

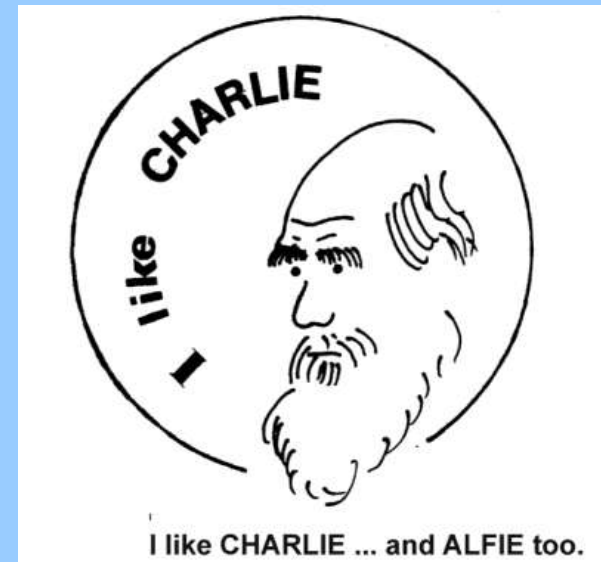
kje je rdeča nit ?

S preboldskimi jamarji na otočje **Galapagos**
nekaj podob v spominjanje
huda zmota z jamsko kozico

tudi **Filipini** so zanimivo otočje
jamske rakovice namesto galapaških ščinkavcev
in še kaj z Bohola

~~tudi jezero je nekakšen otok
lepi **Fuxian Hu**, Yunnan, Kitajska
ribje dobrote, specializacija postranic~~

~~Kaj pa Dinarski kras kot 'Galapagos'?~~











februarja 1809





1831, 22 let





A watercolour by HMS Beagle's draughtsman, Conrad Martens. Painted during the survey of Tierra del Fuego, it depicts native Fuegians hailing the *Beagle*.





Lonely George





(internet)

Opuntia echios
Conolophus sp.





(internet)



***Scalesia* (Asteraceae)**

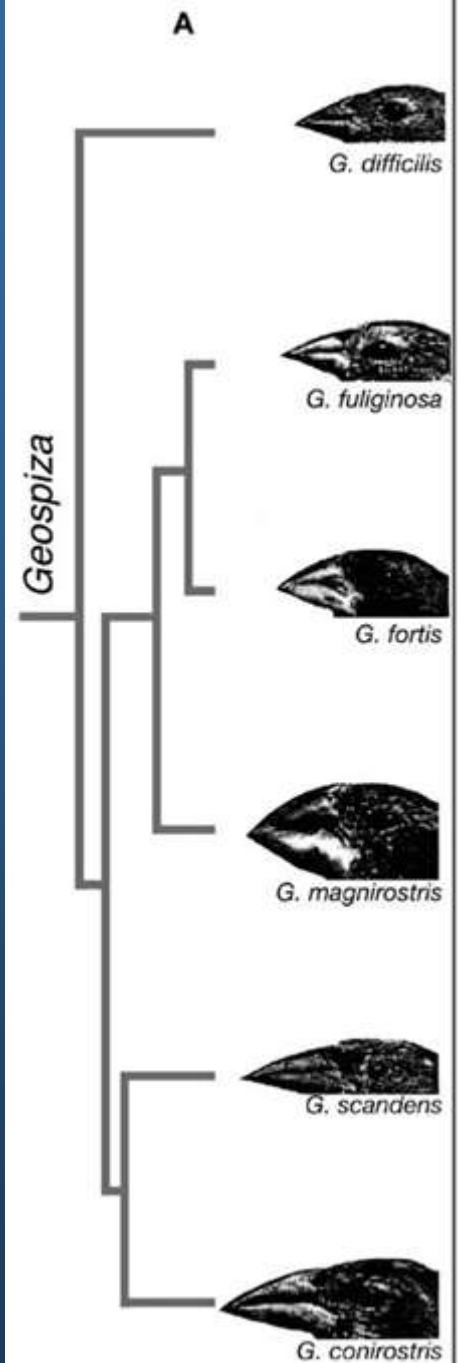
lechoso

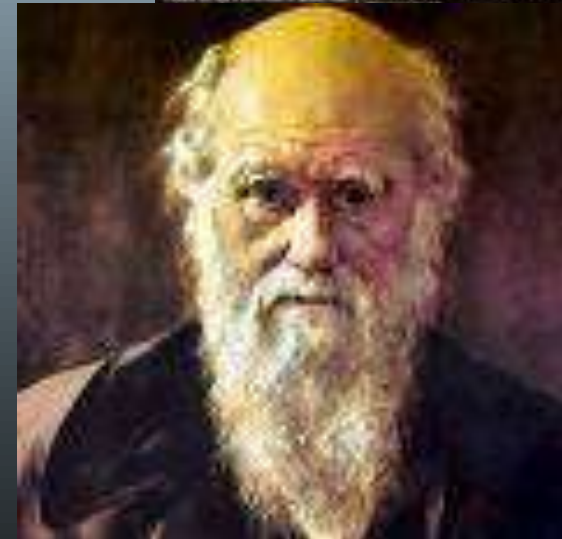
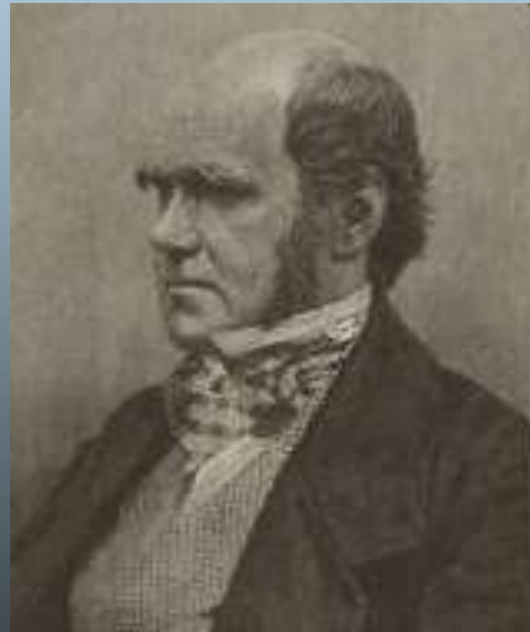
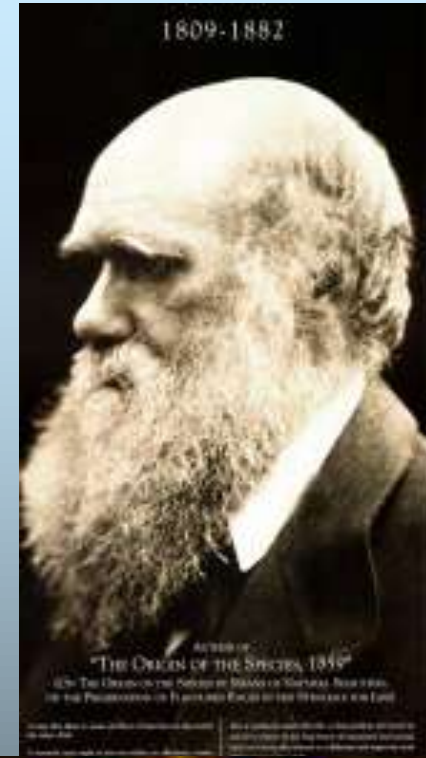
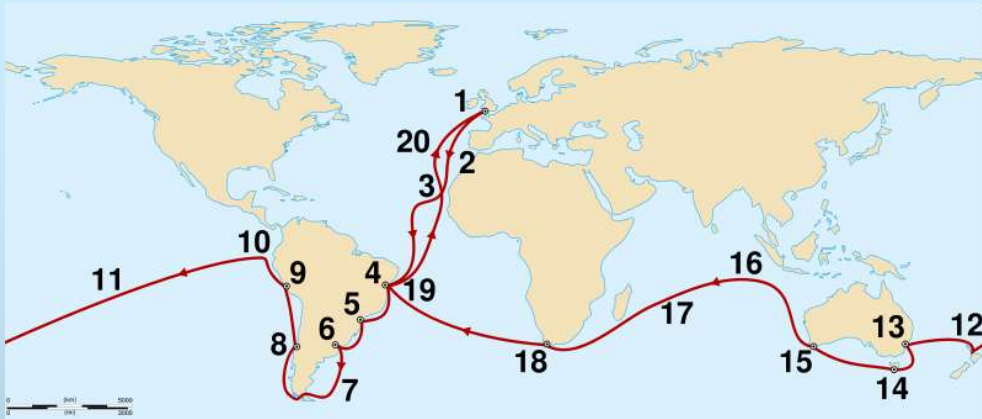
endemem rod

15 vrst



The different beak shapes of these Galapagos Finches helped inspire Darwin's theory of evolution. The beak of the *G. difficilis* (top), also known as the '**vampire finch**,' was sharp enough for the bird to peck a seabird and drink its blood. Later beak modifications helped, for example, *G. magnirostris* (middle) to **crack open seeds**, and *G. conirostris* (bottom) to **eat cactus flowers**. A 2004 study suggests that a change in when and how intensely the **gene Bmp4** is turned on can account for all the beak differences. The right-hand column shows the underlying structure of each beak and highlights the activity of Bmp4; the gene is most active in *magnirostris* and least in *difficilis*, *fuliginosa* and *scandens*. (Source: Arhat Abzhanov/Harvard Medical School)





OSNOVE:

- hiperprodukcija
- omejenost virov
- boj za obstanek



in
2009

2009 **Darwinovo leto**

I think

"I think"

