can be found in appendix 2.

Table II	Table II: Births of Homopus areolatus in 2002.										
Stud #	Sex	Hatch	Date	Sire Da	1m	Location	Date	Loca	l ID Event		
34 35	? ?	30 Jun 9 Jul	2002 2002 2002	16 16	17 17	A16 A16	30 Jun 9 Jul	2002	Hatch Hatch		
36	?	12 Oct	2002	5	4	A02	12 Oct 12 Oct	2002 2002	Hatch Death		

Totals: 0.0.3 (3)

Apart from the dead embryo described above, two specimens died. One was a recently imported specimen that apparently was unable to adjust to captive conditions. The cause of death remains unknown. The second specimen was a captive-bred tortoise, hatched and kept at bcation A02. The cause of death of this specimen is also not known, but may be related to ingestion of a large volume of clover seeds and seedlings. These seeds had been dispersed in the enclosure to germinate and act as food enrichment. However, specimen 26 ate a large volume of the seeds, became increasingly inactive, and died weeks later. Otherwise nothing special was noted.

Table :	III: Deat	ths of <i>Homo</i> l	ous areola	<i>tus</i> in 2	002.					
 Stud #	Sex	Hatch Date	Sire	 Dam	Loca	ition D	ate		Local ID	Event
26	?	15 Oct 200	L 5	4	A02	1 2	===== 5 Oct 6 Apr	2001 2002	IV-2	Hatch Death
[Death	by: Env	. or Beh. Co	onditions	Mounte	d or	Preserve	d: A0	2 No	o Autopsy	Planned]
32	F	????	WILD	WILD	A29 A03	1	~ Jun 5 Jun 6 May	2000 2001 2002	HZ0752	Transfer Transfer Death
[Death	by: Unkı	nown means]				_	1			
36	?	12 Oct 2003	2 5	4	A02	1	2 Oct 2 Oct	2002		Hatch Death
[Death	by: Stil	llbirth Mo	ounted or	Preserve	d: A0	2 No A	utops	y Pla	nned]	Death
Totals	: 0.1.2	(3)								

8. TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES

The current studbook population of the studbook *H. areolatus* consists of 36 specimens. From these, 21 are wild-caught (15 handed to Tygerberg Zoopark by visitors, 1 caught in the Pretoria area in South Africa, 1 had been in captivity in the Netherlands for about 15 years, and 4 originate from unknown locations) and 15 are captive-bred. Nineteen tortoises are alive, housed at 6 locations.

It is obvious that the studbook population *H. areolatus* is still not safe. Mortality has been high over the past years and reproduction is low. However, the current composition of the studbook population potentially allows formation of several different bloodlines, and reproduction is increasing gradually. At this moment, additional specimens are not required for the studbook to function.

In 2001 all locations were requested to sign an agreement regarding studbook policies (see appendix 5). All locations have done so, except location A12 in the USA. This was probably due to a misunderstanding, as location A12 assumed that ownership of the specimens at that location would be transferred to the Homopus Research Foundation. This is not the case (the foundation does not own any *H. areolatus*), and location A12 has assured in writing that it will act in agreement with the studbook policies. Location A12 will again be requested to sign the agreement.

Table IV: Total studbook population *Homopus areolatus*. MULT1, MULT2, and MULT3 are groups of unregistered specimens at a location outside of the studbook. UNK1 and UNK2 are two specimens at a location outside of the studbook.

Stud # | Sex | Hatch Date | Sire | Dam | Location | Date | Local ID | Event |

1	F	????	WILD	WILD	KRAAIFONT A02 A03	~ 21 14 9	Jul 1997 Nov 1997 Dec 1997 Nov 1998	I HZ0525	Transfer Transfer Transfer Death
2	F	????	WILD	WILD	KRAAIFONT A02 A03	~ 21 14 13	Jul 1997 Nov 1997 Dec 1997 Aug 1999	II	Transfer Transfer Transfer Death
3	?	????	MULT1	MULT2	KRAAIFONT A02	21 29	???? Nov 1997 Oct 1999	III	Hatch Transfer Death
4	F	????	MULT1	MULT2	KRAAIFONT A02	21	???? Nov 1997	IV	Hatch Transfer
5	М	????	MULT1	MULT2	KRAAIFONT A02	21	???? Nov 1997	v	Hatch Transfer
6	М	????	MULT1	MULT2	KRAAIFONT A02 A03	21 14	???? Nov 1997 Apr 2001	VI HZ0738	Hatch Transfer Transfer
7	М	????	WILD	WILD	ROTTERDAM A03	5	???? ???? Jul 1998	1 HZ0457	tf Transfer Transfer Death
8	F	????	WILD	WILD	KRAAIFONT A12	~16 19	???? Sep 1999 Mar 2000	A1	Transfer Transfer Death
9	F	????	WILD	WILD	A13 A12	~16 30	???? Sep 1999 Apr 2000	BLACKY	Transfer Transfer Death
10	М	????	WILD	WILD	A13 A12	~16	???? Sep 1999	ERNST	Transfer Transfer

