

# WPZ bijeenkomst

## 29.03.2014

**Naturalis**  
Biodiversity  
Center



European Union  
European Social Fund



MINISTRY OF EDUCATION & RELIGIOUS AFFAIRS  
MANAGING AUTHORITY

Co-financed by Greece and the European Union



# Een drieluik van eilandstudies: verleden, heden en toekomst

Alexandra van der Geer

WPZ bijeenkomst 29.03.2014

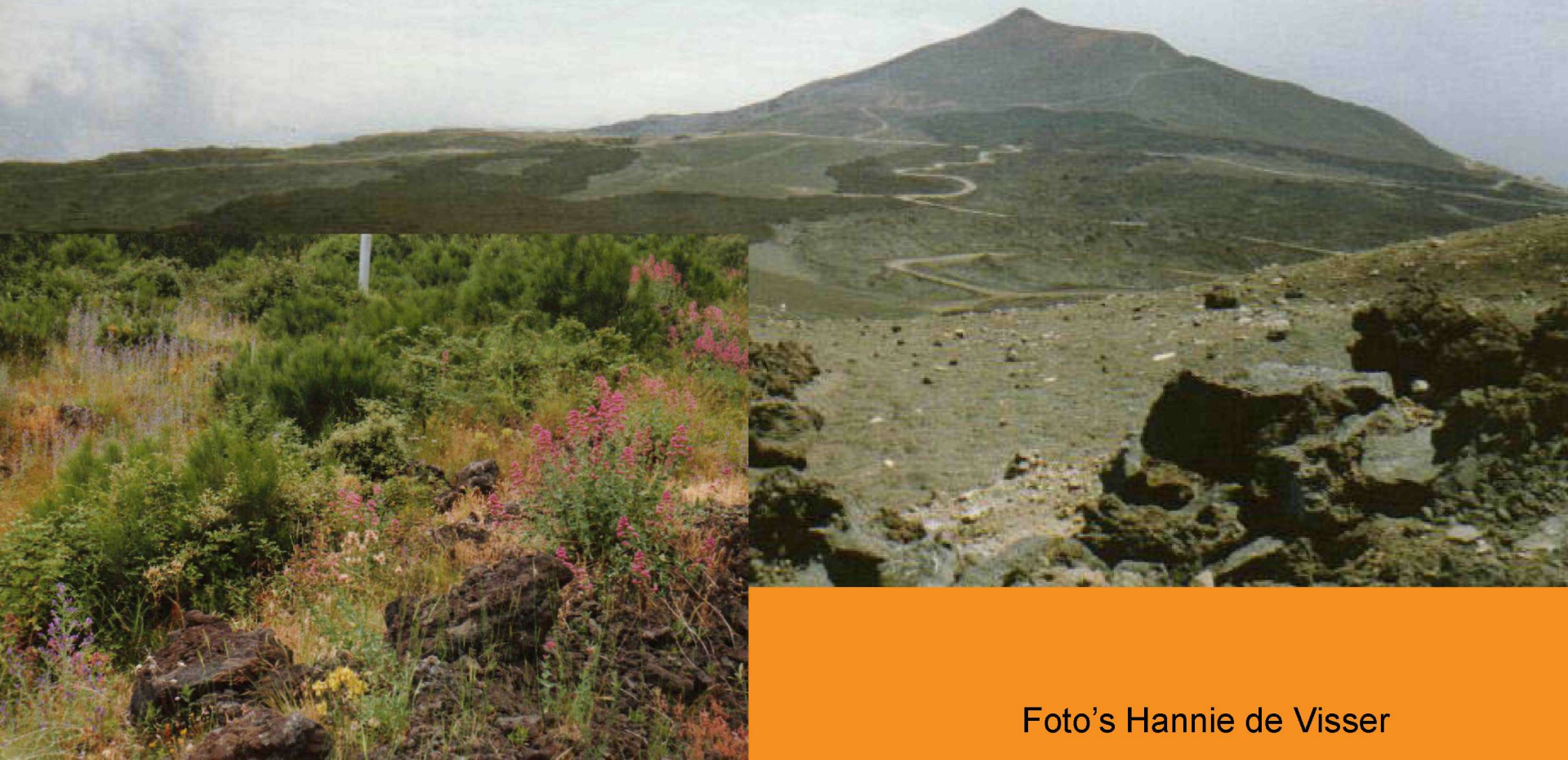




# *(Verre) Verleden*

Monsters, mythische wezens, sirenen, zondvloed

## Sicilië



Polyphemos  
(Gr. lett. Very-famous)

Eénogige reus, leider van de Kyklopen, leeft in een grot op het eiland Thrinacia  
(*Od.* i. 69, ix. 383, &c.)





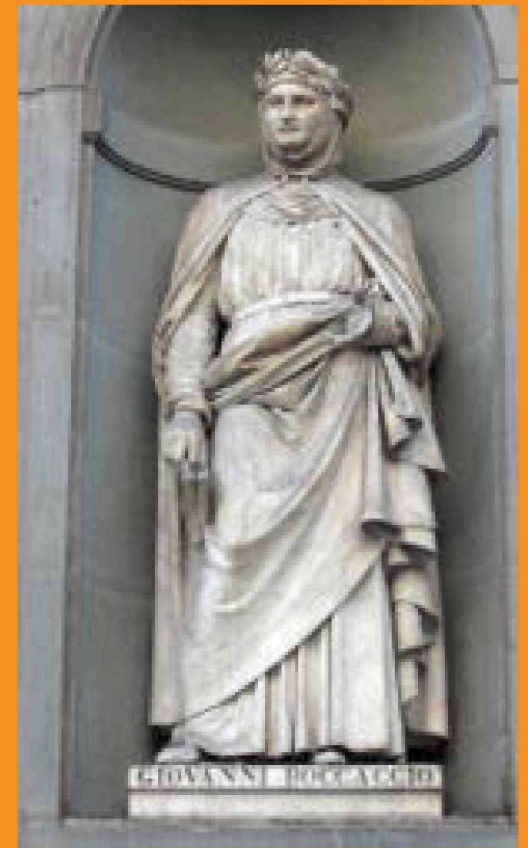
Boccaccio:

.....when they discovered the entrance to a cavern. .... As they walked through the cave, opposite the entrance they saw a seated man of massive size, from whom the terrified men suddenly took flight and left the cave. They came down into town back the way they came, telling everyone what they had seen.

Athanasius Kircher (1601-1680):

The very distinguished Marquis [Carlo di Ventimiglia] added that *several caves of this kind are found in Sicily*, and while admiring similar caves ignorant peasants find likenesses of bones produced by the force of Nature, and persuade not just themselves that they are the enormous bones of giants, but also others

..... the *stone bones*, which even now are on display in our Museum, and because of which I have always believed them to be the work of Nature alone.



Boccaccio  
(1313-1375)

# ISOLARIO

DIBENEDETTO BORDONE

Nel qual si ragiona di tutte l'Isole del mondo,  
con li lor nomi antichi & moderni, historie,  
sauole, & modi del loro viuere, & in qual  
parte del mare stanno, & in qual pa-  
rallelo & clima giaciono. Ri-  
coreto, & di Nuouo  
ristampato.

Con la giunta del Monte del Oro  
nouamente ritrouato.

CON IL BREVE DEL PAPA

Et gratia & priuilegio della Illustrissi-  
ma Signoria di Venetia co-  
me in quelli appare.



M. D.

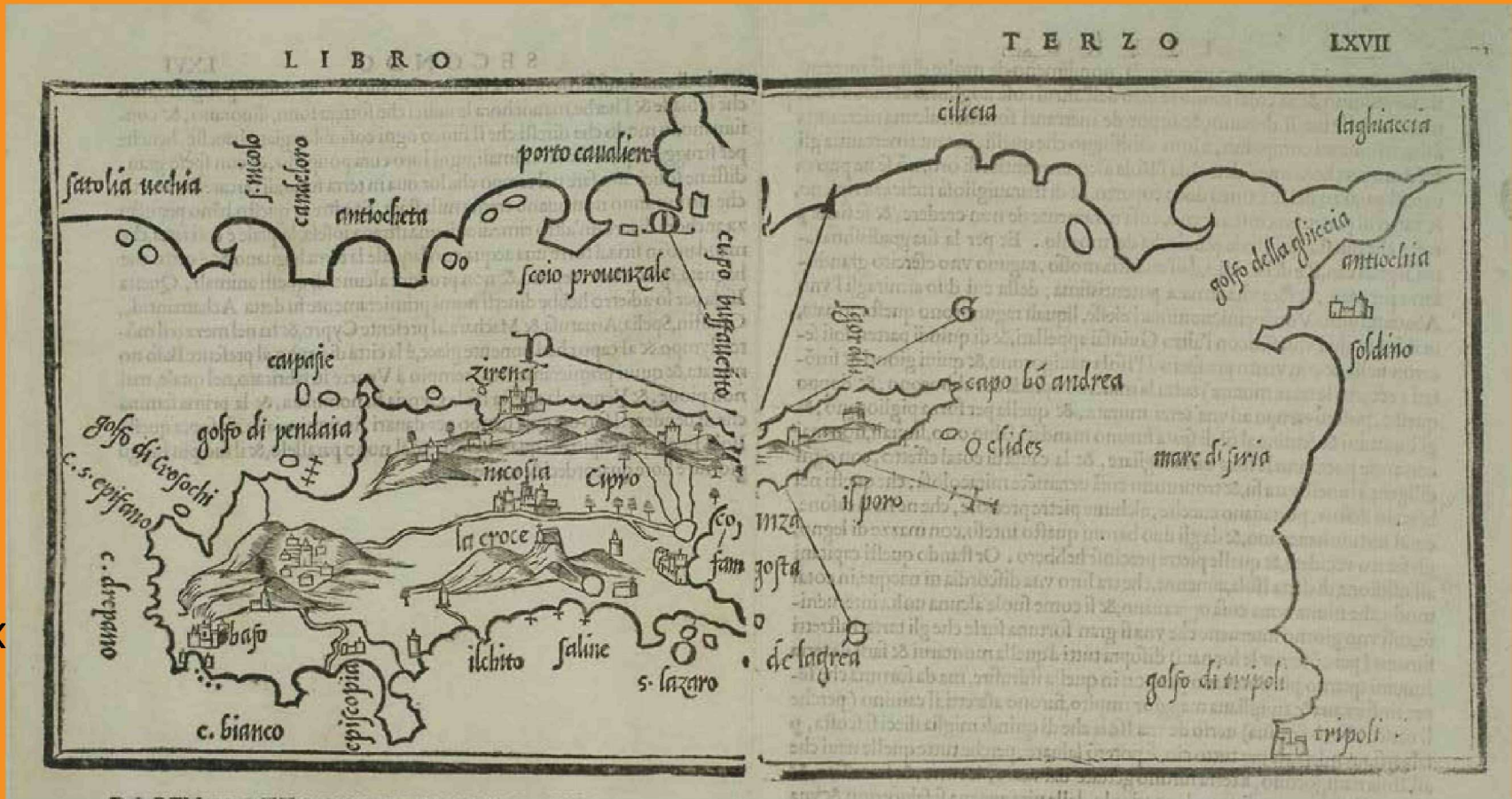
XLVII.

Benedetto Bordone van Padua  
(1528):

geïllustreerde gids voor zeelui.  
Beschrijft afzettingen met  
fossielen op de eilanden



Een heuvel bij Kyrenia ("Zyrenes"), geheel bestaande uit botten van dieren en mensen. De dorpelingen maken er een medicinaal poeder van.



Wellicht dezelfde als de resten van de 300 Maronieten (Syrische Oosters-orthodoxe kerk), die gevlucht waren maar te pletter sloegen op Cyprus' woeste kust. Lokale naam: Agioi Fanentes (de Geopenbaarde Heiligen).



De versteende resten van de Heilige Fanourios:  
vermalen tot medicijn



Benedetto Bordone (1528): *“Whosoever is stricken by fever, and drinks a little of the powder scraped from these bones, has no sooner drunk than he is free from fever”*



## Heden, het prille begin van wetenschappelijke belangstelling

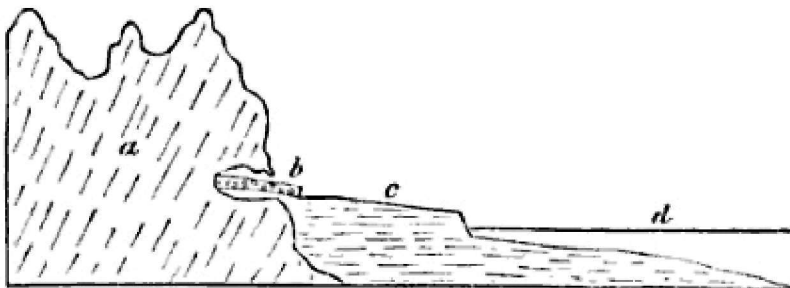


Terug naar Sicilië:

abt Scinà gaat in 1830 de grot San Ciro) in de Gierenberg (Monte Grifone) bij Palermo opgraven om een dispuut op te lossen: de plantkundige Baron Antonio Bivona-Bernardi meende daar fossiele resten te herkennen, versus de voorstanders van het bestaan van reuzen in het verleden.