Darwinov rokopis (1837)
angl. mislim, razmišljam

1809 **200-letnica rojstva**

1859 **150-letnica izida knjige
O izvoru vrst z naravnim izborom**

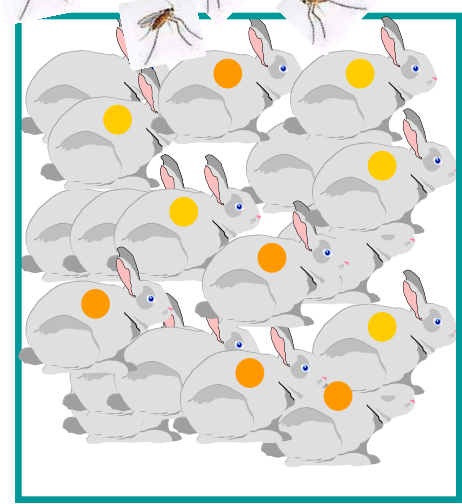
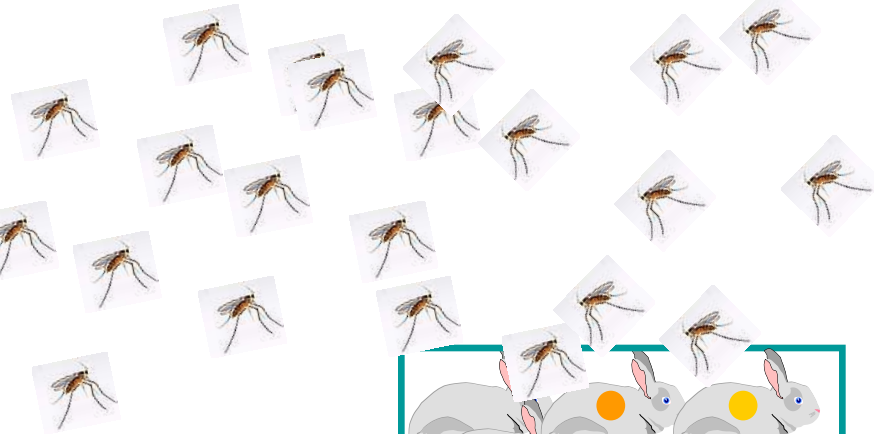
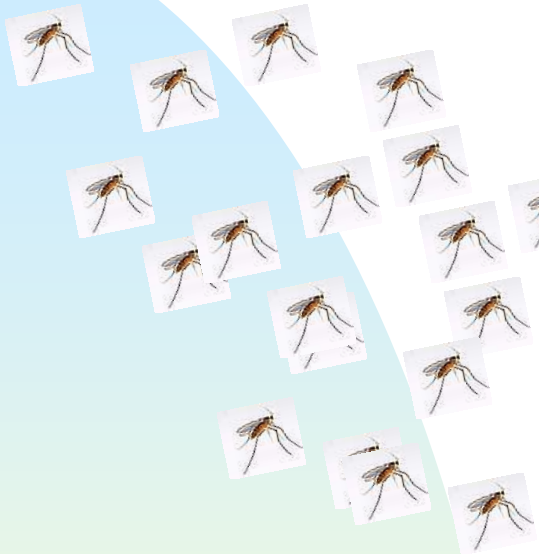
<http://dbs.biologija.org/darwin/>

OSNOVE:

- čezmerno razmnoževanje
- omejenost virov
- dedna raznolikost
- boj za obstanek

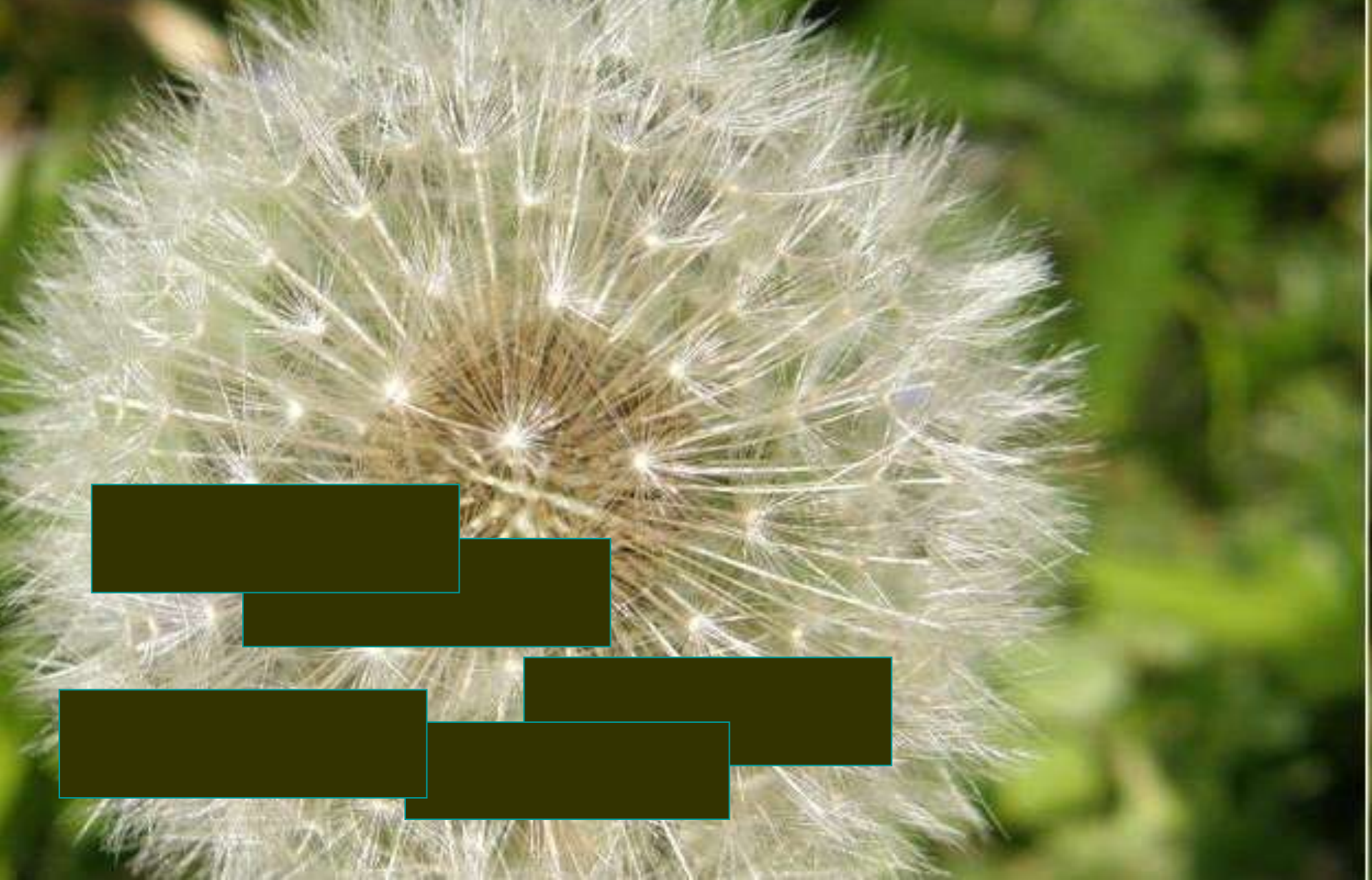
čezmerno
razmnoževanje

omejena
nosilnost okolja



**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**



čezmerno
razmnoževanje

omejena
nosilnost okolja

omejitev
preživetja

[Redacted]

[Redacted]

[Redacted]

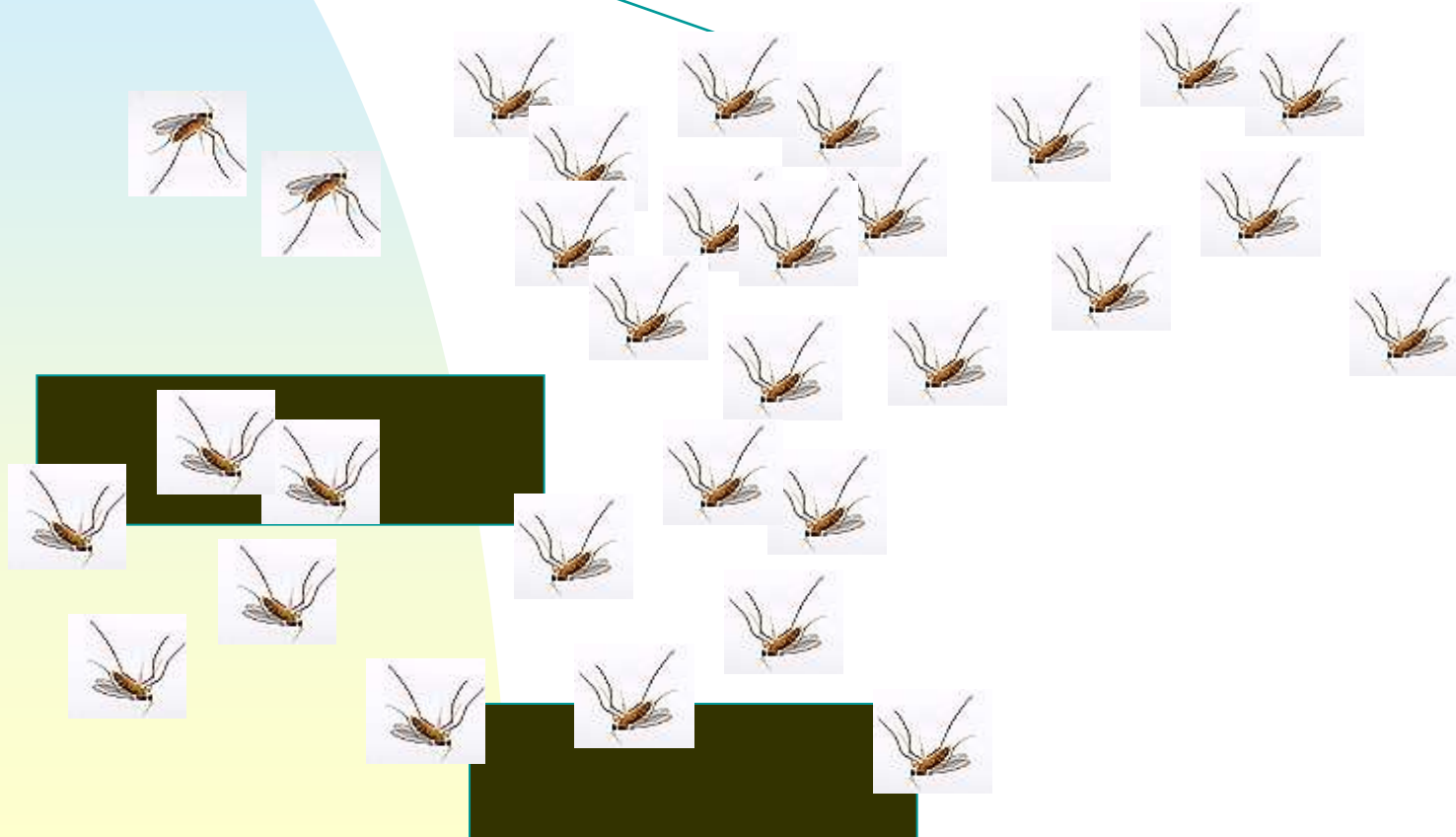
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**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**