11	F	?????	WILD	WILD	KRAAIFONT A12	~16	???? Sep 1999	A5	Transfer Transfer
12	F	<u></u>	WILD	WILD	KRAAIFONT A12	~16	???? Sep 1999	A6	Transfer Transfer
13	М	????	WILD	WILD	KRAAIFONT A12	~16 15	???? Sep 1999 Feb 2000	A7	Transfer Transfer Death
14	?	?????	WILD	WILD	KRAAIFONT A12	16	???? Sep 1999	BABY	Transfer Transfer
15	F	????	WILD	WILD	A13 A12	~16 15	???? Sep 1999 Feb 2000	A4	Transfer Transfer Death
16	М	????	WILD	WILD	A16	30	Aug 1994		Transfer
17	F	????	WILD	WILD	A16	30	Aug 1994		Transfer
18	М	23 May 2000	16	17	A16	23	May 2000		Hatch
19	?	5 Feb 2000	MULT3	11	A12	5 5	Feb 2000 Feb 2000		Hatch Death
20	?	16 Mar 2000	MULT3	11	A12	16 16	Mar 2000 Mar 2000		Hatch Death
21	?	16 Mar 2000	MULT3	11	A12	16 16	Mar 2000 Mar 2000		Hatch Death
22	М	????	WILD	WILD	A20 A21 A37	17 15	???? Oct 2000 Sep 2002		Transfer Transfer Transfer
23	F	????	WILD	WILD	A20 A21 A37	17 15	???? Oct 2000 Sep 2002		Transfer Transfer Transfer
24	?	????	UNK1	UNK2	A20 A21 A37	17 15	???? Oct 2000 Sep 2002		Hatch Transfer Transfer
25	F	15 Sep 2001	5	4	A02	15	Sep 2001	IV-1	Hatch
26	?	15 Oct 2001	5	4	A02	15 26	Oct 2001 Apr 2002	IV-2	Hatch Death
27	М	;;;;	WILD	WILD	KRAAIFONT A26	9	???? Jul 2001		Transfer Transfer
28	F	;;;;	WILD	WILD	KRAAIFONT A26	9	???? Jul 2001		Transfer Transfer
29	М	????	WILD	WILD	KRAAIFONT A27	9 9	???? Jul 2001 Nov 2001		Transfer Transfer Death
30	F	????	WILD	WILD	KRAAIFONT A27	9 11	???? Jul 2001 Nov 2001		Transfer Transfer Death
31	?	11 Nov 2001	5	4	A02	11 11	Nov 2001 Nov 2001		Hatch Death
32	F	????	WILD	WILD	A29 A03	~ 15 16	Jun 2000 Jun 2001 May 2002	HZ0752	Transfer Transfer Death
33	F	????	WILD	WILD	LONDON RP A03	23	???? Dec 2001	HZ0793	Transfer Transfer

34	?	30 Jun 2002	16	17	A16	30 Jun 2002	Hatch
35	?	9 Jul 2002	16	17	A16	9 Jul 2002	Hatch
36	?	12 Oct 2002	5	4	A02	12 Oct 2002 12 Oct 2002	Hatch Death

Totals: 10.15.11 (36)

Part 3:

Studbook Homopus femoralis

9. CURRENT LIVING STUDBOOK POPULATION AND TRANSFERS

Live *Homopus femoralis* are located at 2 studbook locations in the Netherlands, the same as in 2001. The total number of live specimens has remained 3. All were obtained from the British Tortoise Trust, that had rescued the specimens from a private keeper in the UK. One specimen (studbook number 1) was transferred to location A08 in 2002, in order to provide it with more room.