Fossielen -> Georges Cuvier in Paris. Eerste wetenschappelijke erkenning als olifantenkiezen en nijlpaarden

No. 27.



**a, Monte Grifone.**

**b, Cave of San Ciro.**

**c, Plain of Palermo.**

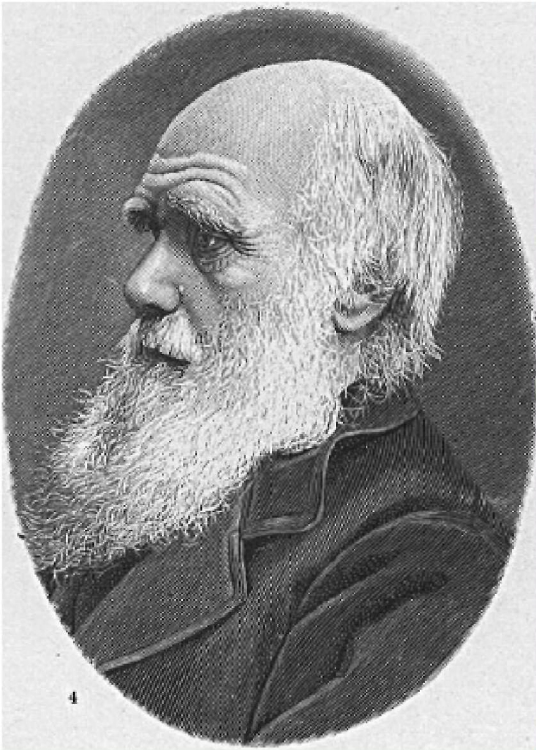
**d, Bay of Palermo\*.**

Ook mythe van reuzen op Malta, de bouwers  
van de megalithische tempels, ontmanteld:  
*Elephas mnaidrae* Leith Adams 1870  
(later: *Elephas mnaidriensis* Leith Adams 1874)



Originelen in Ghar Dalam Museum, Malta



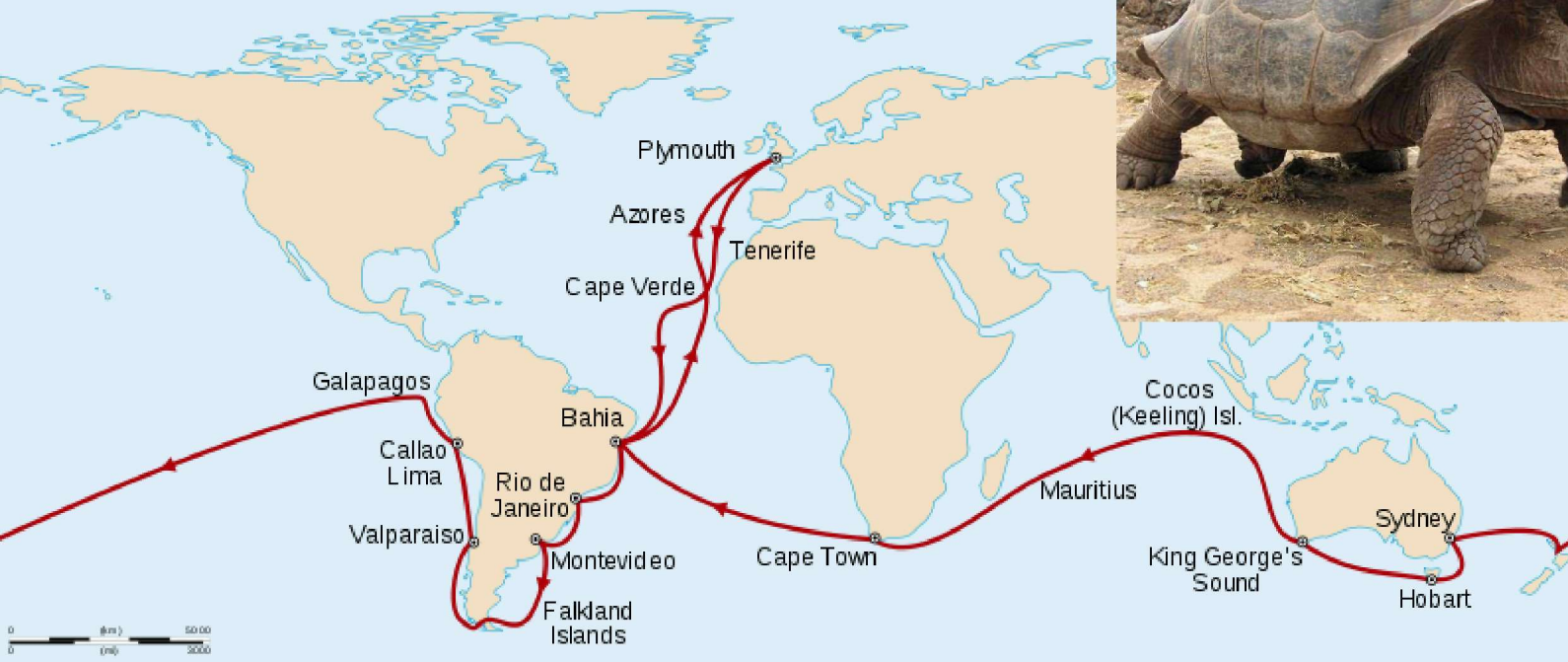


## Ondertussen in Engeland:

1839. *Narrative of the surveying voyages of His Majesty's Ships Adventure and Beagle*. London: Henry Colburn.

1859. *On the Origin of Species*. London: John Murray.

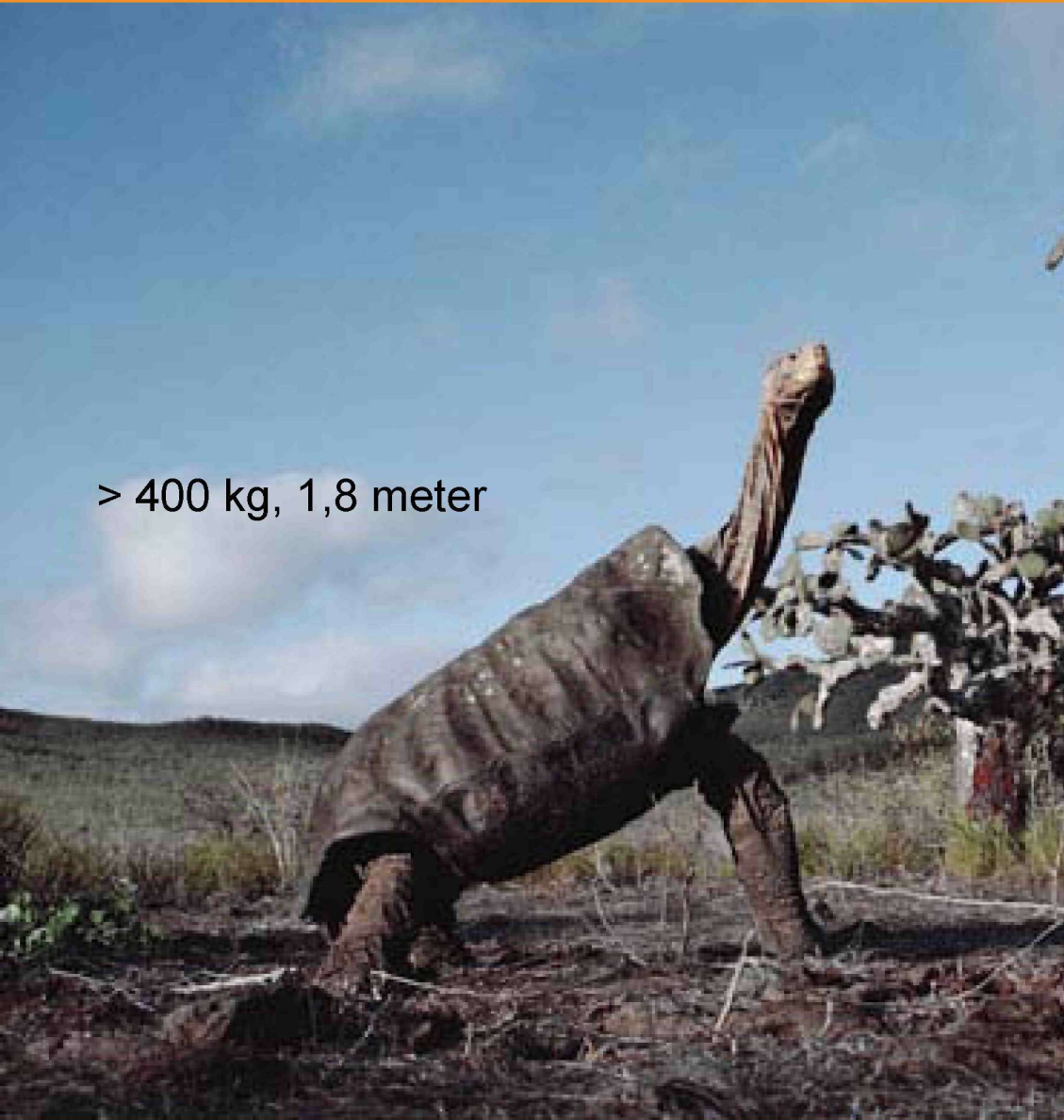
De unieke eilandfaunas stimuleerden zijn ideeën over de evolutie





Galápagos: reuzenschildpadden, ratten, vinken (Darwin vinken), leguanen,...

> 400 kg, 1,8 meter



Lonesome George (Pinta Island)





Ondertussen, aan de andere kant van de wereld in de Maleisische archipel



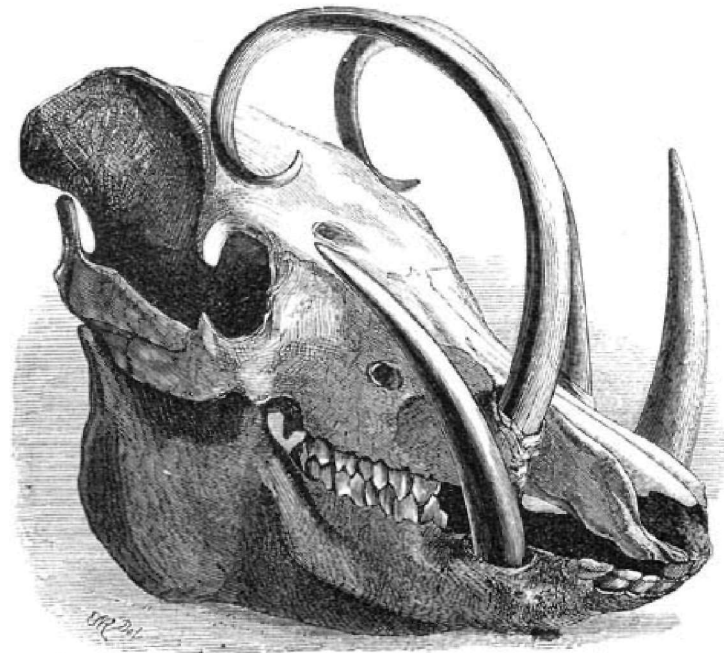
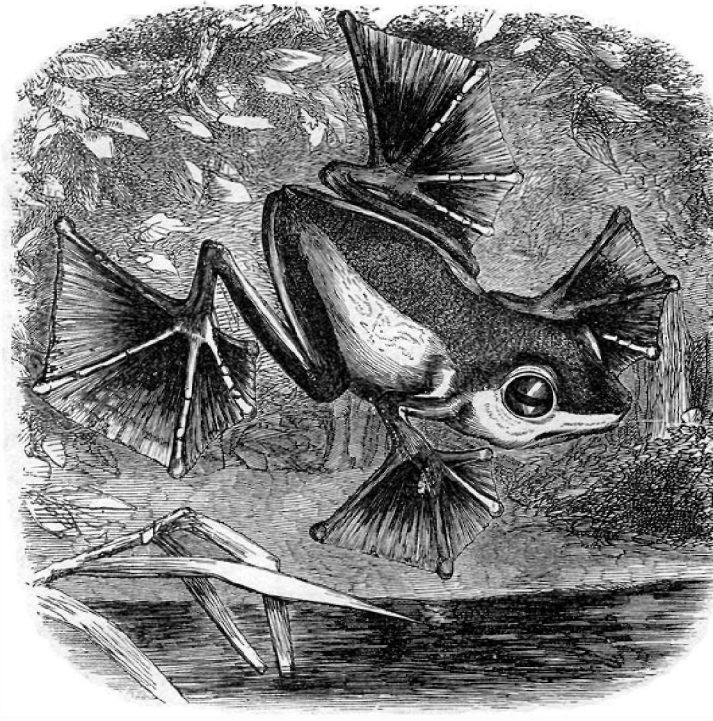


Alfred Wallace  
(1823 – 1913)

1869: *The Malay Archipelago: the land of the orang-utan and the bird of paradise*. Scotland: Tynron Press.