**omejitev
preživetja**

**mehanizmi
samoohr. & ohr. vrste**

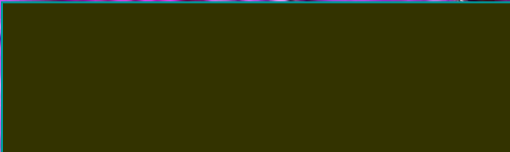


čezmerno
razmnoževanje

omejena
nosilnost okolja

omejitev
preživetja

mehanizmi
samoohr. & ohr. vrste



**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**

**omejitev
preživetja**

**mehanizmi
samoohr. & ohr. vrste**

**boj za preživetje
in reprodukcijo**



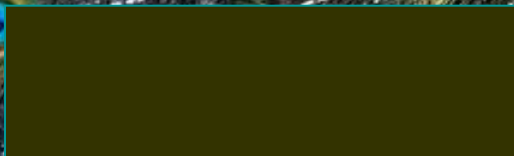
**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**

**omejitev
preživetja**

**mehanizmi
samoohr. & ohr. vrste**

**boj za preživetje
in reprodukcijo**



**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**

**omejitev
preživetja**

**mehanizmi
samoohr. & ohr. vrste**

**boj za preživetje
in množitev**

**spremenljivost
raznolikost**

[redacted]

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[redacted]

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čezmerno
razmnoževanje

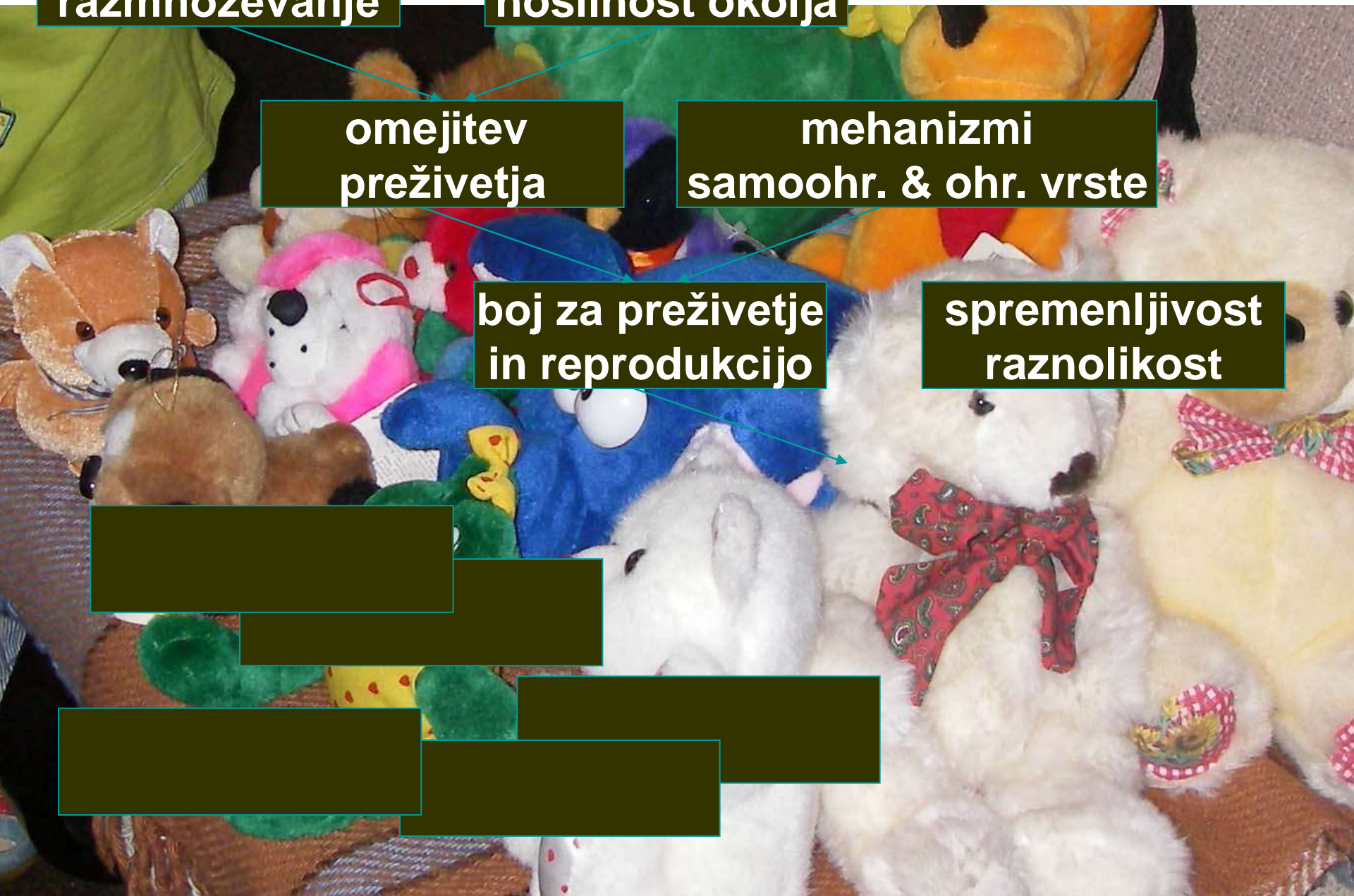
omejena
nosilnost okolja

omejitev
preživetja

mehanizmi
samoohr. & ohr. vrste

boj za preživetje
in reprodukcijo

spremenljivost
raznolikost



**čezmerno
razmnoževanje**

**omejena
nosilnost okolja**

**omejitev
preživetja**

**mehanizmi
samoohr. & ohr. vrste**

**boj za preživetje
in reprodukcijo**

**variabilnost,
raznolikost**

**diferencialno
preživ. & reprod.**

[Redacted]

[Redacted]

[Redacted]

[Redacted]

čezmerno
razmnoževanje

omejena
nosilnost okolja

*prilagajanje je lahko
specialno in/ali univerzalno
(posebno – splošno)

omejitev
preživetja

mehanizmi
noohr. & ohr. vr

oj za preživetje
in reprodukcije

variabilnost,
polimorfizem

diferencialno
preživ. & reprod.

dednost

in to je
naravni izbor,
naravna selekcija

nabiranje 'boljših'
lastnosti
>
prilagajanje

in to je
evolucija*

..... je človek res narejen po
intelligentnem načrtu?

(nihče bi ne bil ponosen na
tako pomankljiv izdelek)¹



I like CHARLIE ... and ALFIE too.

Galapagos

1835 HMS Beagle, Darwin

1978 Črni galeb

Larus fuliginosus Gould, 1841

breeds only in the **Galápagos Islands, Ecuador.**
... in the archipelago to give an estimate of 300-400 pairs.

Identification 53 cm. Unmistakable, all-dark gull.