Table I: Current living studbook population Homopus femoralis as registered in the studbook. Cage numbers are relative numbers per location, indicating which specimens are housed together. _____ Location: A02 _____ Stud # | Sex | Hatch Date | Sire | Dam | Location | Date | Local ID | Event | ~ Jan 2001 __ 3 М ???? WILD WILD A28 Transfer A02 23 Dec 2001 III Loan to 1 Totals: 1.0.0 (1) Location: A08 _____ Stud # | Sex | Hatch Date | Sire | Dam | Location | Date | Local ID | Event | _____ WILD A28 1 М **5555** WTTD ~ Jan 2001 _____ Transfer 23 Dec 2001 I A02 Loan to 17 Apr 2002 __ A08 1 Loan to ~ Jan 2001 _____ WILD WILD A28 A08 ???? 2 М Transfer 23 Dec 2001 ____ Loan to 2

Totals: 2.0.0 (2)

All specimens together make the total living studbook population 3 single male specimens, all fit for breeding purposes. In the 2001 annual report specimen 3 was included as female. However, this specimen turned out to be a male too.

10. IMPORTS, BIRTHS AND DEATHS

In 2002, no imports, births or deaths have occurred.

11. TOTAL STUDBOOK POPULATION AND FUTURE PERSPECTIVES

The current studbook population of the studbook *H. femoralis* consists of 3 specimens, all wild-caught (rescued long-term captive animals). All three are still alive, housed at 2 locations.

Since the current three specimens appear to do very well, it is planned to obtain partners for these specimens to try to breed them in captivity, and to gather and publish information about this poorly known species. In 2002 many zoos and similar organisations in South Africa have been asked if they had surplus specimens available. Not only were no surplus specimens present, no specimens were present at all. Based on this result, it may be required to collect a small number of specimens in the wild, rather than to transfer captive animals. This idea will be developed further in 2003, and may result in a plan of how to proceed.

12. LITERATURE ABOUT HOMOPUS

Publications resulting from studbook

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Onderzoek aan landschildpadden: Waarom sponsoren? General information leaflet Homopus Research Foundation in Dutch General information sheet Homopus Research Foundation Studbook information sheet Homopus Research Foundation Caresheet Homopus areolatus in Dutch Caresheet Homopus areolatus in English Caresheet Homopus s. signatus in Dutch Caresheet Homopus s. signatus in English

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Population dynamics, behaviour and natural diet of the Namaqualand speckled padloper (Homopus s. signatus) - 2000

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Husbandry conditions and additional information per location Homopus s. signatus

The information below is an update on the information presented in appendix 1 of the previous annual report.

Location A02

Only one change has been made in comparison to the previous year: Hatchlings (< 2 years old) are now kept in enclosures that measure 75 x 50 cm, with a soil layer consisting of dry sand in one half, and moist peat in the other half. This way the tortoises can choose dry or moist sites. It appears that very young hatchlings (few weeks old) prefer the moist part of the enclosure, whereas older specimens use the entire enclosure, or even prefer the drier part. However, it will need much longer observation and quantification to determine if this preliminary finding is persistent.

Location A07

Terrarium

Terrarium 1 measures 120×60 cm. It has a sandy soil and is decorated with a pile of rocks. Illumination occurs by means of a 36 W tube light, and two 50 W halogen spots. The temperature in the enclosure is 30° C, and under the spot lights > 45°C. The photoperiod is automatically reduced to 9 hours in autumn by means of an Astrotimer time control unit. It increases the photoperiod to 13 hours in summer. Specimens 35 and 36 are housed in this enclosure (see photograph).



Terrarium 2 measures $60 \ge 27$ cm, with a soil layer consisting of sand. In this enclosure there is also a pile of stones available. The enclosure is illuminated and heated using a 50 W halogen spot, providing the same temperatures as in the first enclosure. Photoperiod is also controlled in the same way.

Feeding

Following acquisition of the adult couple, the specimens did not feed for approximately four weeks and were restless. After this period, they suddenly started feeding vigorously. The specimens are fed daily with fresh green leaves collected outside (*Taraxacum*, *Trifolium*, grasses, et cetera), but in the dry season they are fed twice weekly. Once weekly they receive salad or endive, vegetables (cucumber, zucchini, paprika), and small pieces of fruits (apple, berries, melon), enriched with a calcium and vitamin additive, Vitakalk.