1880. *Island Life, or the Phenomena and Causes of Insular Faunas and Floras*. London: Macmillian.

Theorieën en verklaringen over de evolutie van eilandsoorten







Ontberingen, weinig eten, krap onderdak, malaria



“..... The vegetables and fruit in the plantations around us did not suffice for the wants of the inhabitants, and were almost always gathered before they were ripe. It was very rarely we could purchase a little fish; fowls there were none; and we were reduced to live upon tough pigeons and cockatoos, with our rice and sago, and sometimes we could not get these.”

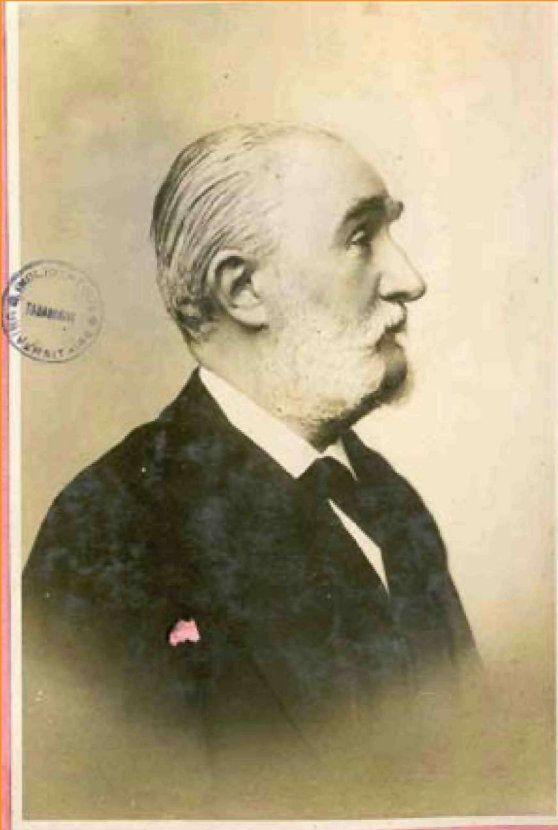
uit: *The Malay Archipelago* (1869)



Standbeeld bij Natural History Museum, Londen, onthuld 2013 door David Attenborough



## Alfred Grandidier (1836-1921)



1858: Wetenschappelijke wereldreis (aangeboden door pa), samen met zijn broer (Zuid Amerika)  
1860: alleen op pad.

Naar India, wordt boeddhist.

Helaas, ziek en naar Zanzibar om op te knappen, daarna bezoek aan Réunion

In 1865, 1866, 1868  
naar Madagascar.





1865: ontdekking van de eerste vindplaats met subfossiele resten bij het Ranobe meer.

De dorpsoudste vertelde hem over een opgedroogd moeras met botten van de 'Song'aomby' – “de koe die geen koe is”.

Heel veel botten. Ca. 50 skeletten (nu in musea wereldwijd) van dwergnijlpaarden



Zo'n 5000 jaar geleden kan het er zo uitgezien hebben

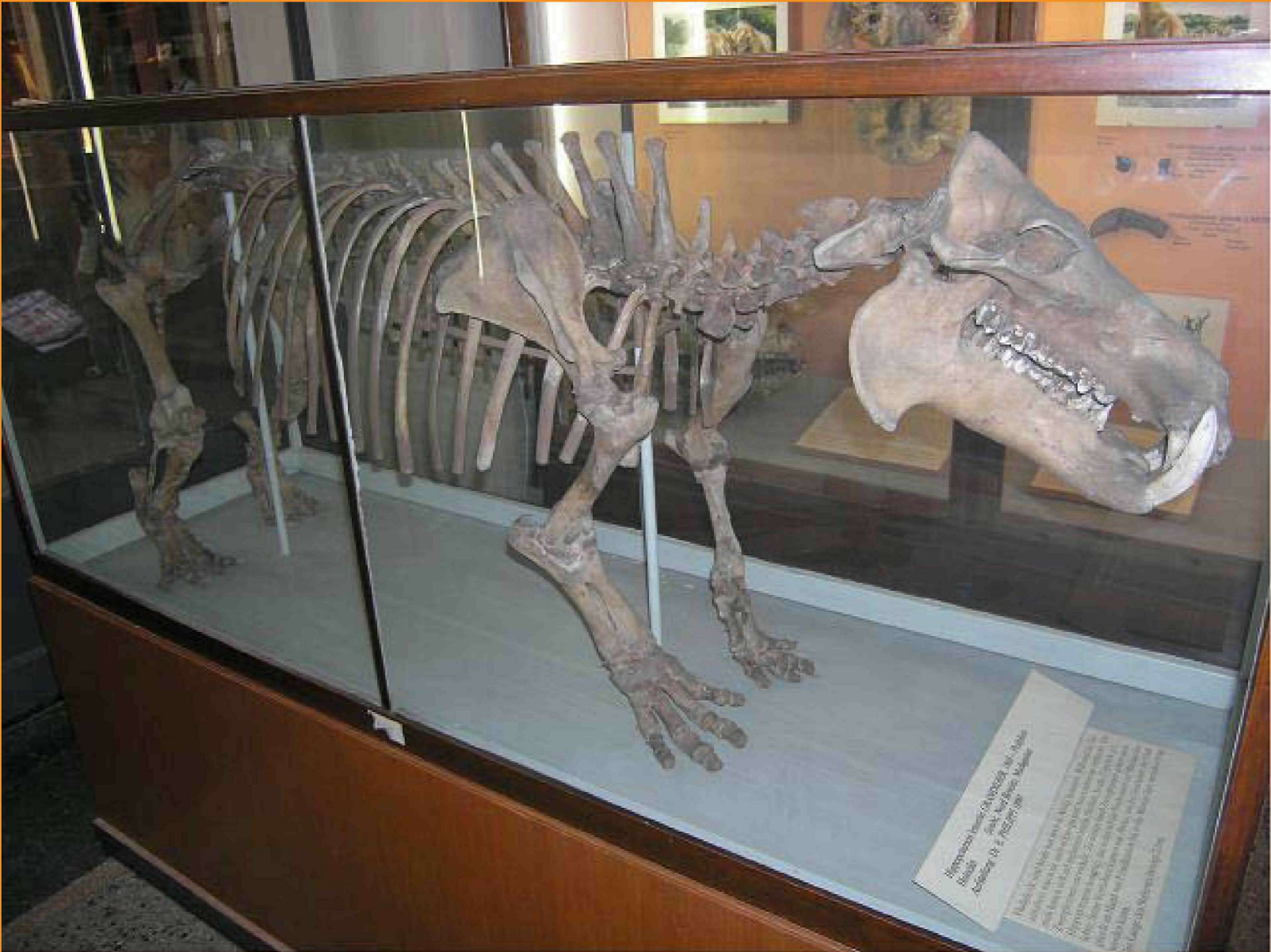
*Adansonia grandidieri*



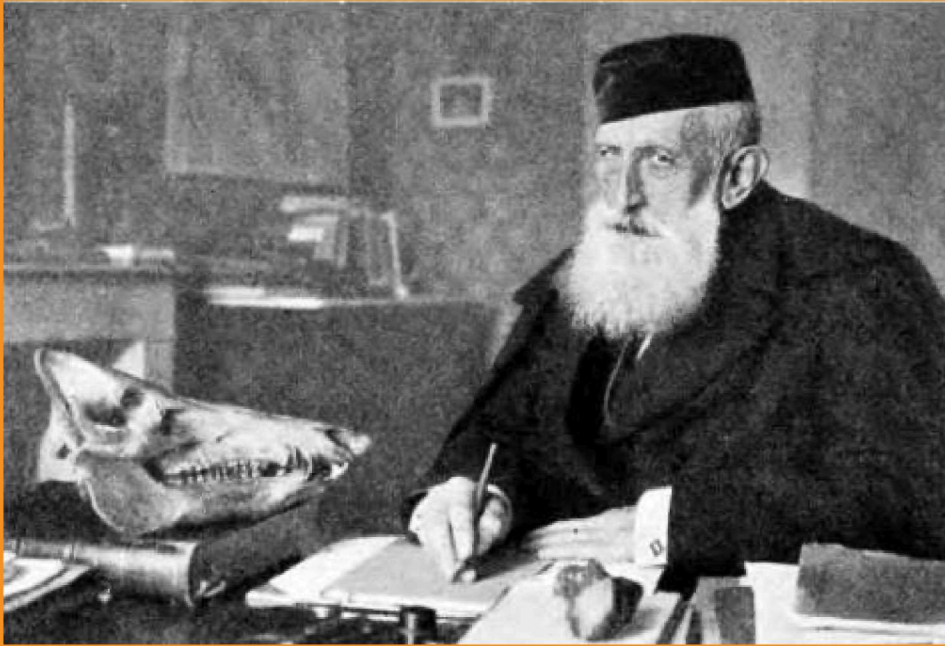




Humboldt Universiteit, Berlijn



## Charles Immanuel Forsyth Major (1843-1923)



In vrije tijd (arts van beroep): studie van fossiele zoogdieren.

1877: naar Corsica, Sardinië en Sicilië

1882 *Tyrrhenicola henseli* (woelmuis)

1883 *Elephas lamarmorae* (nu *Mammuthus*)

1905 *Rhagamys orthodon* (veldmuis)

1910 en verder: systematisch opgraven van Capo Figari breccias





Major's Tavolara collectie in Natuurhistorisch Museum, Basel, Zwitserland

1886: begin studie van materiaal van Cyprus,  
Kreta, Samos, lemur materiaal van Madagascar

*Megaladapis madagascariensis* Major 1893 (en vijf andere soorten)



1894-1896: Madagascar

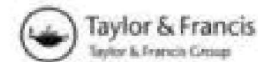
Enorme collectie, 73  
kratten naar British  
Museum, Londen



'it may be remarked that the very large collection was obtained under circumstances of great difficulty and danger. The swampy nature of the deposits made the task of excavating very arduous, and the work was frequently interrupted for days at a time through the growing hostility of the natives. Dr. Forsyth Major and his companion, M. Robert, are therefore the more to be congratulated that, under such unfavourable conditions, they have added so much to our knowledge of the extinct fauna of Central Madagascar.'

(Charles Williams Andrews, 1897, blz. 358)

*Journal of Natural History*, 2005; 39(20): 1779–1818



**Charles Immanuel Forsyth Major's expedition to Madagascar, 1894 to 1896: beginnings of modern systematic study of the island's mammalian fauna**

PAULINA D. JENKINS<sup>1</sup> & MICHAEL D. CARLETON<sup>2</sup>

<sup>1</sup>*Department of Zoology, The Natural History Museum, London, UK, and* <sup>2</sup>*Department of Zoology, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA*

*(Accepted 4 November 2004)*

# Cyprus

Forsyth Major denkt dat hier dwergnijlpaarden en dwergolifanten te vinden zijn, net als op Sicilië, Malta, Kreta





Dorothea Bate (1878-1934), preparateur in de Bird Room

18 maanden naar Cyprus (1901-1902)

Op jacht naar de fossielen van de beschrijvingen

The author then describes these caves in detail. The caves explored at Cape Pyla were: (1) The Red Cliff Cave; (2) the Great Anonymous Cave; (3) the Small Anonymous Cave; (4) Haghios Jannos; (5) ~~Haghios Saronda~~. This is the cave to which formerly pilgrimages were made and candles burned in honour of the sacred remains of saints.