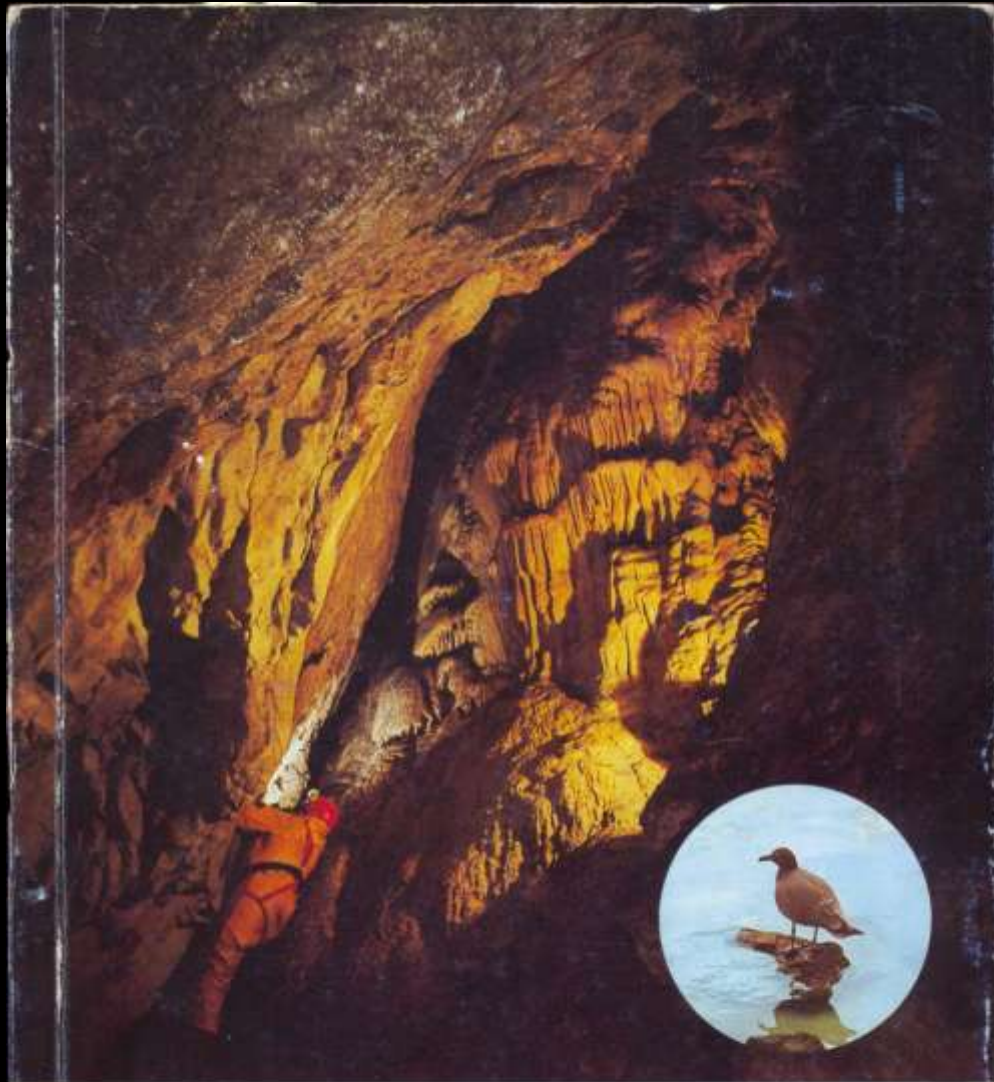


Typhlatya

f. Iliffe





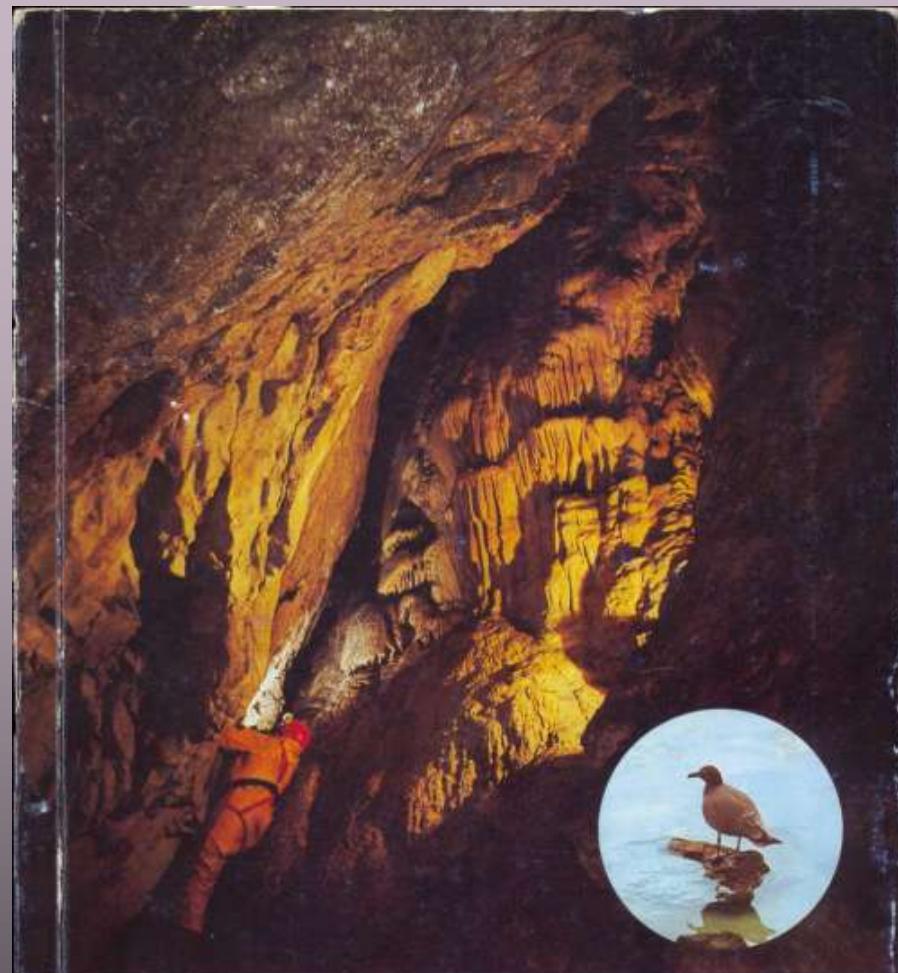


naše jame

Posebna izdaja-supplementum
Prebold, YU 1979

10~letnica
jamarskega kluba
„ČRNI GALEB” iz
Prebolda

I. JUGOSLOVANSKA JAMARSKA
ODPRAVA V EKVADOR '78



naše jame

Posebna izdaja-supplementum
Prebold, YU 1979

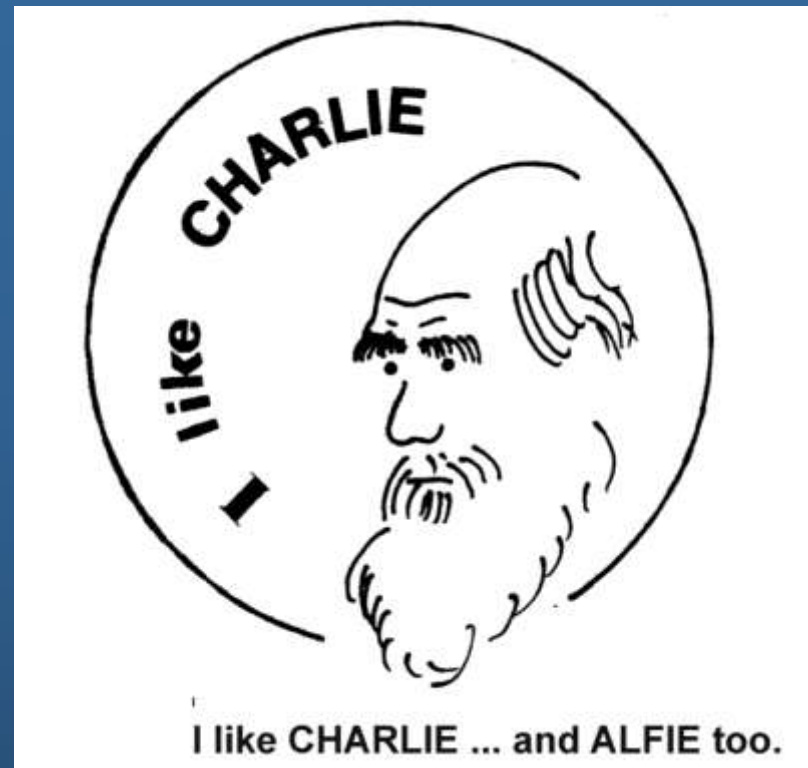
10-letnica
jamarskega kluba
„ČRNI GALEB“ iz
Prebolda

I. JUGOSLOVANSKA JAMARSKA
ODPRAVA V EKVADOR '78

Galapagos

1835 HMS Beagle, Darwin

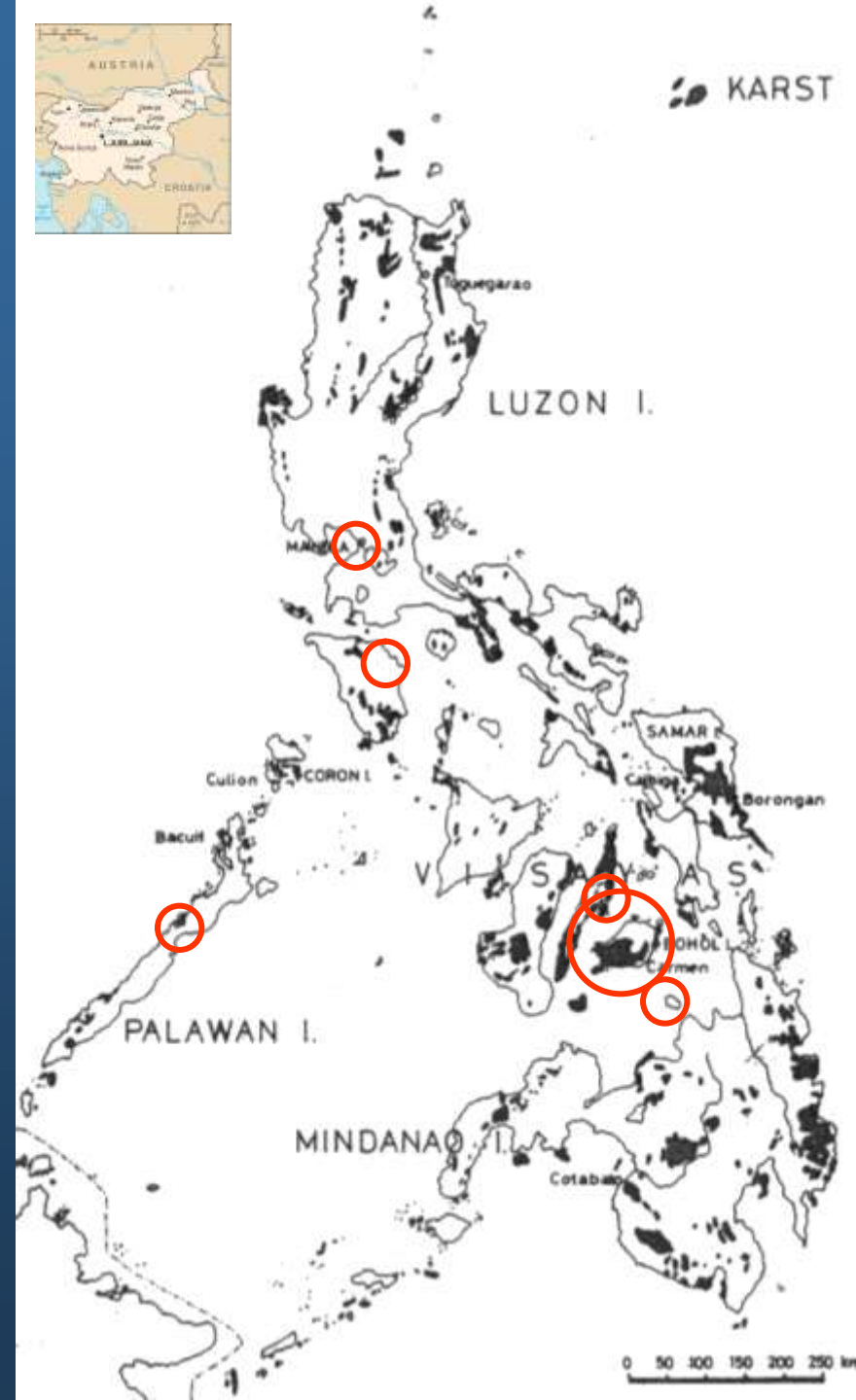
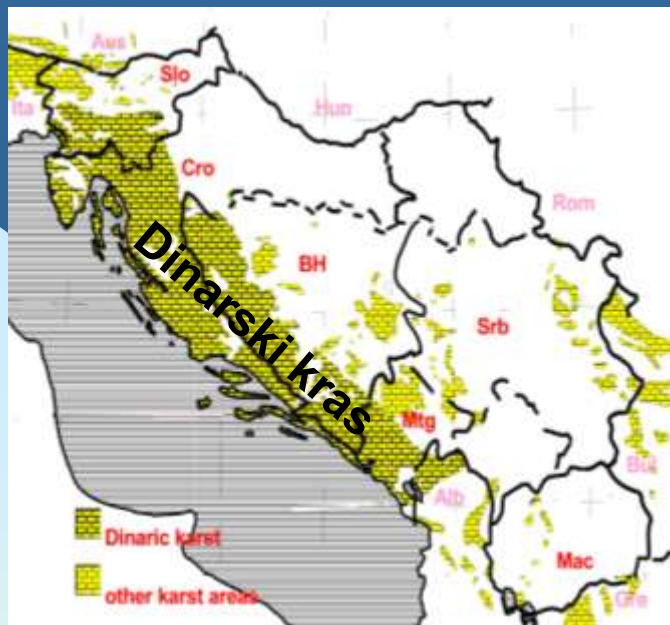
1978 Črni galeb