Water

Once weekly a water bowl is offered to the tortoises (with no additives). In the dry season (summer) the water bowl is offered only once every two weeks, and drier food types are fed.

Climatic cycle

Upon acquisition of the animals, photoperiod was maintained at 12 hrs per day until April 2002. After this, a European (northern hemisphere) cycle was started. The soil of a planned egg-laying site was kept moist throughout the first year.

May - July: Introduction to dry season, with reduction of food and water

July - October: High temperatures and dry conditions; the specimens appear from their hiding places only once every few days

November - May: Gradually decreasing (until approximately 30°C) temperatures. Spraying of the enclosure. Water and food available. The specimens are very active.

Growth

Date	35		36		
	Mass	SCL	Mass (g)	SCL (mm)	
	(3/	(11111)	(3/	(11111)	
07-11-02	93	-	144	-	

At this point additional data are not available due to computer problems.

Reproduction

On 06-07-02 one egg ($35 \times 26 \text{ mm}$) was buried approximately 5 cm deep in sand. It was incubated at 21 - 32° C (night - day) in slightly humid lava gravel. The egg hatched on 31-10-02 (8 g, 34 mm). After hatching the specimen remained in the egg for three days. After this, the yolk sac was completely absorbed. Seven days after hatching the tortoise was housed in terrarium 2. Food was not accepted immediately.

Location A10

Specimens 6 and 10 were transferred to Frankfurt University for research purposes during most of 2002, and therefore there is not much to be reported.

Enclosure

The depth of the soil has been increased from an average of 5 to 12 cm, to allow nesting throughout the enclosure. Also a nest site was provided under a overhanging flat rock close to the halogen lamp.

Illumination

Having experienced the intensity of the South African sun this year, extra lighting will be provided by means of two 36 W tube lights.

Location A16

Both males H. s. signatus were kept under identical conditions as in the previous year (see 2001 annual report). The following minor changes were made: (1) Regular misting was provided, almost daily in spring and autumn. (2) The proportion of dried weeds in the diet has been increased, at the costs of fresh food.

The following masses were measured in the end of 2002:

Date	0011	0014	
08-12-02	63	72	

Location A25

Housing

Size enclosure 150 x 80 cm Decoration Flagstones, Mopani wood, rocks Substrate is gravel mixed with course sand ("brekerzand")

Inhabitants 1:1 H. s. signatus

Heating 1 x 120 W Philips spot 1 x 100 W halogen spot At night no heat source is provided

Additional illumination 1 x 32 W daylight tube light (Osram Lumilux plus eco)

Climate

Photoperiod

Since the specimens refused food during the first months after acquisition, the initial scheme was not successful. When they started feeding, the photoperiod was kept constant. As a result of outdoor influences in the room where the enclosure is positioned, the summer in the enclosure was nevertheless quite hot and photoperiod fluctuated.

Temperature 25 - 35°C (day) to 15 - 20°C (night)

Humidity

The crevices and the rest of the enclosure are sprayed to maintain some humidity. The soil maintains the humidity better now that sand has been added to the substrate mixture.

Feeding

Feeding has been uncomplicated after the specimens first started feeding. A standard tortoise diet is offered, including dandelion, clover, endive, chicory, banana, grape, pear, *Plantago*, and tomato. Also Heucobs (fiber rich horse food, often used for tortoises) and *Sedum* are offered.

Behaviour

Behaviour does not appear to be influenced by stress anymore. Specimens are active infrequently, and human activity in the terrarium room does not always trigger tortoise activity. The female is shyer than the male and retreats quicker.

Growth

No growth of these adult specimens was noticed in 2002, but both increased and maintained weight once they started feeding. The male weighs 89 g and the female 198 g.

Reproduction

The incubation of the egg produced in 2001 was not successful. In 2002 no additional eggs were laid and also no mating behaviour was observed.

Further information

Klerks, M. (2002). Adapting the Namaqualand speckled padloper, *Homopus signatus signatus*, to captive conditions. Turtle and Tortoise Newsletter 6: 30-32.