40 Heiligen



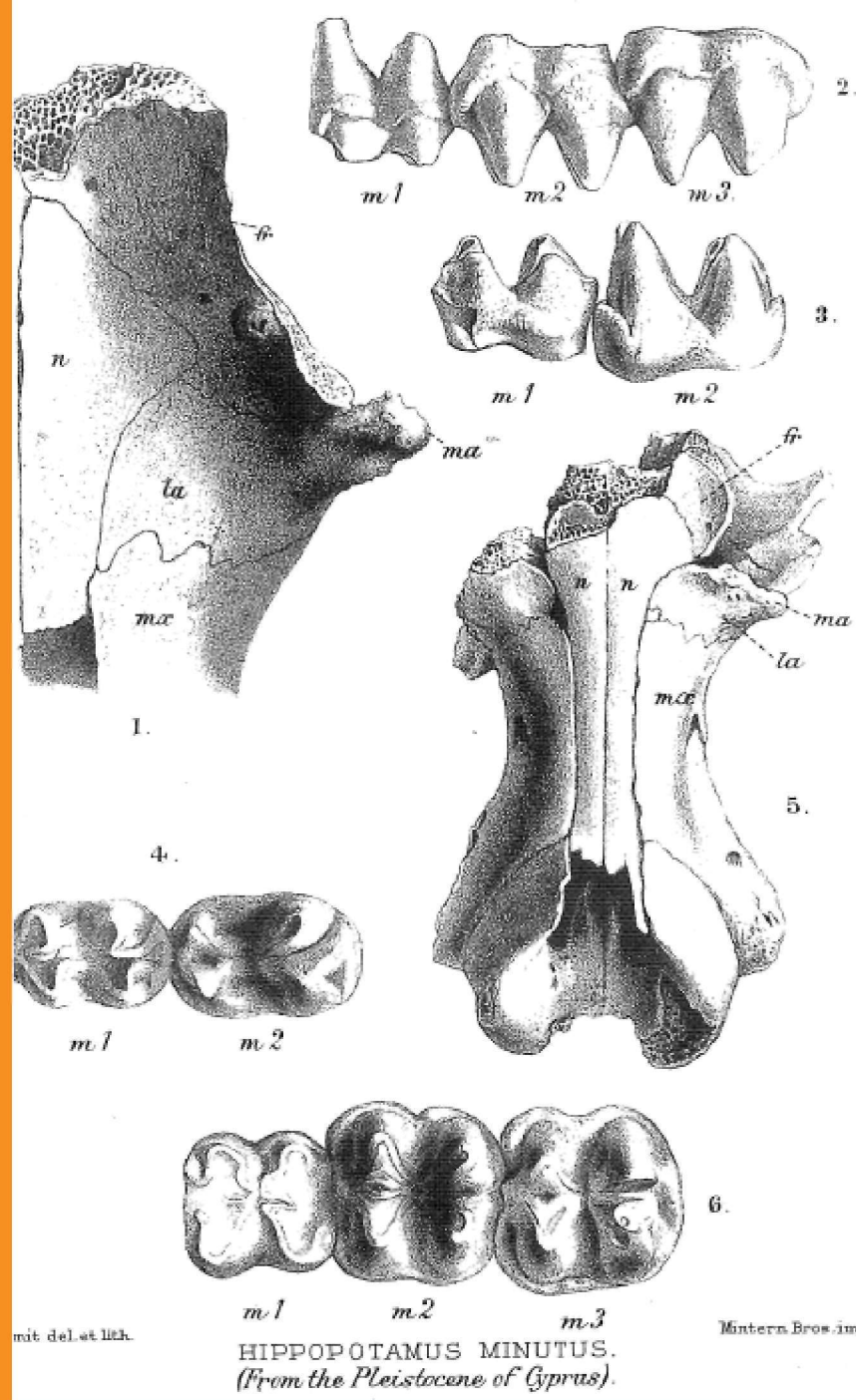
Fossielen van een soort varken, ze stuurt ze naar Charles Forsyth Major in Londen.

Forsyth Major herinnert zich het door Georges Cuvier in 1804 afgebeelde kleine nijlpaard (“petite hippopotame fossile”).

Niet Frankrijk maar Cyprus!

Major 1902

Eilanden – van der Geer





Bate 1906

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 No. VI. — JUNE, 1906.
 

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 ORIGINAL ARTICLES.
 

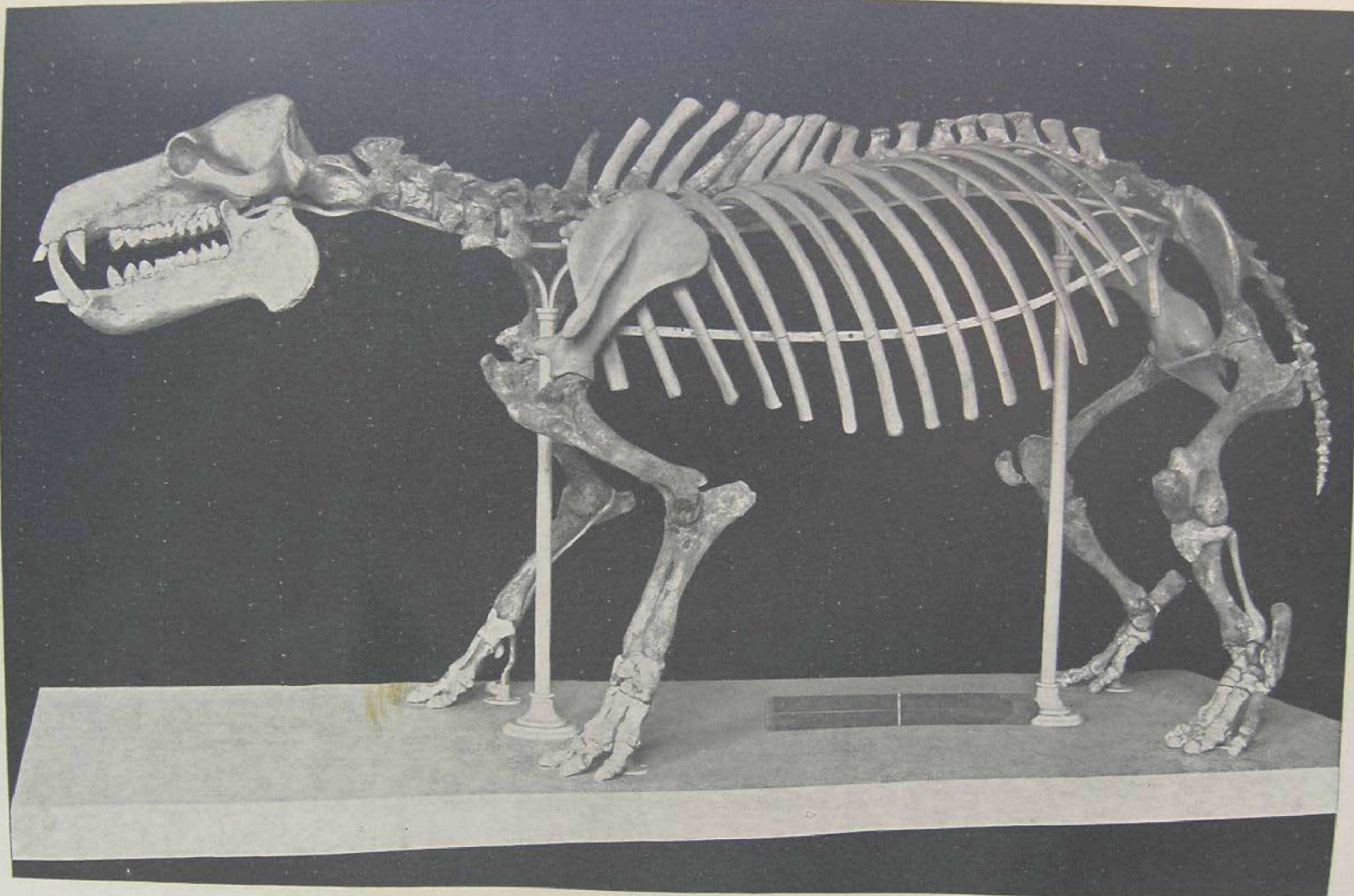
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## I.—THE PIGMY HIPPOPOTAMUS OF CYPRUS.

By DOROTHEA M. A. BATE.

(PLATE XV.)

THE accompanying Plate represents a restoration of the skeleton of *Hippopotamus minutus*, Blain., which has lately been completed in the Geological Department of the British Museum (Nat. Hist.). The vertebral column and limbs are almost entirely composed of the actual bones, while the model of the skull has been built up according to the various parts obtained separately. No ribs were preserved in their entirety, neither were perfect specimens of the scapulæ or innominate bones procured. A large amount of material, including that from which the reconstruction of this skeleton has been made, was brought from Cyprus as the result of excavations carried on there by me at different times in 1901-2. The specimen was mounted and the skull modelled with great skill by Mr. F. O. Barlow, Formatore in the British Museum (Nat. Hist.).



Reconstructed skeleton of *Hippopotamus minutus*, Blainv., from the caves of Cyprus.  
Extreme length of specimen,  $55\frac{1}{2}$  inches ; height at withers,  $26\frac{3}{4}$  inches.



1902: Eindelijk de dwergolifant! (“Effie”)



*Elephas cypriotes*

Foto Eelco Kruidenier

(hier stukje dijbeen vergeleken met dat van een wolharige mammoet)

Ook recente dieren:  
Cyprus spiny mouse  
Cyprus winter wren

# Kreta

Fossielen waren eerder al opgemerkt:

Pococke (1745): grote botten in grot met kapel voor Sint George

Spratt (1865): klein nijlpaard van Katharo; grotten met fossielen, stuurt  
wat naar Hugh Falconer in London: 'geit' en 'reebok'

Simonelli (1893): vrij grote olifant in grotten bij Rethymnon

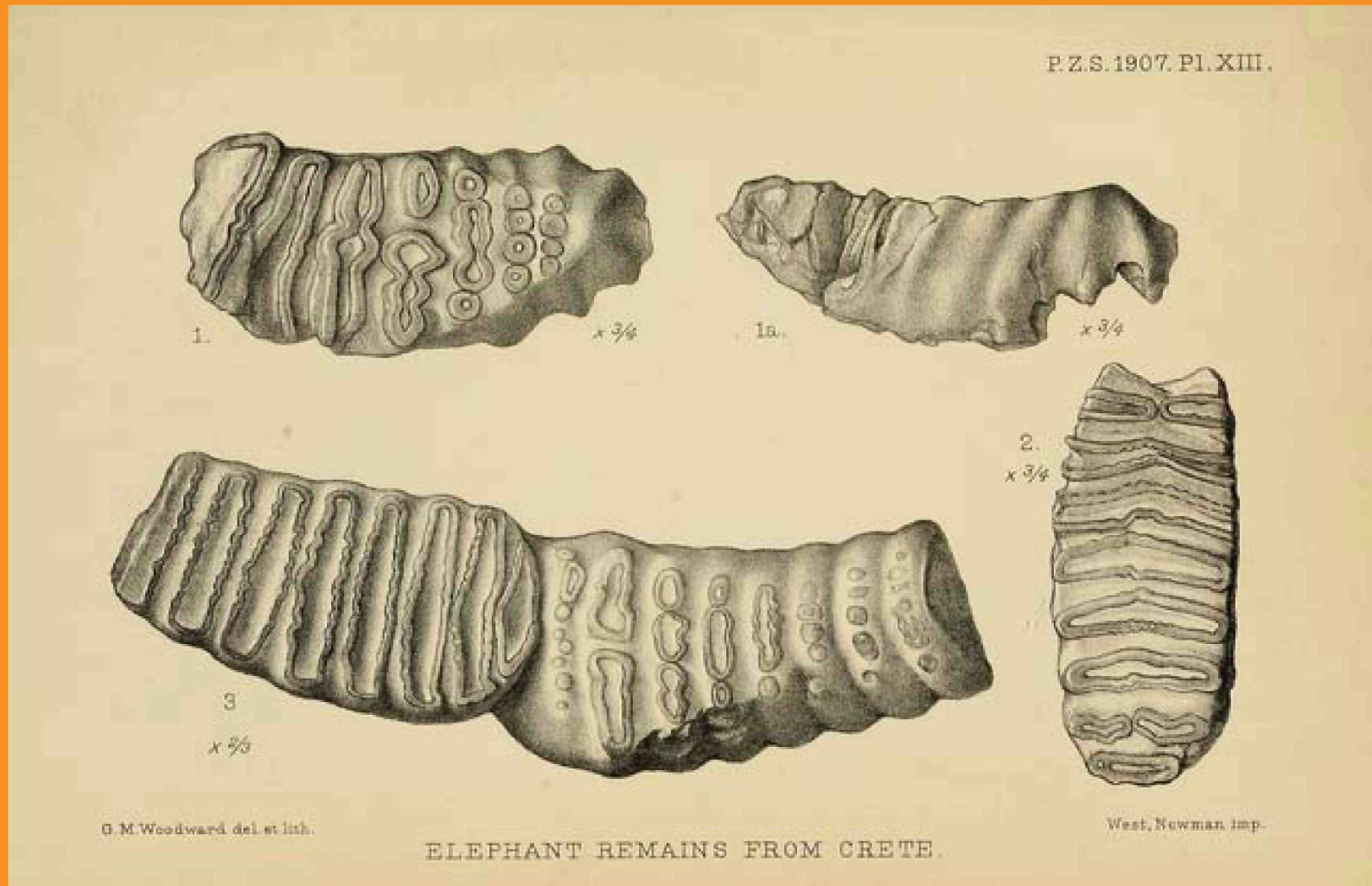


Spratt, 1865

Dus, Dorothea Bate, voorjaar 1904:  
op jacht naar olifanten en nijlpaarden, net als op Cyprus



Inderdaad, ze vindt kiezen van een kleine olifant, leken op die van *Elephas meridionalis* (= *Mammuthus meridionalis*).



Nu: dwergmammoet (*Mammuthus creticus*)

Ook fossiele kleine zoogdieren (naast recente zoogdieren)



1912: *Mus catreus* (nu *Kritimys*)

1942: *Rattus kiridus* (nu *Kritimys*)

1942: *Mus minotaurus*



# Majorca



Op jacht naar de dwergolifanten en dwergnijpaarden (Cyprus, Sicilië, Malta, Kreta) !