Veliki Darwin in moj majčkeni
'Galapagos'

in tudi naš

majčken po pomenu

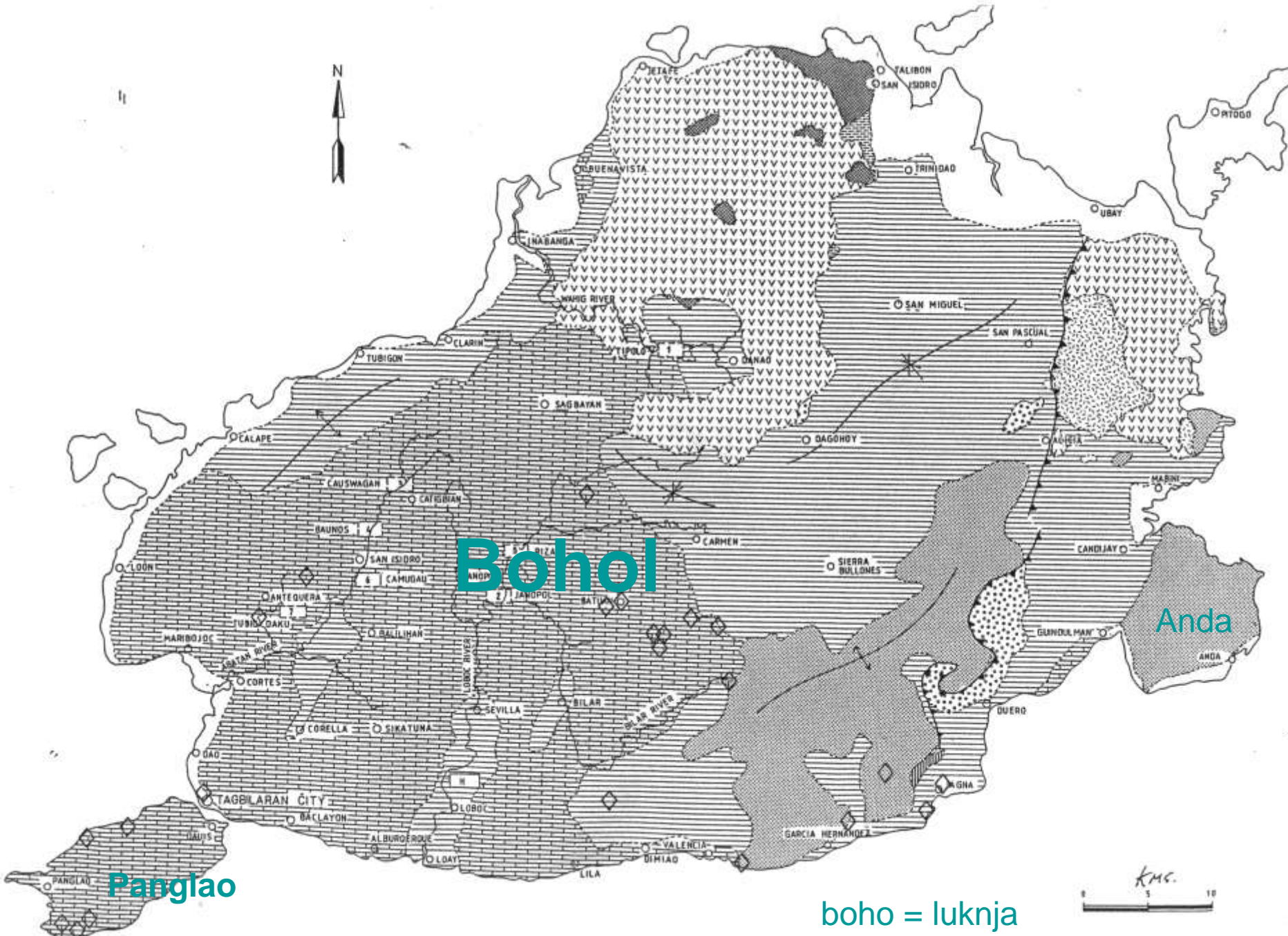


Bohol, Filipini:
 1995
 1999
 2008

Črni galeb

Bohol





Bohol

Anda

Panglao

boho = luknja





www.lucidebelkova.com



www.lucidebelkova.com

nartničar *Tarsius*







površinska



površinska iz jame



trogломorfni
vrsti



rakovice

Sundathelphusa spp. Bohol, Filipini

The freshwater crab fauna (Crustacea: Decapoda: Brachyura) of the Philippines. IV. On a collection of Parathelphusidae from Bohol

Peter K. L. Ng and Boris Sket

(PKLN) School of Biology, National University of Singapore, Kent Ridge, Singapore 119260, Republic of Singapore; (BS) Department of Biology, University of Ljubljana, University of Ljubljana, pp 95, Vecna pot 111, 6111 Ljubljana, Slovenia

Abstract.—Five species of freshwater crabs of the genus *Sundathelphusa* are recognised from the island of Bohol in the Philippines: *S. cavernicola* (Takeda, 1983), and four new species, *S. boex*, *S. sottoae*, *S. urichi* and *S. vedeniki*. Specimens from Bohol previously referred to *S. philippina* (von Martens, 1868) belong to *S. boex*, and those identified as *S. cavernicola* belong to two separate species.

The freshwater crab fauna of the Philippines is one of exceptional diversity, although this is not apparent from the number of described species. In recent years, Ng & Takeda (1992a, 1992b, 1993a, 1993b) have been involved in a systematic revision of this fauna based on extensive collections made by staff of the National Science Museum (Tokyo) and the National Museum of the Philippines (Manila). The revision of the two largest genera, *Sundathelphusa* Bott, 1969, and *Archipelothelphusa* Bott, 1969, is now in progress.

In February 1995, the Slovene Caving Association launched two caving expeditions to Asia: to Guizhou, China (Trontelj 1996, Ng & Trontelj 1996), and the Philippines (Sket 1995). Altogether, the expedition team investigated about 30 caves in Pleistocene to Miocene aged limestone. The Philippine island of Bohol in particular, harbours one of the largest continuous karst areas in the Philippine archipelago (Balasz 1973), and because of this, exploration efforts were centered there. Studies of the collections made show that Bohol has a rich freshwater crab fauna.

Few cavernicolous crabs are known from the Philippines. Takeda (1983) described a new troglitic species, *Archipelothelphusa cavernicola*, from caves in Bohol, and Ng

(1991) reported *Archipelothelphusa lopes* Balss, 1937, from Bautakay Cr Luzon. A total of four species of freshwater crabs of the family Parathelphusidae collected by the present expedition, undescribed. Of these, three are epigean troglitic species while one epigean species makes occasional forays into

Only two true freshwater species have been reported from Bohol thus far: *thelphusa philippina* (von Martens, 1868) and *Archipelothelphusa cavernicola*, 1983 (Bott 1970, Takeda 1983). Previous collections, however, are not the discovery of new taxa is indicated.

In view of the good series of specimens available from Bohol, the nature of the fauna (all the species more closely related to each other in the Philippines) and the unusual habits of the species, it would be useful to do this in a single paper.

The generic system used here is that of Bott (1970) for the Southern Hemisphere, which is problematic. *Sundathelphusa* and *Archipelothelphusa* are very close that there seems to be no clear character for separating them. As in the case of *Sundathelphusa* and *Archipelothelphusa* were