Location A31

Husbandry

The tortoises were kept in terraria of the following measurements:

Terrarium 1: 60 x 30 cm: Specimen 29, 31, 33, and 34 (until 09-11-02)

Terrarium 2: 100 x 40 cm, divided in two compartments: (a) 6; (b) 10, and 34 (from 09-11-02)

Terrarium 3: 100 x 40 cm: Specimen 7, 15, and 26 (from 24-06-02)

Terrarium 4: 100 x 40 cm, divided in two compartments: (a) 12; (b) 13

Terrarium 5: 80 x 40 cm, divided in two compartments: (a) 22 (until 24-06-02), and 25; (b) 26 (until 24-06-02), and 22 (from 24-06-02)

The terrariums were illuminated by means of six 36 W tube lights, each illuminating more than 1 enclosure. Each terrarium was further equipped with a 50 W halogen spotlight, providing a maximum temperature of up to 51° C. In terrarium 3, two halogen spots were installed, in terrarium 5 an additional 60 W Concentra spot was provided on 15 August. A relatively constant climate was provided. The tube lights were switched on between 08:00 - 20:00 hrs, the spotlights between 09:00 - 19:00 hrs. The temperatures inside the provided crevices fluctuated between 20.9 - 27.9°C (mean 23.1°C, 08-05-02 -15-05-02), 18.3 - 29.5°C (mean 23.1°C, 16-08-02 - 26-08-02), 17.1 - 31.1°C (mean 25.3°C, 31-08-02 - 23-09-02), and 22.5 - 30.3°C (mean 25.7°C, 24-11-02 - 28-11-02). The terraria were sprayed twice weekly until August, after that only once per week. The humidity inside the crevices fluctuated between 59.7 - 99.4% (mean 83.6%, 08-05-02 - 15-05-02), 45.7 - 97.6% (mean 71.6%, 16-08-02 - 26-08-02), 36.6 - 100% (mean 78.8%, 31-08-02 - 26-09-02), 56.6 - 95.4% (mean 79.9%, 24-11-02 - 28-11-02). The substrate of the enclosures consisted of sand. Each terrarium was decorated with at least one rock crevice (terrarium 1a, 1b and 3 had 2, terrarium 5 had 4). To accustom the animals to the metabolism experiments conducted at this location, plastic vessels (11 x 8 x 5 cm, or 13.5 x 9.5 x 4.5 cm) were provided. These plastic vessels were moved to a climatic chamber for measurements. The tortoises could not leave the vessels during the trials. Interestingly, most of the specimens preferred the plastic vessels to the more natural rock crevices.

Food consisted of fresh green leaves of *Taraxacum*, *Trifolium*, *Tussilago*, and *Plantago*. In the beginning of November these were replaced by different types of salad and endive. Food was always supplemented with calcium and vitamin mixture Vitakalk, or once a week with Davinova. Food was provided 6 days per week, except on days when the animals were used in the trials. Water was always available. Once a week it was supplemented with vitamin additive Multi-Mulsin. However, this was stopped completely after one specimen showed slight hypervitaminose A in September. The specimens that were born in 2001 were soaked 3 times weekly, and the specimens that were born in 2000 twice weekly. The soaking of specimens 26 and 25 was stopped in the beginning of October.

Growth

	SCL		CW		CD		PL				
Specimen	16-08-02	08-11-02	16-08-02	08-11-02	16-08-02	08-11-02	16-08-02	08-11-02			
6	74.8	75.4	57.3	58.1	30.0	30.1	56.1	55.7			
7	90.2	91.2	67.5	67.7	37.3	37.8	76.7	76.6			
10	72.7	73.8	58	58.8	30.6	30.5	55.8	56			
12	85.2	85.5	60.2	60.5	29.4	29.8	62.9	63.1			
13	79.5	79.7	53.7	54.3	29.3	29.1	66.0	66.0			
15	88.9	91.3	67.3	67.5	34.1	34.0	73.8	74.5			
22	67.0		51.0		25.8		52.5				
25	77.6	79.6	55.6	57.8	29.2	28.9	58.5	59.5			
26	69.7	71.2	53.6	54.6	27.9	28.0	54.3	55.8			
29	62.5		49		23.6						
31	60.4	62.7	44.1	45.6	23.2	24.2	48.3	49.4			
33	63.2	65.6	45.8	47.7	22.5	24.3	54.0	54.9			
34	62.7	66.0	47.4	49.2	23.3	24.1	52.8	54.0			

Shell dimensions (mm)

Weight (g)