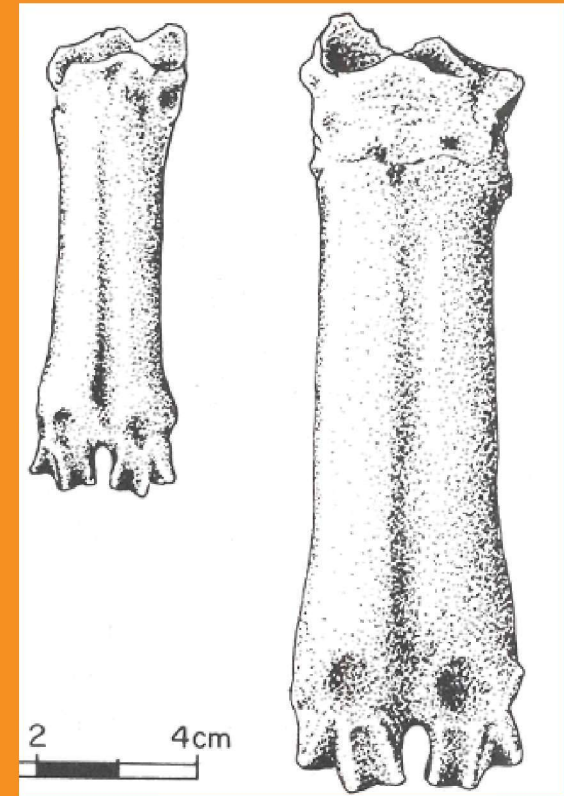
Coves dels Coloms, Shindler 2007



<http://baleopolis.blogspot.nl/2011>



*Myotragus balearicus* Bate, 1909



Dwerggeiten met  
altijd-  
doorgroeiende  
snijtanden zoals  
bij knaagdieren

Barnum Brown (1873-1963; “Mr. Bones”) (T. rex 1902)

Intussen aan de andere kant van de wereld, nu westwaarts

Op zijn Amerikaans



1911 of 1918

Hot Springs, Cuba; fossielen  
van reuzenluiaarden



Aandacht getrokken vanwege eerdere vondsten van *Megalocnus rodens*

Carlos de la Torre Huerta met skelet en buste van Felipe Poey Aloy  
(ontdekker in 1866 van “reuzenknaagdier”)



1910. ARCHIVO  
NACIONAL DE LA  
REPÚBLICA DE  
CUBA, FOTOTECA

Dirk Albert Hooijer (1919-1993)

Krijgt vooral materiaal toegestuurd of gebracht en beschrijft dat vervolgens

The Celebes material has been collected by Dr. H. R. VAN HEEKEREN in the late forties; the Flores and Timor material comes from Dr. TH. VERHOEVEN and the Geological Survey of Indonesia. All of it was collected as surface specimens, and the stratigraphy of the beds is still to be studied.



Dirk Albert Hooijer (1919-1993)

Krijgt vooral materiaal toegestuurd of gebracht en beschrijft dat vervolgens

Sulawesi: *Celebochoerus heekereni* Hooijer 1948

*Archidiskodon celebensis* Hooijer 1949

*Babyrousa bolabatuensis* Hooijer 1950

*Stegodon sompoensis* 1964

Java: *Epileptobos* Hooijer 1956 (voor *Leptobos groeneveldti* Dubois)

*Stegodon hypsilophus* 1954

Flores: *Stegodon trigonocephalus florensis* Hooijer 1957

*Spalaeomys florensis* Hooijer 1957

*Papagomys verhoeveni* Hooijer 1957

*Papagomys armandvillei* besar Hooijer 1957

Curacao: *Paulocnus petrifactus* Hooijer 1962

Timor: *Stegodon timorensis* subsp. D Hooijer 1969

Enz.

Dwergstegodonten,  
reuzenschildpadden en olifanten  
met 4 stoottanden



Tekening Hans Brinkerink



Stegodon  
sompoensis  
Hooijer  
DM<sup>4</sup> dext.  
HO LOTYPE



Celebochoerus  
heekereni  
Hooijer

M<sub>1-3</sub> dext.

Foto's Eelco Kruidenier



Brief van Wilhelm Solheim II  
(pionier Filippijnen archaeologie):

Bewijs van vroege domesticatie  
van geit in de Filippijnen?



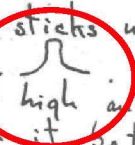
Manila, Philippines  
Sept. 10, 1952

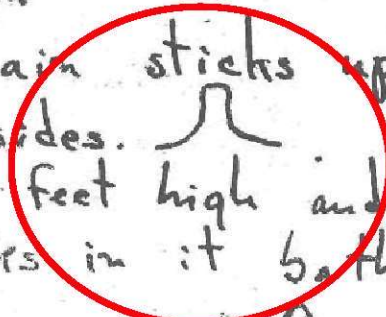
Dr. D. A. Hooijer  
Rijksmuseum Van Natuurlijke Historie  
Leiden  
The Netherlands

Dear Dr. Hooijer:

I turned over the rather small box of bones to the local office of UNESCO and they are having them sent on to you by Dutch diplomatic pouch. I believe that you will receive a letter from the director here shortly with information concerning it.

The bones are from two different locations. One small box contains bones from Fuga Island, one of the Babuyans just north of Luzon. These bones all came out of one burial jar dating about the 11<sup>th</sup> or 12<sup>th</sup> century A.D. The dirt in the jar was extremely hard and the bones fragile so in removing them I fear, there was a bit of breakage. Here and there I did a bit of repairing with celaloid-acetate. Unfortunately a few of the broken pieces are missing as some were apparently lost in transporting them to Manila.

The bones from Masbate are probably older, possibly coming from as much as 2,000 years ago. I hope to do more work there before too long and may have a better idea later. They come from three different sites on a tall limestone shaft. The mountain sticks up out of the surrounding valley with almost verticle sides.  It is about a mile around at the base, about 400 feet high and about a city block on top. There are quite a few caves in it both large and small, most of them showing human presence. One of the sites was a small cave about half way up the side. The other two sites were on the top, one in a large cave and the other a small refuse pile with potsherds

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Hooijer deed er verder niets mee  
John de Vos ziet overeenkomsten met het Kreta hert:



Masbate

Kreta

Masbate

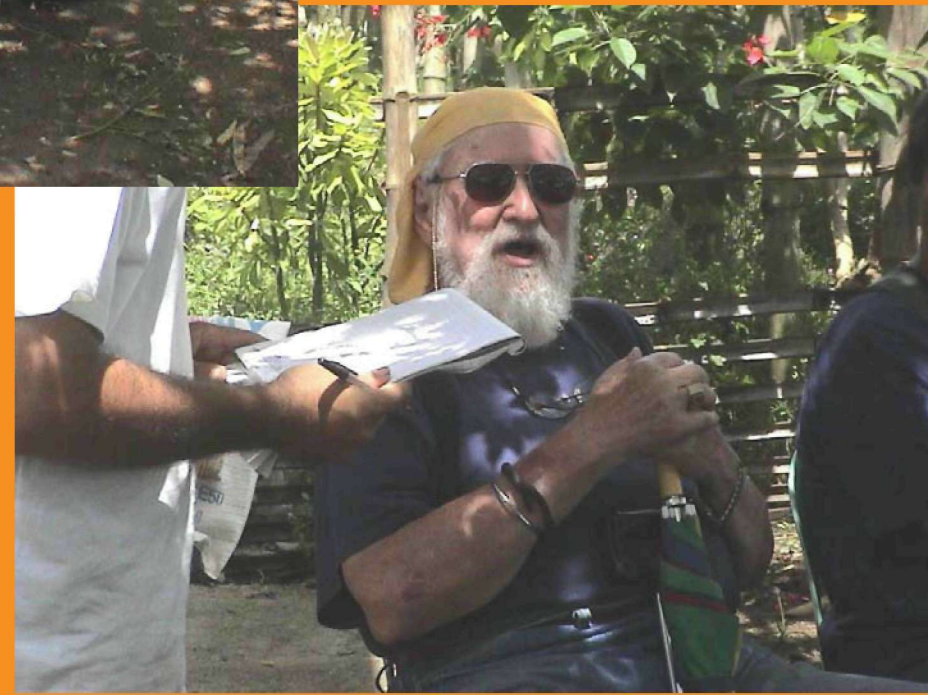
Kreta



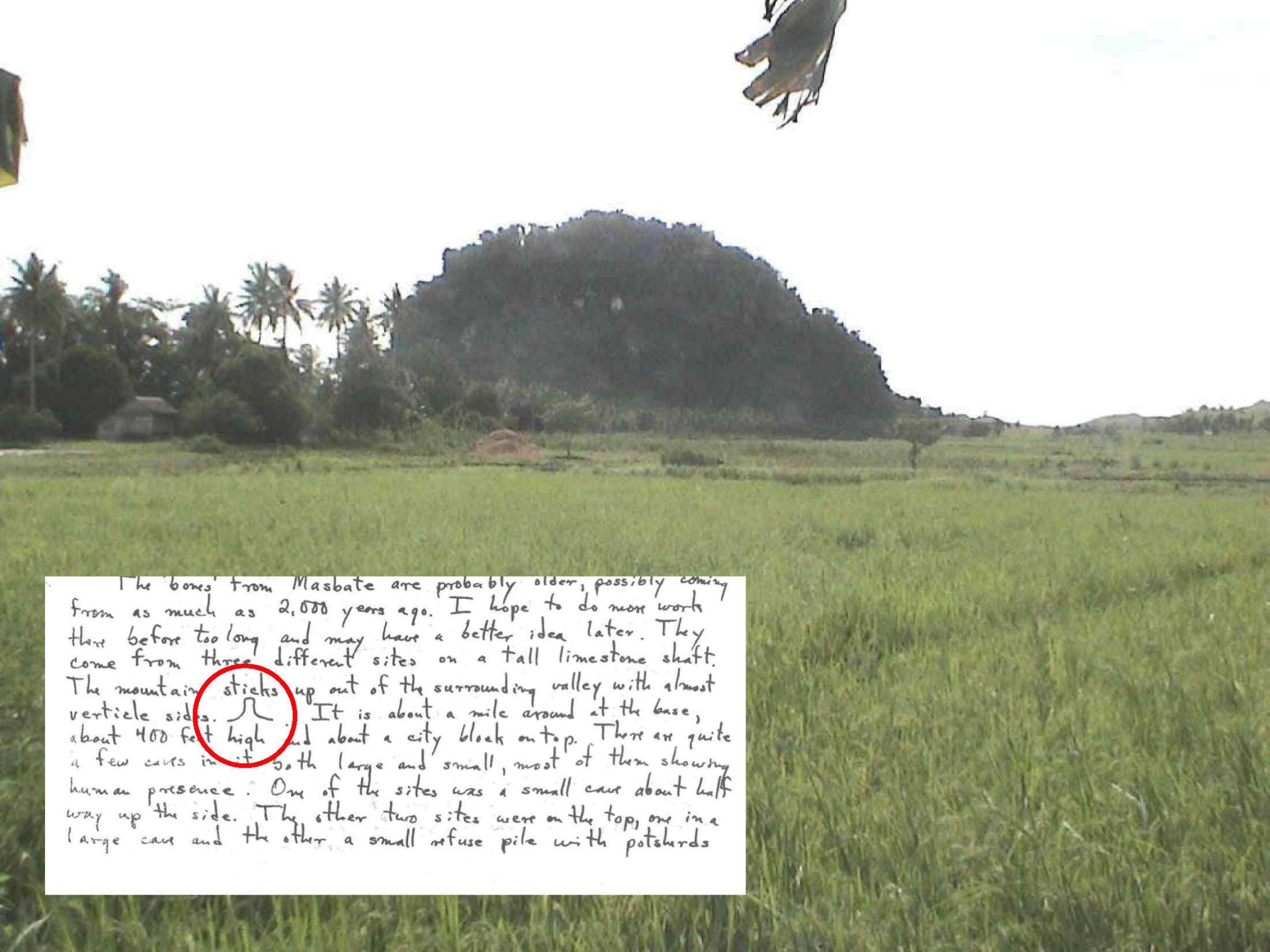


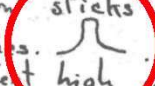
Dus op pad! (2005)

Mét de brief van toen  
(1952)







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En jawel, botten!

Resten van hert, reuzenrat





MINISTERIE VAN ONDERWIJS, KUNSTEN EN WETENSCHAPPEN

# ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN

DEEL XXXV, No. 21

23 december 1957

## THREE NEW GIANT PREHISTORIC RATS FROM FLORES LESSER SUNDA ISLANDS

by

**D. A. HOOIJER**

(Rijksmuseum van Natuurlijke Historie, Leiden)

With pls. XIV—XV

The specimens described in the present paper have been collected by Dr. Th. L. Verhoeven at Liang Toge, a cave near Warukia, 1 km south of a hamlet called Lepa in Manggarai, western Flores. This cave, as well as many others explored in the island by Verhoeven (1952, 1953), contains a Mesolithic flake and blade industry (Van Heekeren, 1957, p. 107). The faunal remains obtained from Liang Toge consist almost exclusively of jaws and bones of large rats, and it is of interest to place these specimens on record as they represent forms that are new to science, different from the one and only giant rat that is still living on Flores, *Papagomys armandvillei* Jentink).