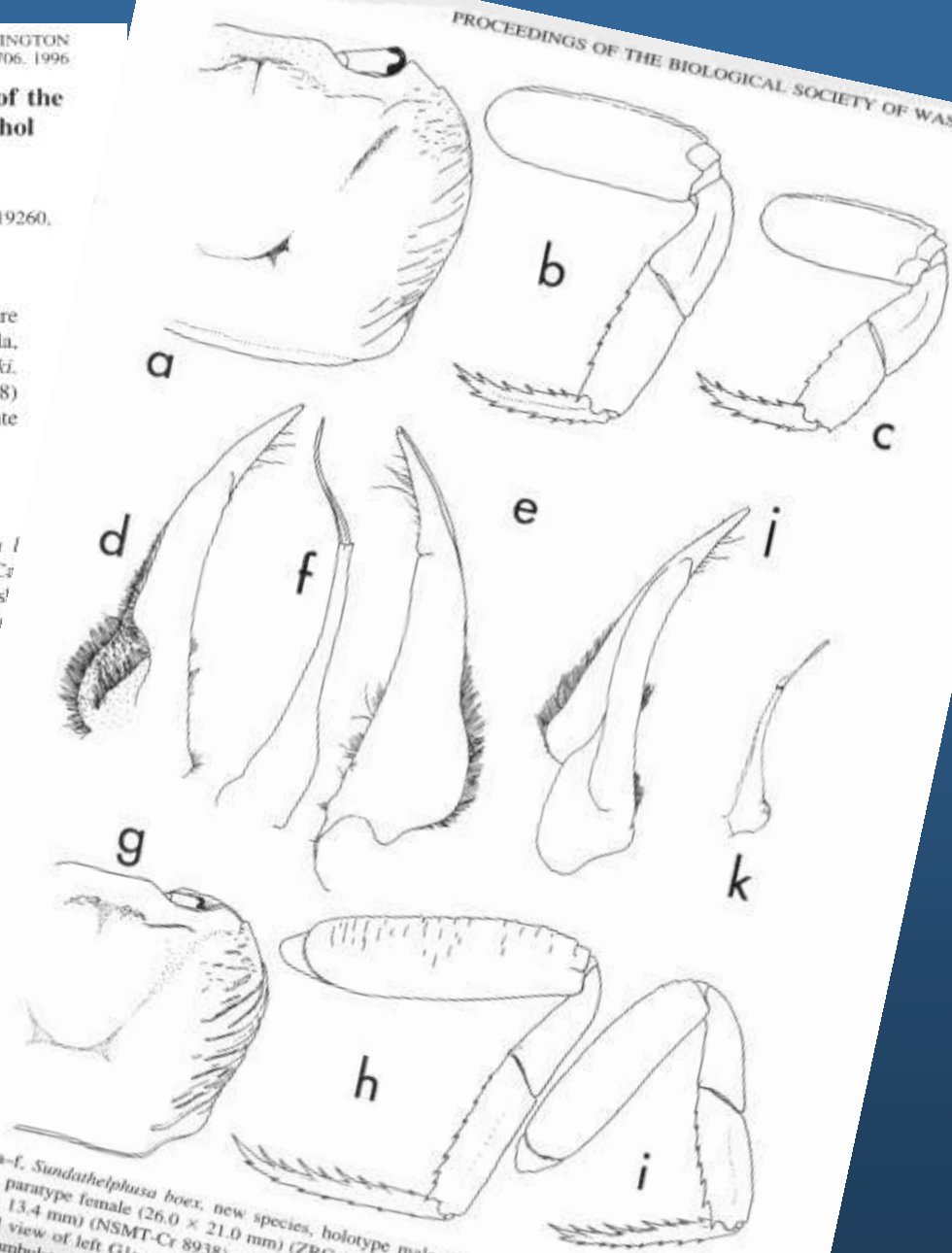


Fig. 2. a-f, *Sundathelphusa boex*, new species, holotype male (37.4 × 30.9 mm) (NMCR); g, *S. sottoae*, new species, holotype male (26.0 × 21.0 mm) (ZRC 1996.1553); h-k, *S. sottoae*, new species, holotype male (17.3 × 13.4 mm) (NSMT-Cr 8938). a, carapace; b, right third ambulatory leg; c, right fourth ambulatory leg; d, ventral view of left G1; e, dorsal view of left G1; f, left G2; g, carapace; h, right third ambulatory leg; i, left G2; j, ventral view of left G1; k, left G2 (after Takeda, 1983) (different scale).

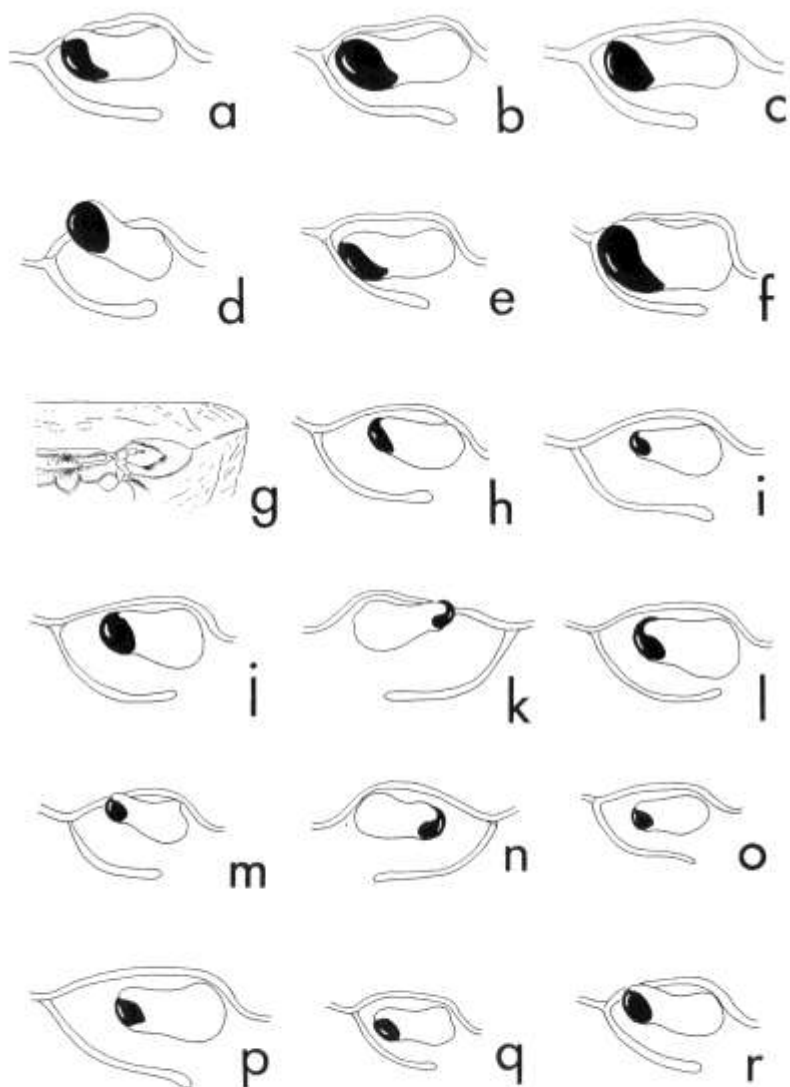


Fig. 4. Orbits and eyes of *Sundathelphusa* species from Bohol. a-f, *S. boex*: a, holotype male (37.4 × 30.9 mm, Sierra Bulliones, NMCR); b, male (24.0 × 20.1 mm, Pahangong Talon, ULB); c, paratype male (41.0 × 33.0 mm, Batuan, ZRC 1996.1549); d, paratype male (34.2 × 27.8 mm, Castigio Cave, ZRC 1996.1550); e, male (34.6 × 28.8 mm, Batuan, NMCR); f, male (10.2 × 8.7 mm, Carmulaon, ULB). g, *S. cavernicola*: holotype female (25.7 by 21.0 mm, Quinapon-an Cave, NSMT-Cr 8937) (after Takeda, 1983: Fig. 2). h-l, *S. sottoae*: h, holotype male (17.3 × 13.4 mm, Ughob Cave, NSMT-Cr 8938); i, paratype female (26.0 × 21.0 mm, Bonugan Cave, ZRC 1996.1553); j, male (17.4 × 13.8 mm, Batuan, ZRC 1996.1548); k, paratype female (28.0 × 25.0 mm, Bonugan Cave, NMCR); l, male (14.8 × 12.5 mm, Kalumpan, ULB). m-p, *S. urichi* (Quilas Cave): m, holotype male (36.6 × 27.9 mm, NMCR); n, paratype male (16.5 × 20.5 mm, ULB); o, paratype male (21.6 × 15.5 mm, ZRC 1996.1555); p, paratype female (32.6 × 25.0 mm, ZRC 1996.1556). q-r, *S. vedeniki* (Boho sa Bikahan): q, holotype male (28.2 × 22.3 mm, NMCR); r, paratype male (33.9 × 26.5 mm, ZRC 1996.1552).

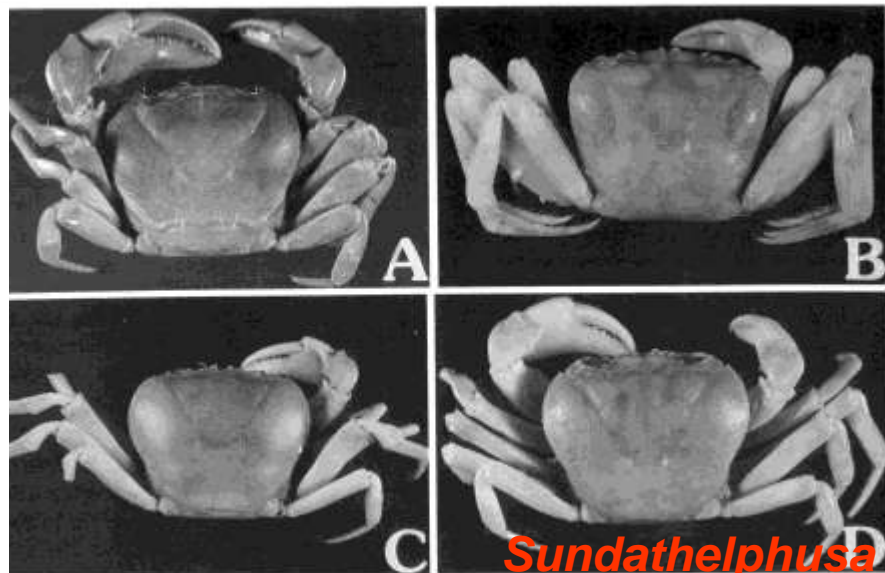


Fig. 5. Dorsal views of new *Sundathelphusa* species. A, *S. boex*, holotype male (37.4 × 30.9 mm) (NMCR); B, *S. sottoae*, holotype male (17.3 × 13.4 mm) (NSMT-Cr 8938); C, *S. urichi*, holotype male (36.6 × 27.9 mm) (CR); D, *S. vedeniki*, holotype male (28.2 by 22.3 mm) (NMCR).

Sundathelphusa
vedeniki

ippina differs markedly in having a e inflated and proportionately broader ppace, as well as the differently strud- anterolateral margin and GI. The first ior has examined the types of *Sunda- phusa philippina* in the Berlin Museum. *dathelphusa philippina* is known for ain only from the islands of Leyte, Cebu Samar (PKLN, pers. obs.).

undathelphusa boex was found in sur- waters as well as in caves. Both caves re the crabs were found are rich in oric nutrients. Castigio Cave is inside a gote ("chocolate hill") and has a very amount of plant debris. Carmulaon e is a vertical cave receiving waters n nearby rice fields. All specimens are ally pigmented. The eyestalks of adults e subequally thick both distally and proxlly, while in juveniles the distal part is proportionately broader.

ymology.—The species name is de- d from the acronym B.O.E.X. (Bohol ol- lers' Endangered Crabs) whose members

acted as the Philippine component of the expedition. The name is used here as a noun in apposition.

Sundathelphusa cavernicola
(Takeda, 1983)
Fig. 4g

Archipelothelphusa cavernicola Takeda, 1983:169 (part).

Material examined.—Holotype female (25.7 × 21.0 mm) (NSMT-Cr 8937), muddy bottom on subterranean stream, 20–30 cm deep, about 300 m from entrance to east branch of Quinapon-an Cave, Antequera, 09°49'38"N, 123°54'10"E, Bohol, leg. S. I. Ueno, 4 Mar 1983.