	Specimen												
Date	6	10	12	13	7	15	22	25	26	29	31	33	34
27-5									51.6				
29-5										39.9	35.0	34.8	41.8
31-5							45.7	69.6	57.8				
04-06	71.2	71.1	91.3	72.6									
5-6							52.9			39.9	36.2	39.8	42.3
12-6							56.3	73.6	62.0				
18-06	72.8	74.0	89.6	71.2						40.3	36.5	40.5	44.0
19-6							56.2	76.4	58.8				
26-6										41.5	37.9	38.9	44.0

	Specin	nen											
Date	6	10	12	13	7	15	22	25	26	29	31	33	34
28-06	73.7	75.0	87.6	70.9		122.8			<i>co</i> -				
28-6								75.1	63.2	41.0	26.0	20.4	40.1
1-7 2-7							56.6	76.3	60.8	41.Z	36.0	39.4	43.1
3-7					135.8		00.0	70.0	00.0				
9-7	74.9	75.1	88.4	72.3									
12-7	74.1	76.3	85.3	69.8		126.4				41.6	37.6	41.4	41.9
13-7					122.0		60.2	75.1	59.4				
14-7	74.0	76.6	87 1	70.0	130.9								
18-7	/ 1.0	70.0	07.1	10.0		128.8							
19-7										42.7	36.3	43.4	43.5
20-7	72.2	76.0	88.4	69.6	141.4		58.9	77.3	59.0	11.0	07.0	10.4	44 5
24-7	76.6	78 7	01.0	75.6		122.8				44.2	37.8	43.4	44.5
26-7	70.0	70.7	91.0	75.0		155.6	62.2	79.3	58.5				
27-7					130.9		02.2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	00.0				
30-7	74.1	73.7	89.3	72.3						42.9	37.0	42.0	45.7
31-7	70.0	70.0	00.1	70.4		100.1	64.0	79.9	60.2				
2-8	79.2	78.0	89.1	70.4	13/11	130.1							
3-8 4-8					104.1					43.1	36.9	42.4	45.1
5-8	78.4	76.5	89.0	72.5									
17-8							54.1	79.6	61.0				
21-8	79.5	77.0	91.6	73.6		128.4					00.1	40 F	1C F
22-8	74 5	74 7	91 7	72 3	134 7		54.2	79.8	62.0		38.1	43.5	46.5
25-8	74.0	/ 4. /	51.7	72.0	104.7	133.9	54.2	75.0	02.0				
26-8					139.6						38.6	42.8	46.7
27-8	79.1	80.5	92.6	75.1	104.4	136.0							
30-8	85.1	80.4	92.0	73.1	136.6	100 6	59.1	83.0	63.5				
2-9 3-9					142.4	120.0					40.2	42.6	46.8
5-9	76.6	76.6	94.5	75.0	1 12.1						10.2	12.0	10.0
6-9						128.7	56.8	80.4	59.2				
16-9	70.1	77.0	00.0	76.0	140.0						37.8	42.1	45.7
17-9	79.1	11.2	88.2	/6.3	143.3	131 /							
25-9	80.4	72.2	96.1	77.1		101.4							
27-9								78.7	65.6				
28-9		(5.0	~ ~	-							40.7	43.4	47.3
30-9	78.6	67.3	89.7	71.6				75.5	62.0				
8-10								75.5	02.0		40.5	42.1	47.2
10-10	80.7	79.6	89.6	73.6							10.0	12.1	17.2
11-10								72.2	59.5				
14-10	01.1	70.4	01.0								41.0	45.0	48.3
16-10	81.1	/8.4	91.9	/4.7				75.2	61.4				
21-10								70.0	01.4		41.9	46.2	48.5
22-10	82.2	82.8	91.0	75.2				1					_
24-10	82.2		92.5					1					
12-11	04.0		04.6	77.0				70.0	677		43.2	48.1	49.0
13-11	04.ð		94.0	11.Z				79.Z	07.7		44 8	49 9	49.2
19-11	82.7		96.2	78.1				78.5	67.9		- T .0	77.7	77.2
20-11								1			44.5	48.8	50.5

Husbandry conditions and additional information per location Homopus areolatus

The information below is an update on the information presented in appendix 2 of the previous annual report.

Location A02

No changes in husbandry methods were made in comparison to the description in the 2001 annual report.

Location A16

All *H. areolatus* were kept under identical conditions as in the previous year (see 2001 annual report). The following minor changes were made: (1) Regular misting was provided, almost daily in spring and autumn, and (2) The proportion of dried weeds in the diet has been increased, at the expense of fresh food.