Theodorus Verhoeven (1907-1990)





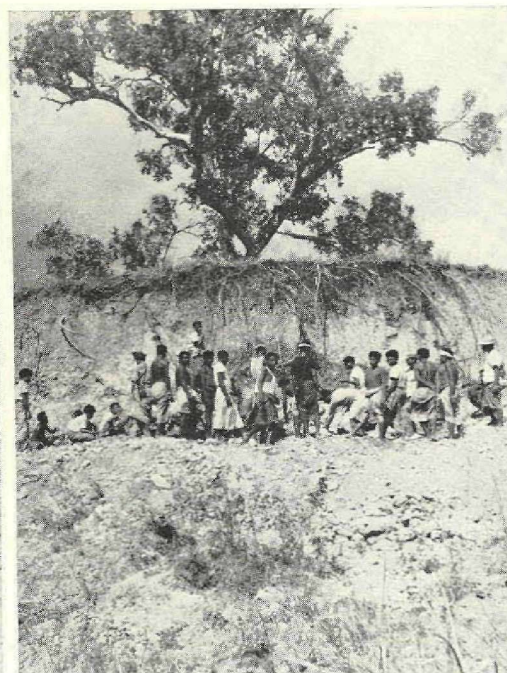
Als missionaris naar Flores  
1949-1966

Archeologische opgravingen  
in Ola Bula en Mata Menge  
(dwergstegodont plus  
werktuigen)

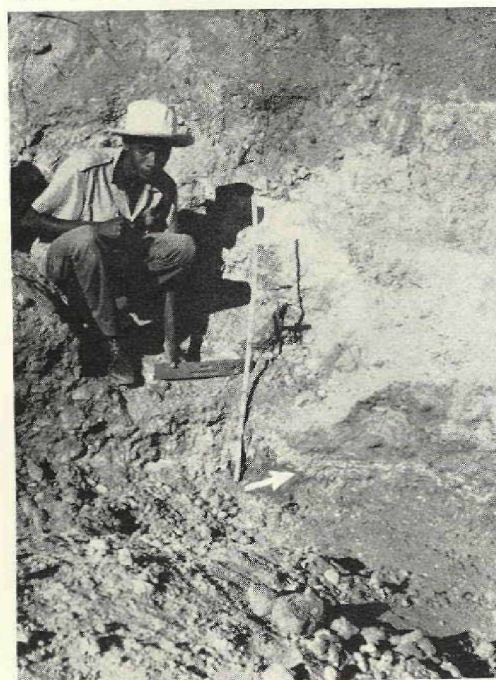
a)



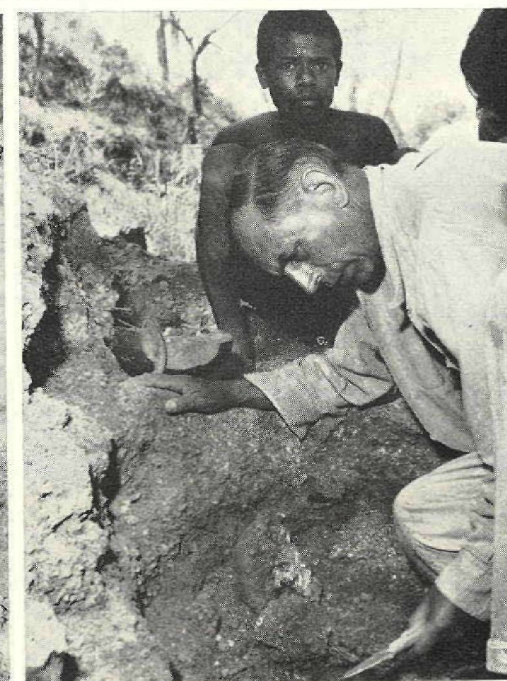
b)



c)



d)



# Stenen werktuigen uit Flores (Indonesië)

Door TH. VERHOEVEN, S. V. D.

In 1950 begon ik met het verzamelen van praehistorische artefakten. Met de bescheiden middelen die ten dienste staan was het reeds mogelijk ongeveer 70 stenen bijlen bijeen te brengen.

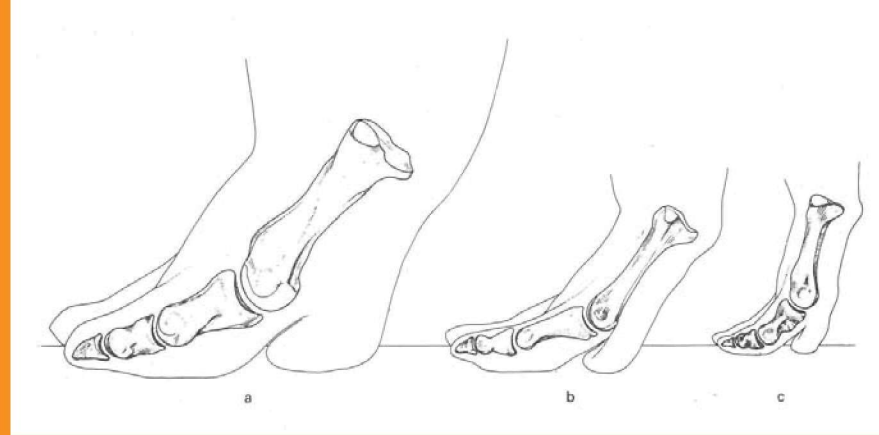
Geen bijval, niemand geloofde in een Oude Steentijd mens op Flores



Liang Bua 1965

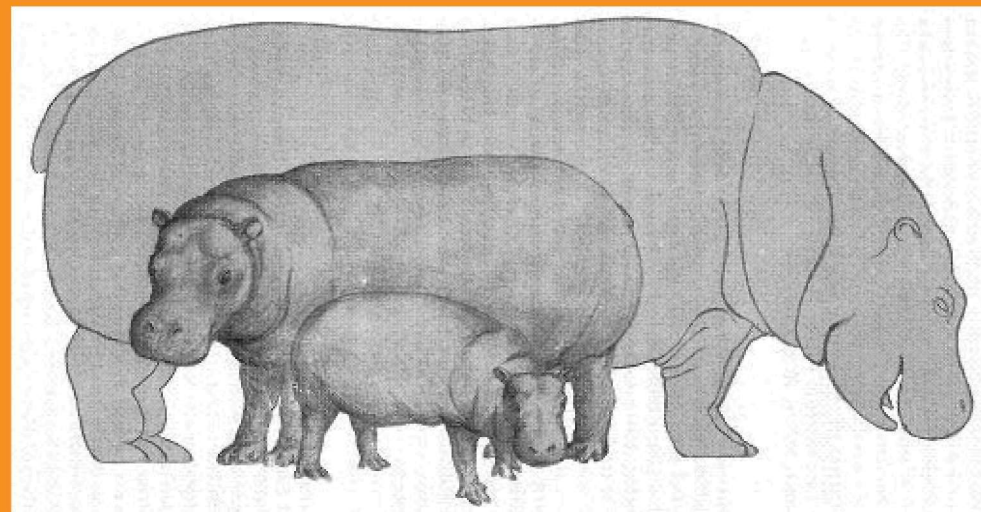






Midden jaren '60 naar Kreta en Cyprus om  
dwergnijlpaarden te bestuderen

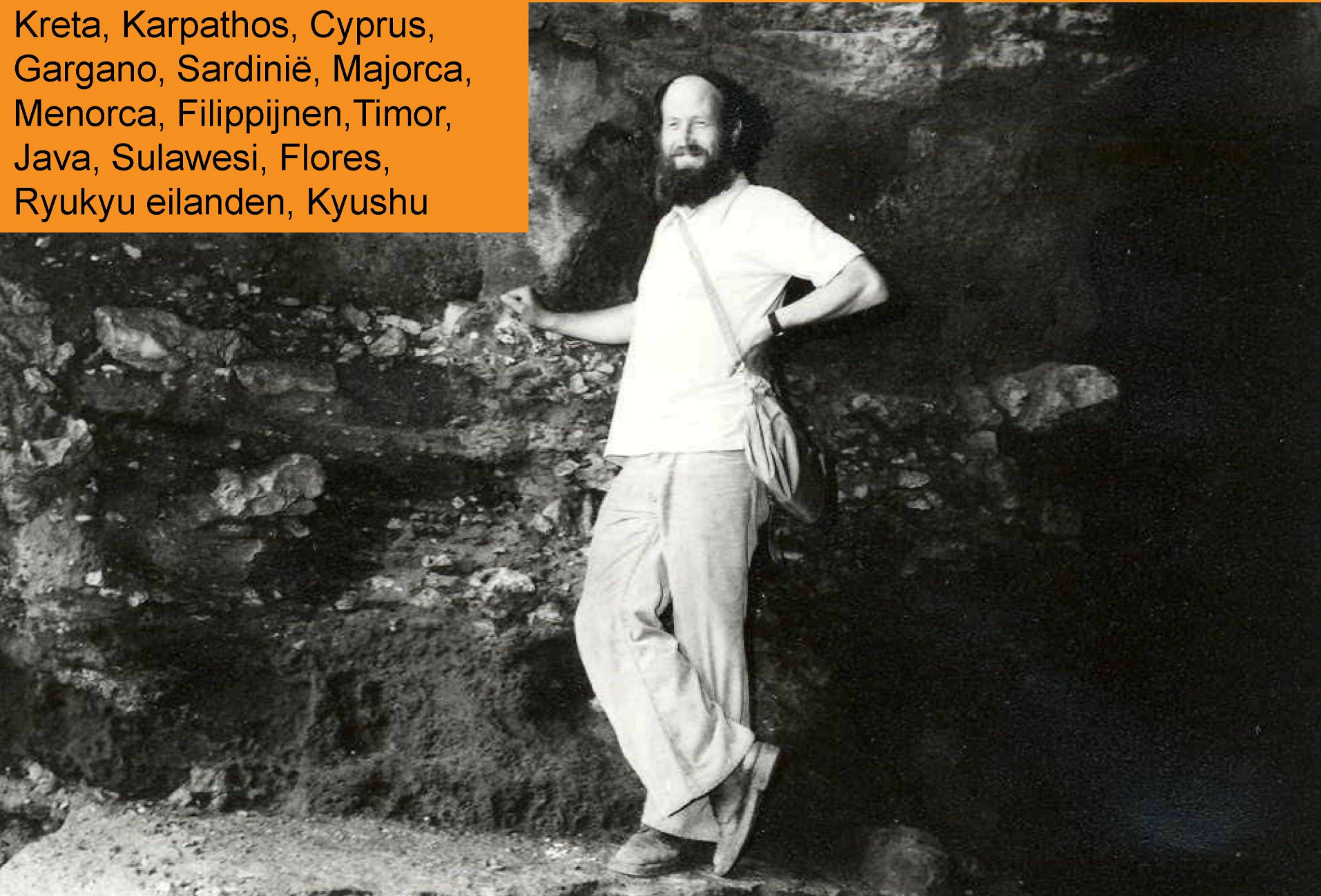
Paul Sondaar  
(1934-2003)



Van groot naar klein: nijlpaard  
van Afrika, Kreta en Cyprus  
Tekening Hans Brinkerink