Description.—Dorsal surface of carapace gently convex; anterolateral regions gently rugose; posterolateral regions covered with oblique striae; cervical grooves distinct but relatively shallow; epigastric cristae low; rugose, not confluent with low postorbital cristae; postorbital cristae interrupted me-



Decapoda:
Brachyura

*Sundathelphusa
cavernicola*
Bohol, Filipini





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Potni list
Passport - Passeport

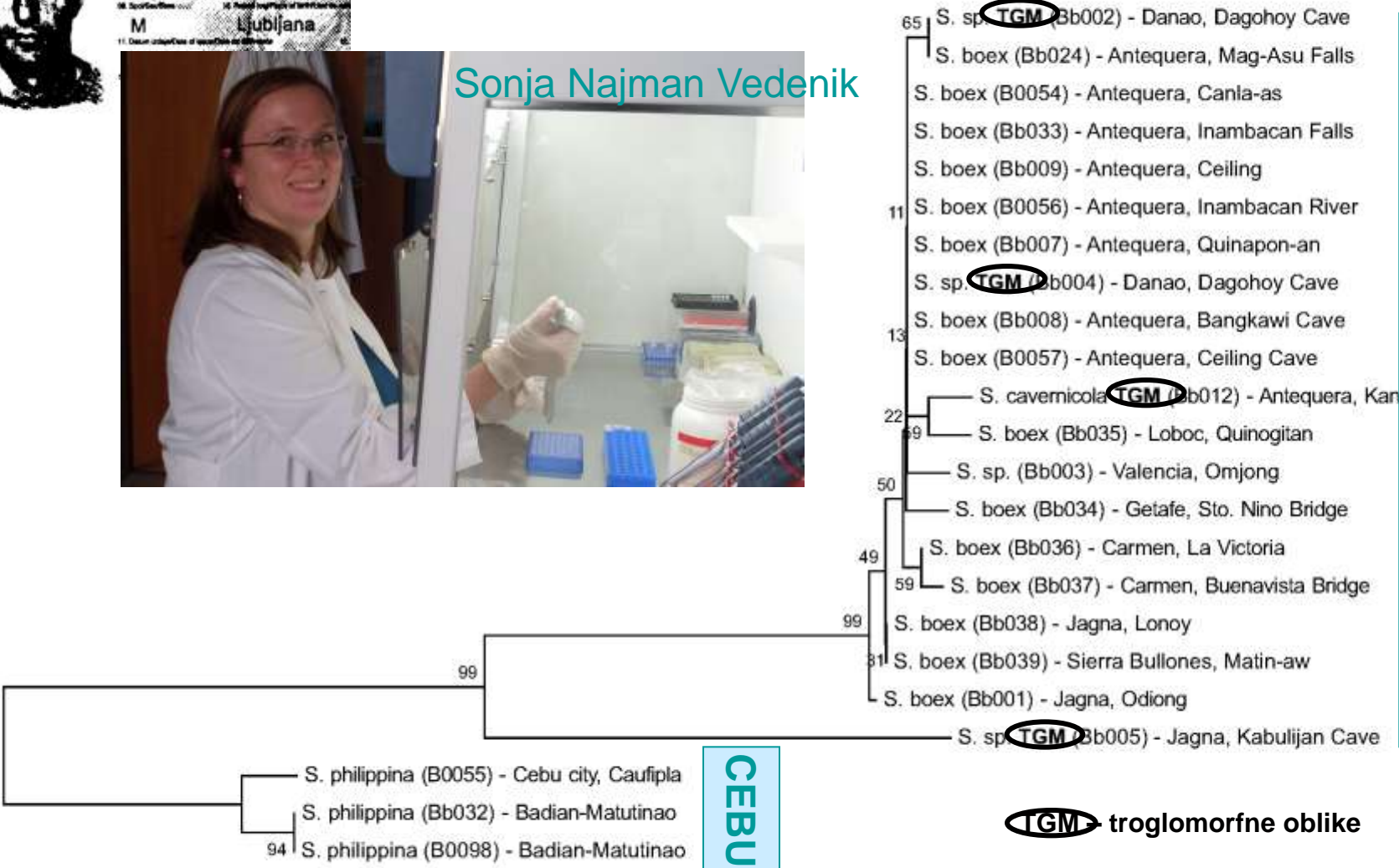
REPUBLIKA SLOVENIJA

01. Tip/Type: P
 02. Roda/Code/Code: SVN
 04. Prejeto/Surname/Prejeto: Trontelj
 05. Ime/Given name/Ime: Peter
 06. Odstrepanje/Place of birth/Place of birth: Slovenije
 07. Datum izdaje/Date of issue/Date of issue: 27.12.1967
 08. Datum potovanja/Date of validity/Date of validity: M
 09. Mesto izdaje/Place of issue/Place of issue: Ljubljana



Sonja Najman Vedenik

COI



BOHOL

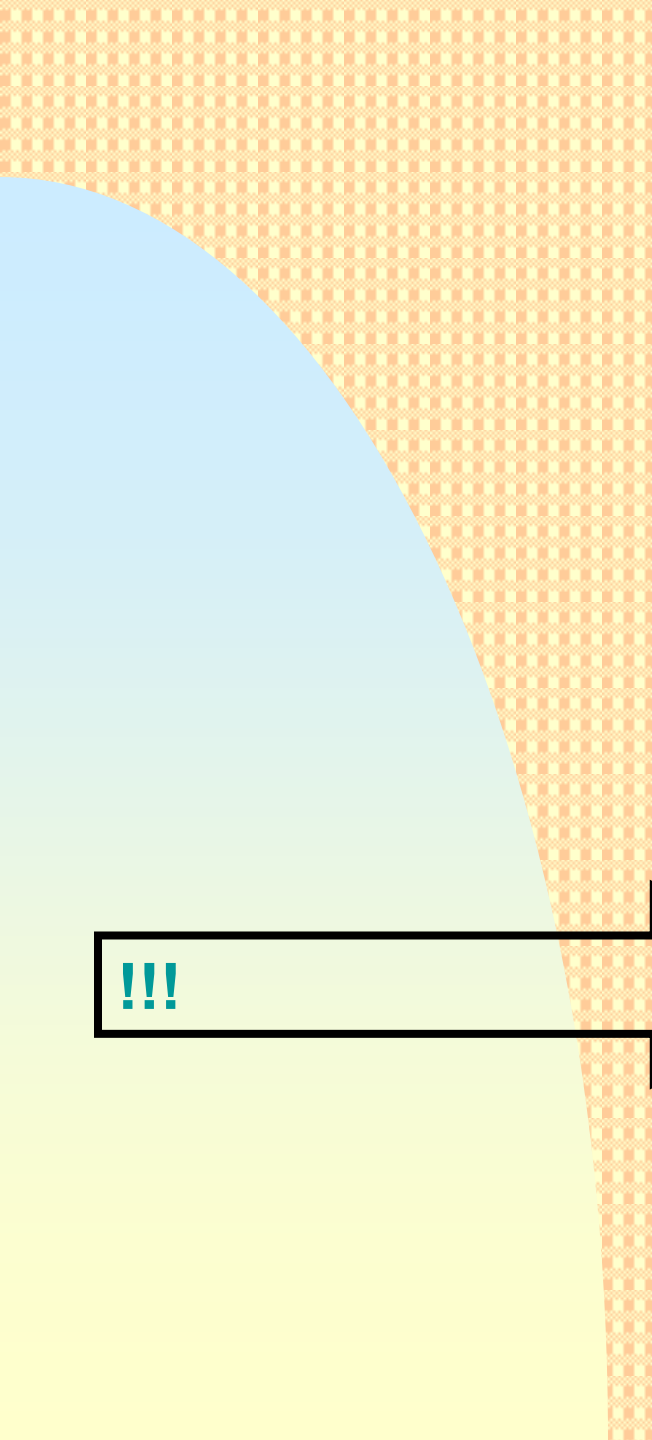
CEBU

(TGM) troglomorfne oblike

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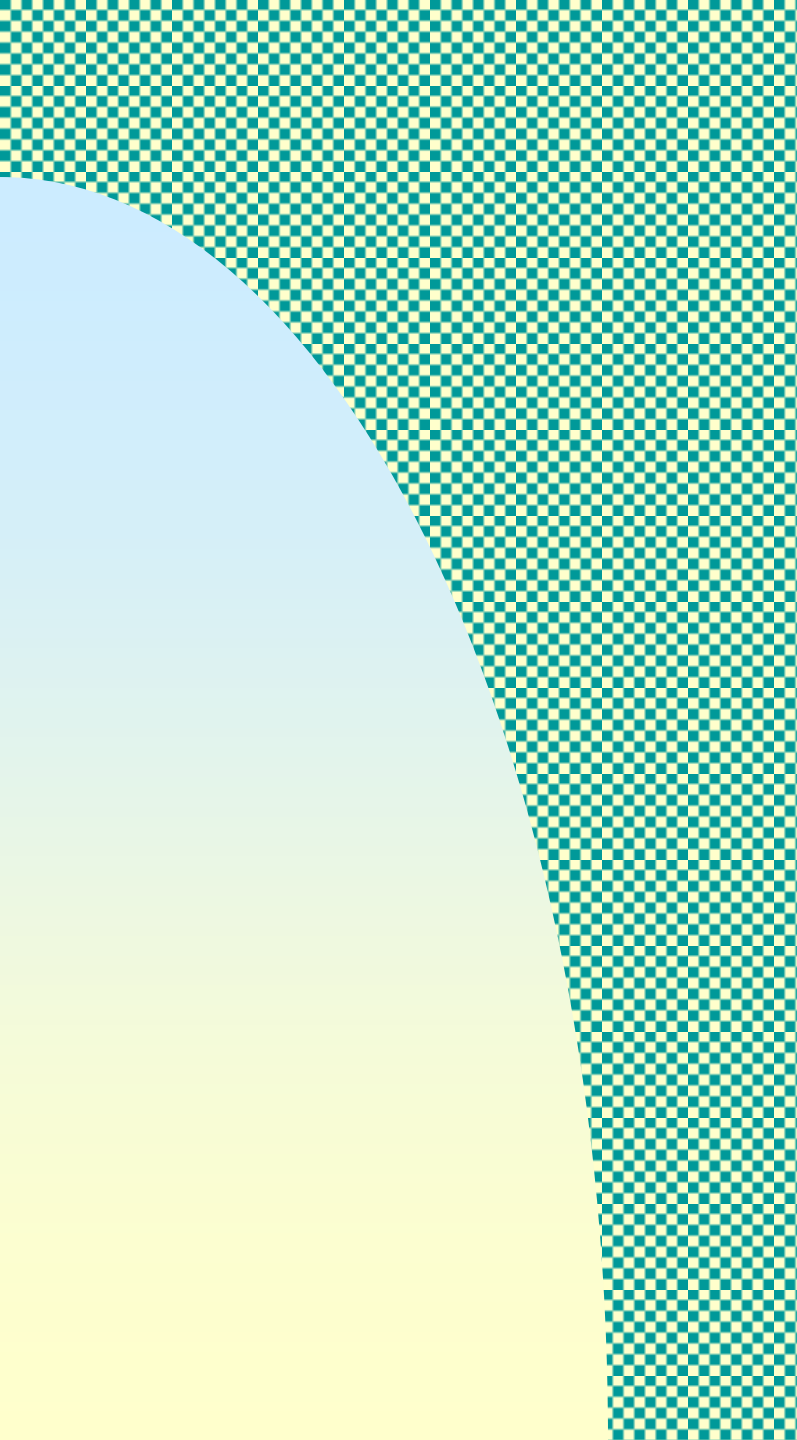
2008 !