Reproduction

The 2 eggs that were laid on 06-11-01 did not hatch. One of the eggs failed to develop, and in the other egg, there was a fully developed dead tortoise. Because it was opened late, the dead tortoises was severly decomposed and was flushed down the toilet in a very unprofessional way.

See chapter 7 for information about 2002 breeding results. Three eggs were produced on 29-06-02. Two eggs hatched after 107 (5 g) and 117 (3 g) days, the third egg failed to develop.



Eggs were incubated at $26/32^{\circ}$ C in a 12/12 hour cycle. Eggs were placed in vermiculite that was moistened in a ratio of one part vermiculite and three parts of water. A small amount of water was added

after about 90 days. The adult female showed a lot of digging behaviour in October and November 2002, but did not produce a second clutch. Captive-bred specimen 18 was found to be a male, as it showed interest in the adult female when they were temporarily placed together, and the adult male responded very aggressively towards this specimen.

Date	Male	Female	Juvenile 18	Juvenile 34	Juvenile 35
08-12-02	115	203	68	24	19

Husbandry conditions and additional information per location Homopus femoralis

Location A02

Male number 3 is kept at similar conditions as H. s. signatus at location A02 (see previous annual reports, and publications in chapter 12). This is accomplished in a 150 x 50 cm enclosure, heated and illuminated by two 40 W spot lights and one 36 W tube light. As is the case for H. s. signatus, the enclosure has a soil layer that consists of fine gravel. The only difference is the spraying regime. Homopus femoralis is offered summer rainfall. This has resulted in high activity in summer, and hardly any activity (in spite of fairly high temperatures and available food and water) in winter.

An interesting observation is that the 3 males in the studbook showed aggression towards each other after they had been separated for some time. At their previous location (Tortoise Trust) they were housed together and did not show any aggression.



Financial report Homopus Research Foundation

The financial overview has been removed from this internet version of the annual report. It can be requested from the Homopus Research Foundation.

Example agreement HRF and studbook participants



Version 3, 14 January 2003



Introduction

The studbooks under auspices of the Homopus Research Foundation have entirely or partially (depending on the species) been set up with tortoises obtained from southern African organisations or collected in the wild, permitted by the local governments. The exporting permits provided contain a number of conditions and in the case of permits issued by Northern Cape Nature Conservation (South Africa), an agreement between the latter organisation and the Homopus Research Foundation has been drawn up. In all cases, the main conditions are that specimens and their offspring may not be used for commercial purposes, should remain registered in the studbook and the permit issuing organisation should be informed on developments with regard to the specimens. Since the very beginning, the *Homopus* studbooks have been set up as strictly non-commercial activities and annually studbook reports are drawn up to inform others.

The studbooks are growing and becoming increasingly difficult to manage with so many locations in different countries. At the same time, the Homopus Research Foundation wishes to meet all permit conditions and agreements. This makes it important to translate these into an internal agreement. If the foundation fails to meet the conditions and agreements, this might result in denial of any future permits. All studbook participants are supposed to take their responsibility not to carry out any activities that might harm the interests of the Homopus Research Foundation.

The following summarises the most important do's and don'ts. Adding your name, signature and date indicates that you agree with the conditions to participate in the studbooks supervised by the Homopus Research Foundation.

Agreement

I agree with the following:

All specimens:

- Tortoises in the studbook may not be used for any commercial purposes
- All genetically related offspring should be registered in the studbook
- · Changes in the studbook data (births, deaths, transfers) should be send to the board of the foundation immediately
- Some brief information on husbandry and breeding should be send to the board annually on request

Specimens property of the Homopus Research Foundation (currently all Homopus s. signatus, except the US population):

- Tortoises and all genetically related offspring remain property of the foundation, the board will act as a formal owner
- Keepers must register all other specimens of the same species (if they keep those) if they also keep studbook animals
 Directions from the board of the foundation regarding (re)combinations of specimens, transfers and whether or not to breed
- with specific specimens, must be followed Note: In all cases it will be attempted to reach a decision in good harmony by discussing the issue
- In case a participant wishes to stop keeping tortoises, the foundation should be given a reasonable period of time to find alternative locations for the tortoises
- Deviations from these conditions are only possible with explicit consent of the board of the Homopus Research Foundation

Name:

Signature:

Date:

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