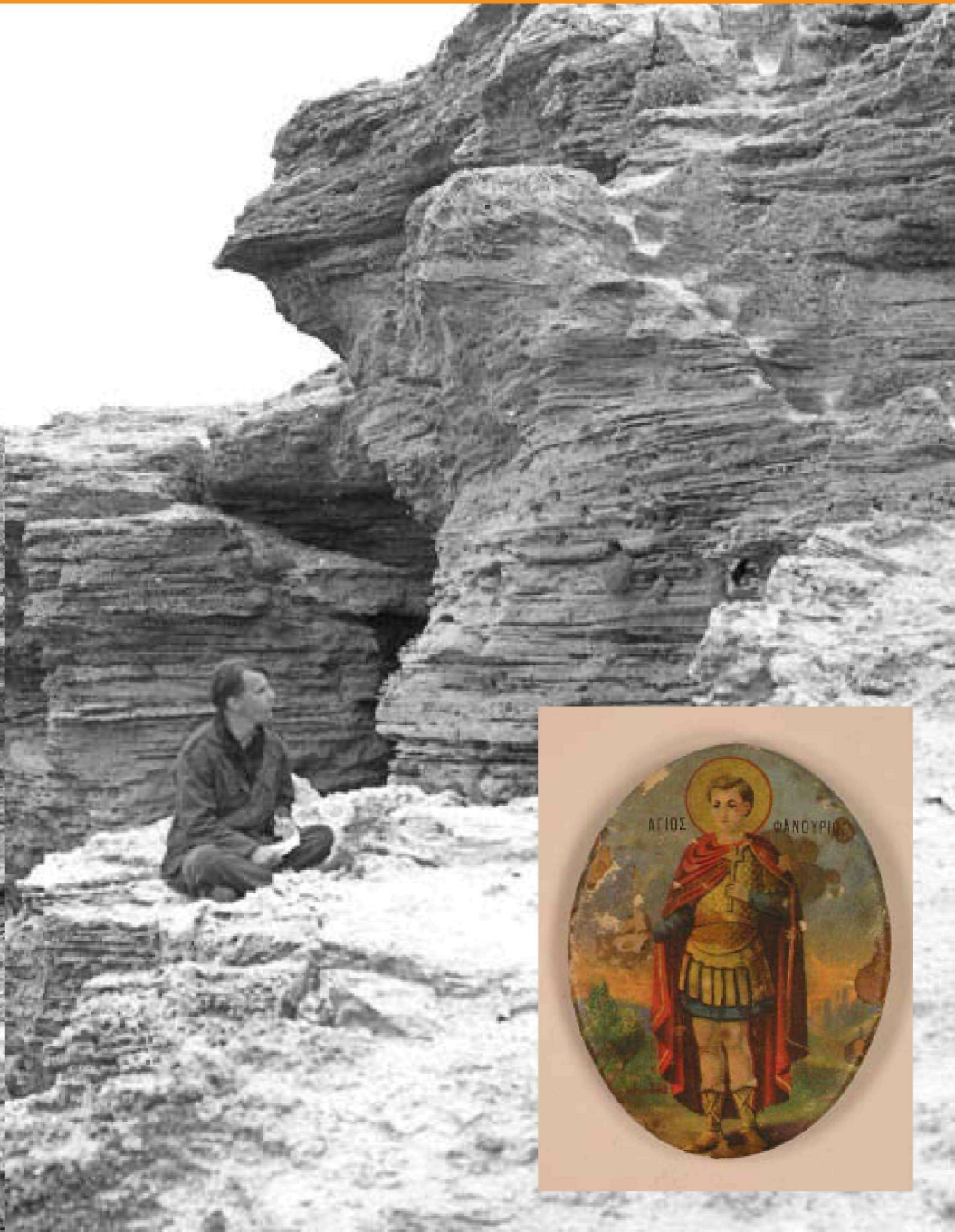
## Opgravingen en/of onderzoek

Kreta, Karpathos, Cyprus,  
Gargano, Sardinië, Majorca,  
Menorca, Filippijnen, Timor,  
Java, Sulawesi, Flores,  
Ryukyu eilanden, Kyushu





# Cyprus (1965, 1968)



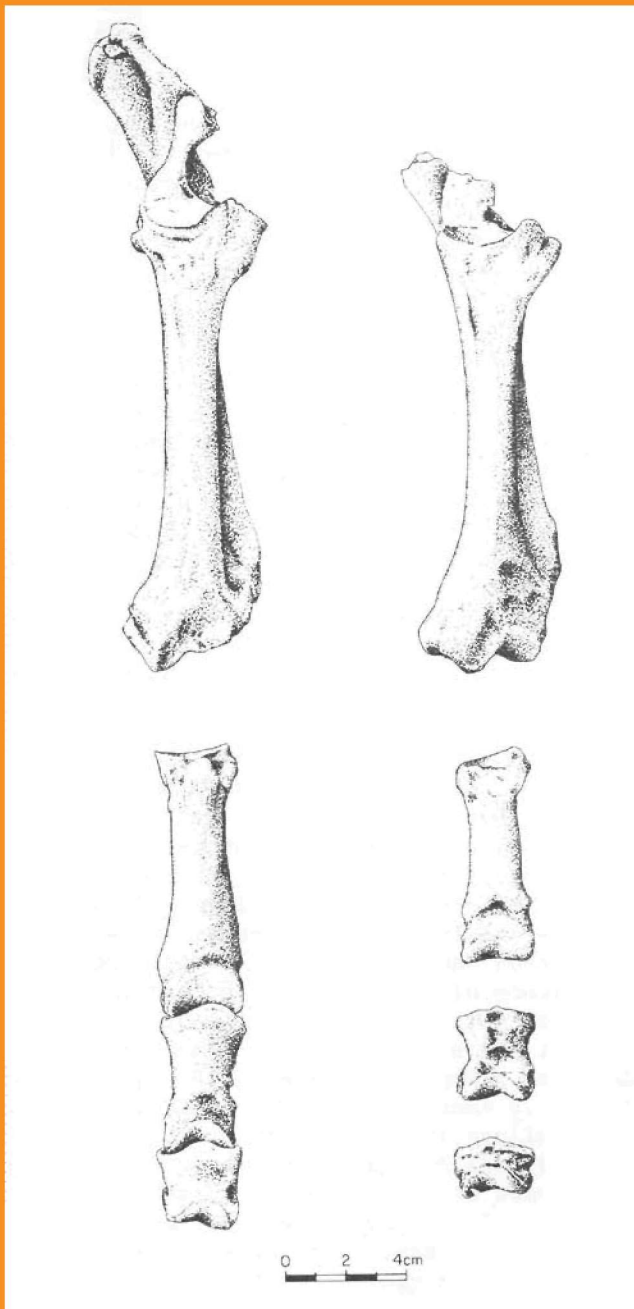
*Phanourios minor* Sondaar et Boekschoten 1972  
ter ere van Sint Fanourios



Cyprus nylpaardje

Vastelandsnylpaard (de voorouder)





1977 overzichts-artikel:

Verdwerging of verreuzing

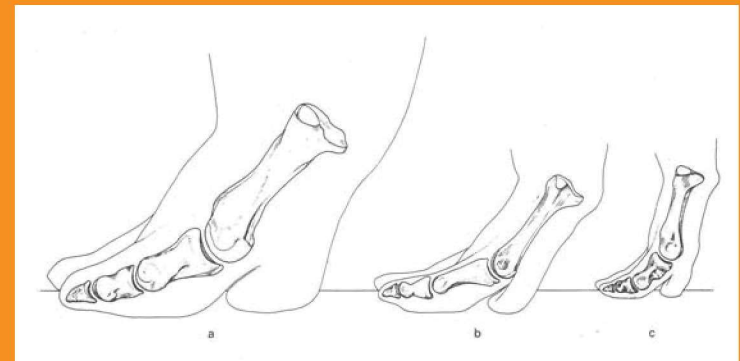
Korte poten

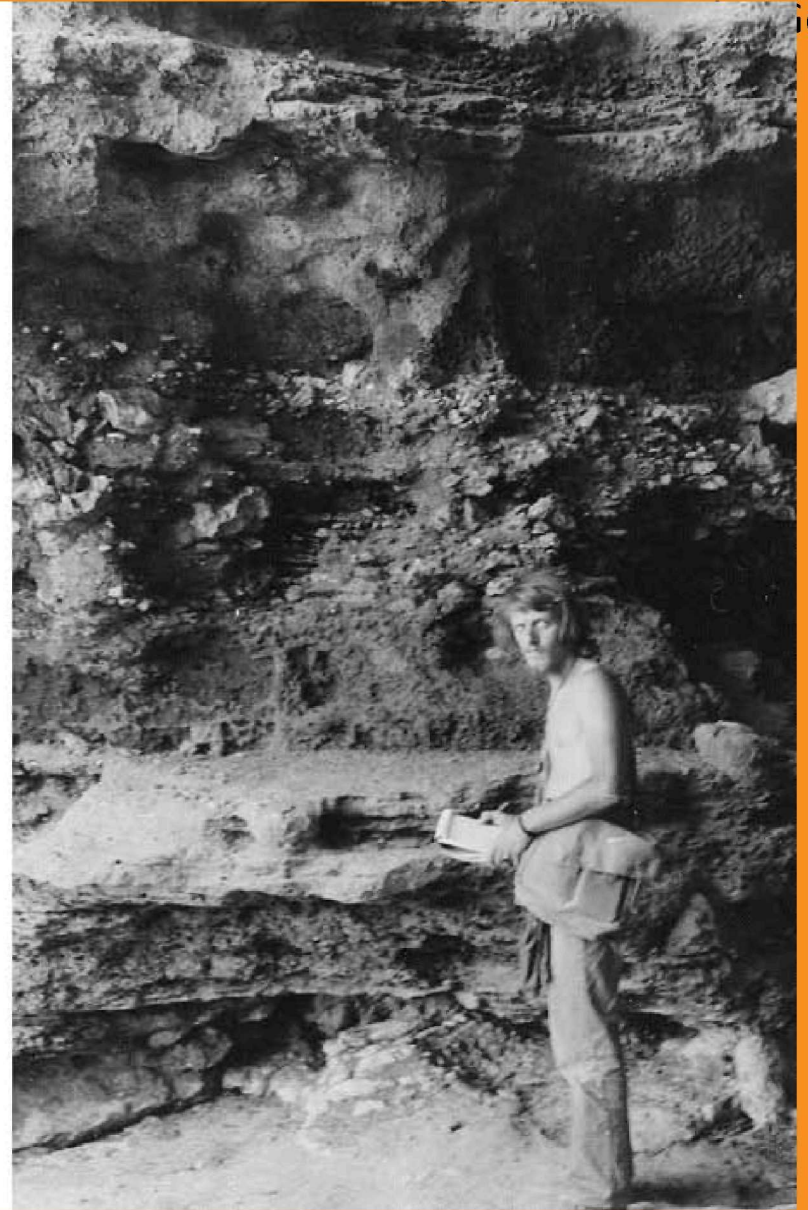
Vergroeiingen

Anders lopen

Aanpassingen in gebit

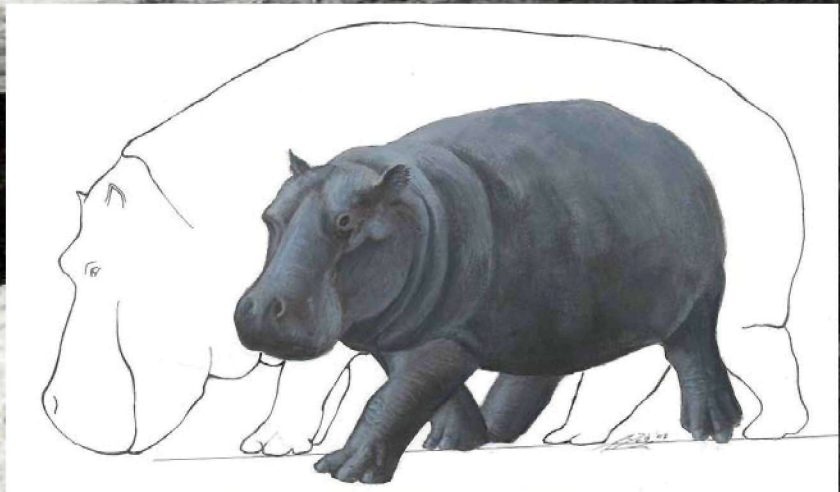
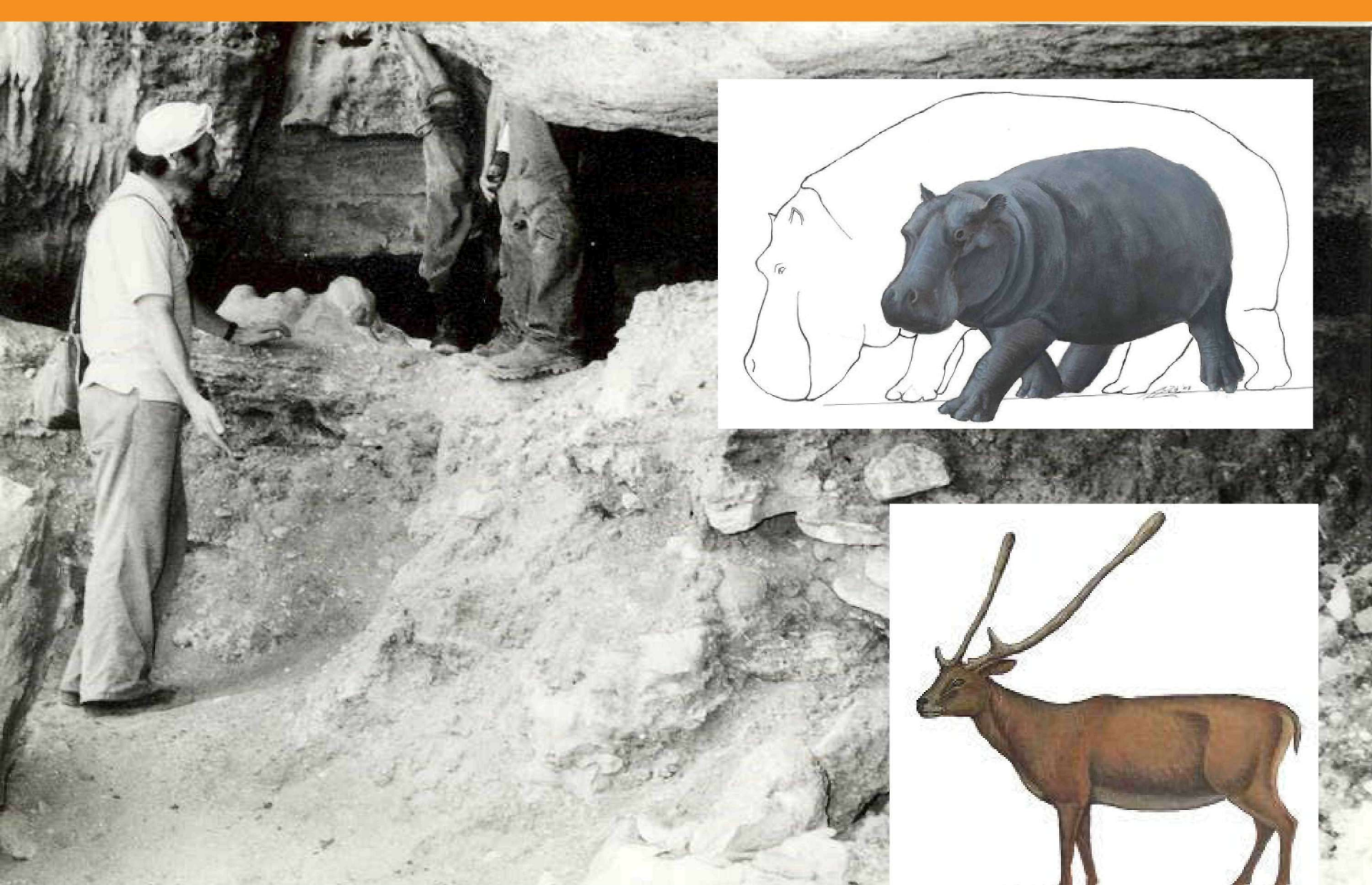
Sondaar P.Y. 1977. Insularity and its effect on mammal evolution. In: Hecht M.N., Goody P.L. Hecht B.M. (eds), *Major Patterns in Vertebrate Evolution*. New York: Plenum, pp. 671–707