!!!







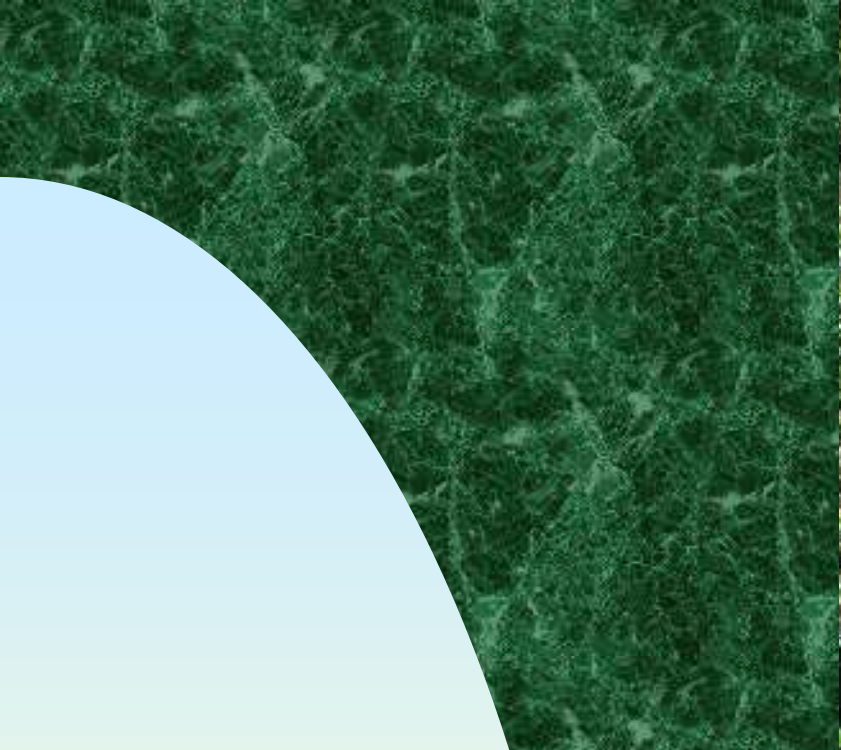






**Gil Madronero Jr.
(Jun-G)**





Andreja

Rok



(sinova dveh z Galapagosa 1978...)







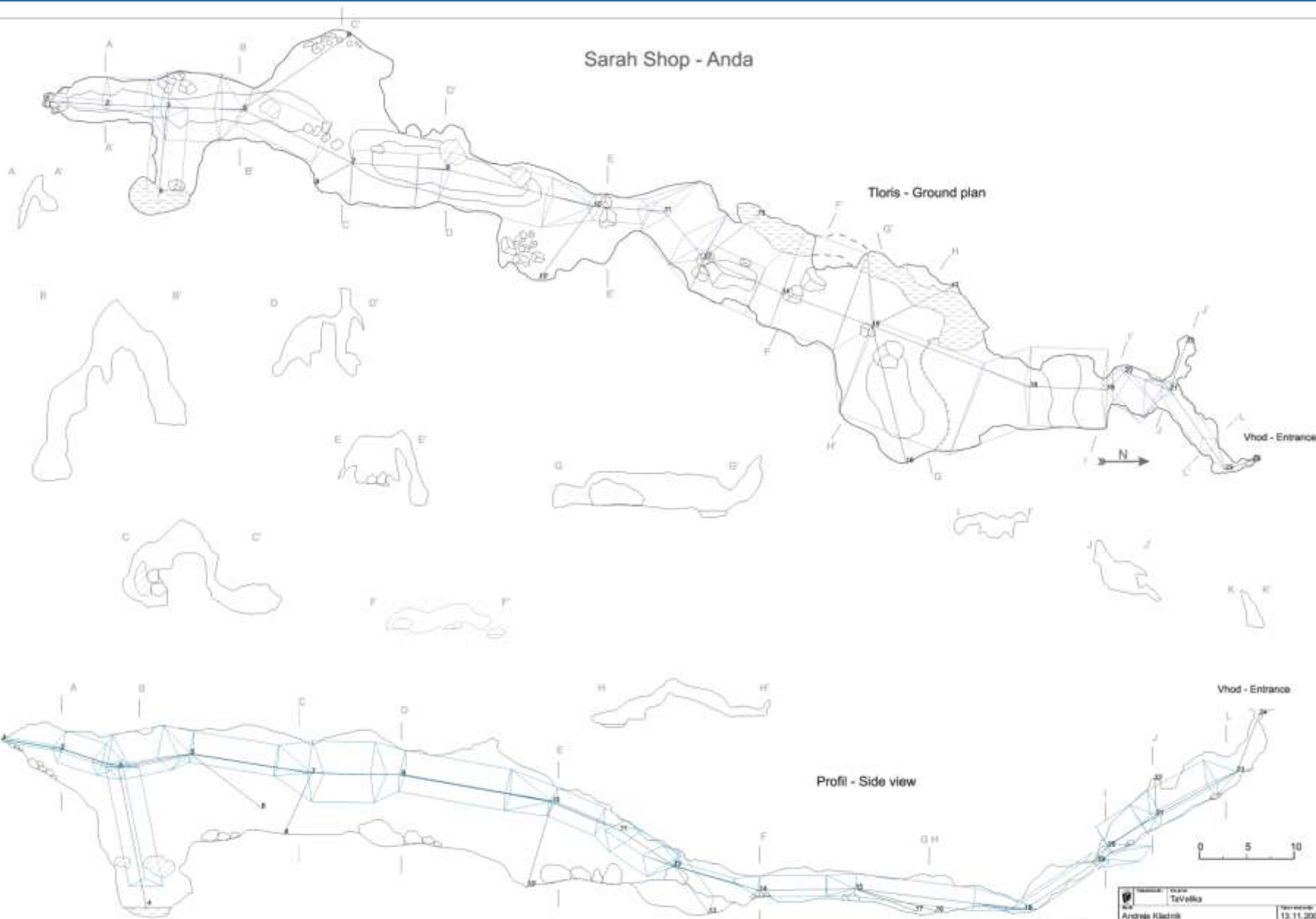






Sarah Shop - Anda

Tloris - Ground plan



Vhod - Entrance

Vhod - Entrance

Profil - Side view

Barangay: Canda bong
 Length: 213,2 m
 Depth: 20,9 m

Projekat	Arhitektura	Titul	13.11.2008
Arhitekt	Andrija Klacnik	Projekat	17.11.2008
Projekat	Oniga Ramak	Projekat	II / B
Skala	JK Črni Galop Prebaki	Skala	1:250
Arhitektura	Arhitektura	Skala	1:250
Arhitektura	Arhitektura	Skala	1:250









nitastonožci Amblypygi





salanganka *Aerodramus* sp.





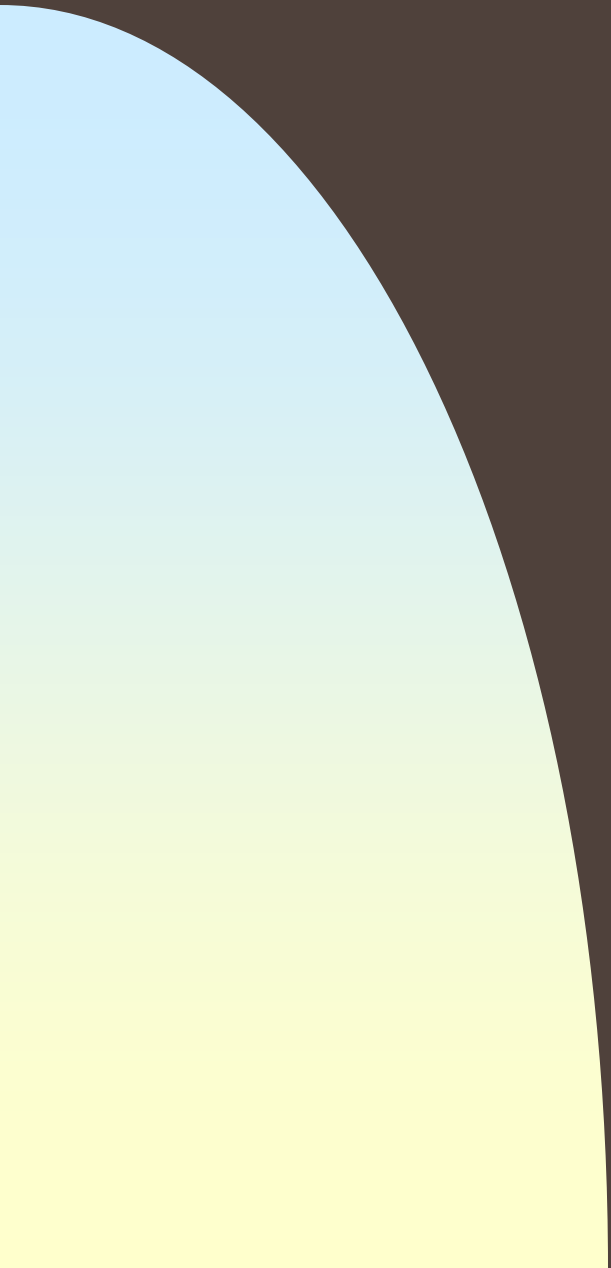












Darko Naraglav



notri pozabil pankeljc za 7 EUR



Kozice, pretežno <i>Caridina</i> in <i>Macrobrachium</i>		Vrst, znanih z Bohola	od tega endemnih oz. novih
	1995	0	
(Yixiong Cai)	2005	29+	8+



pa - pa ...