Met studenten naar Kreta, jaren '70

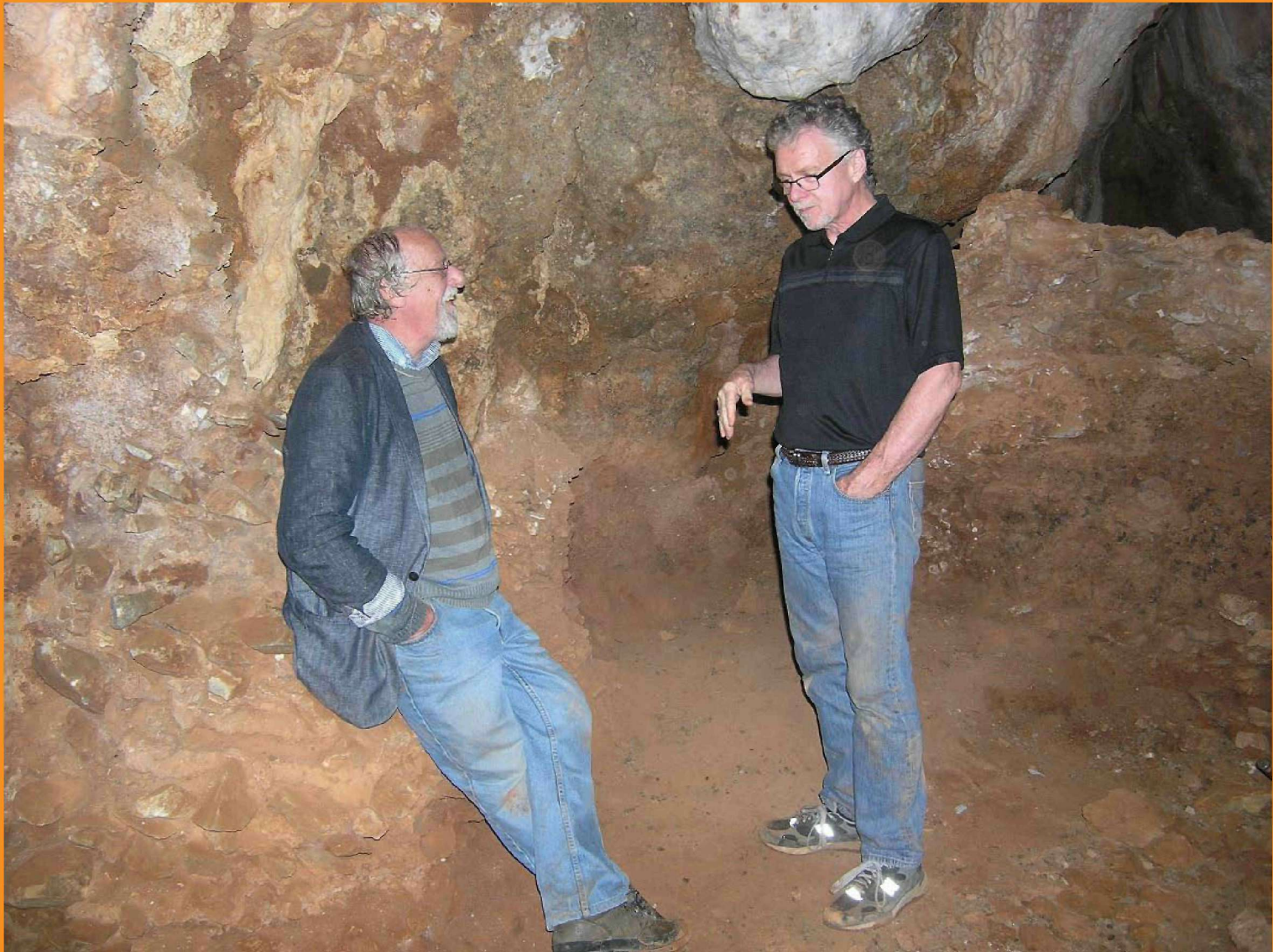




dwergherten, dwergmammoeten,  
dwergolifanten, dwergnijpaarden,  
reuzenratten en -muizen



Ongeveer 35 jaar later, één van die studenten keert terug:



John de Vos

Ross MacPhee



Met een kopie van de originele notities:





Terug naar Paul Sondaar:  
Een eiland met fossielen en stenen werktuigen:  
op zoek naar vroege menselijke bewoning

## Sardinië, 1983

De grot Corbeddu in het  
Lanaittu dal

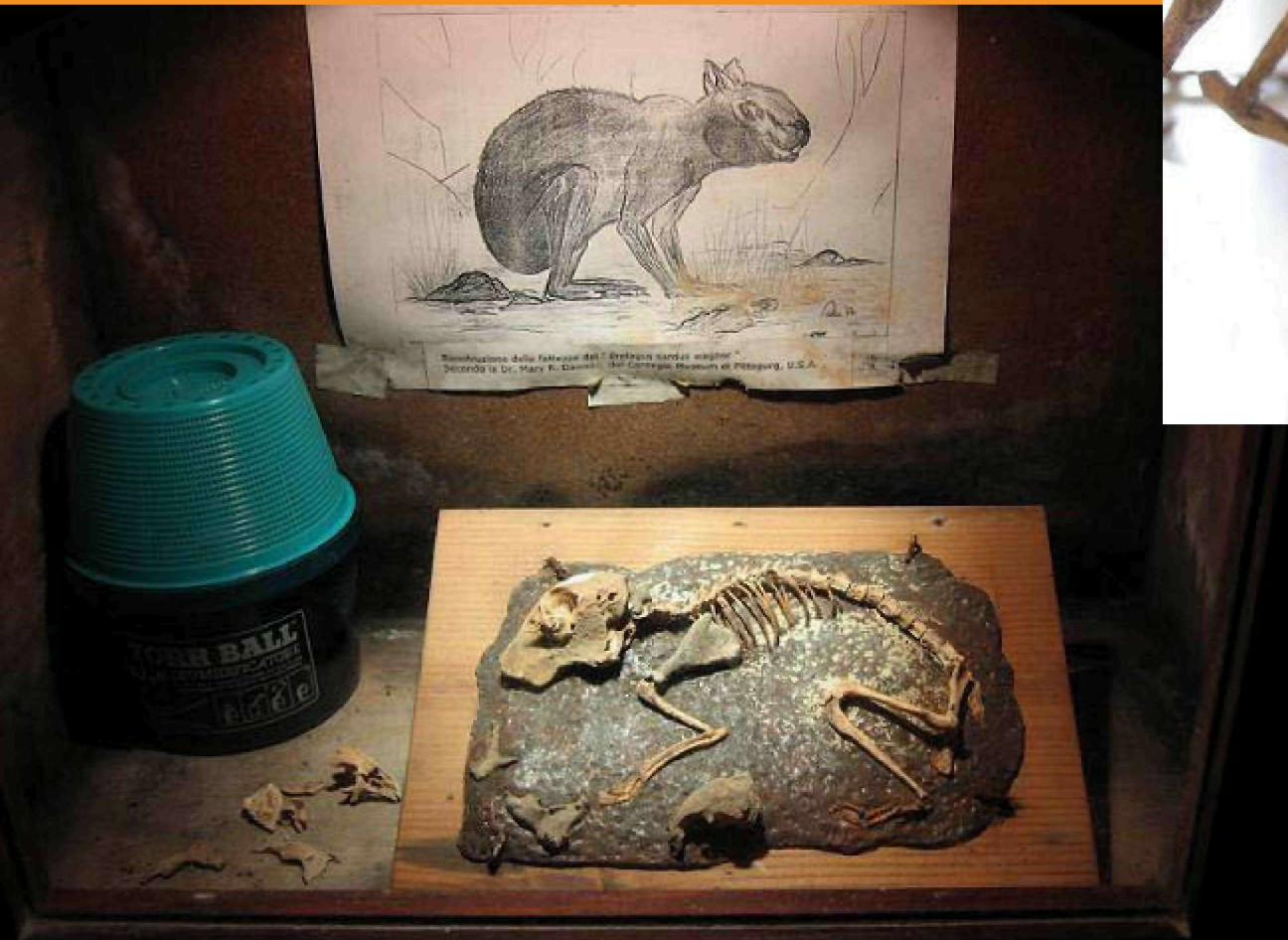




Waarom de grot Corbeddu?

Mary Dawson had hier fluithazenfossielen beschreven in 1969.

Dus: fossielhoudende lagen!



De fluithaas van Sardinië was immers een reus -> eilandevolucie

Mary Dawson bezig met de reconstructie van *Prolagus sardus* (ca. 1966)







Naturhistorisch Museum Basel, Zwitterland



# Terug naar Corbeddu en Paul Sondaar



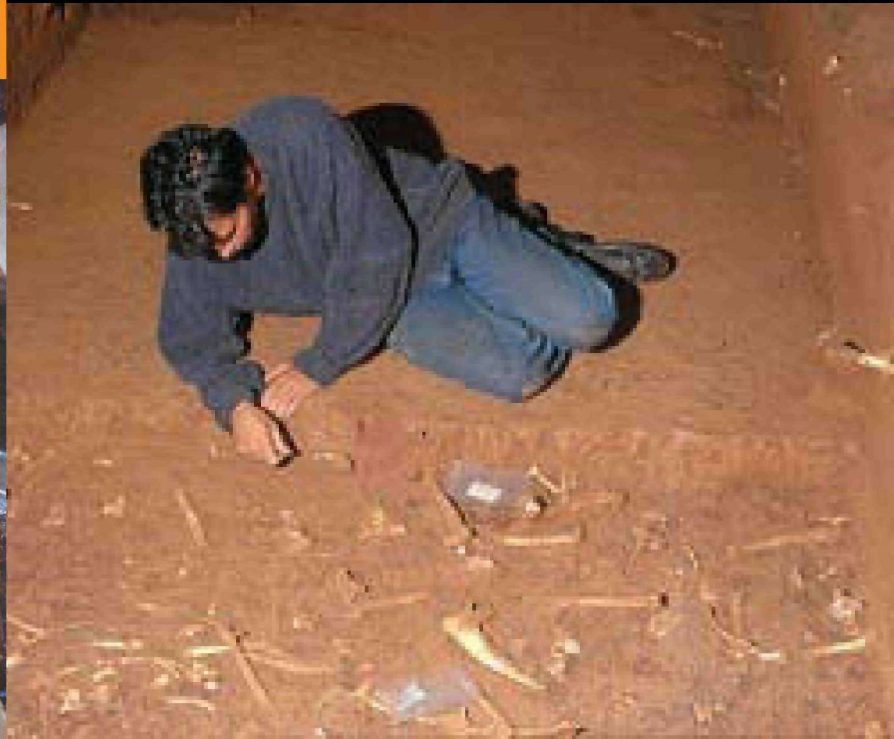
gruppo grotta corbeddu, oliena, sardegna 1986





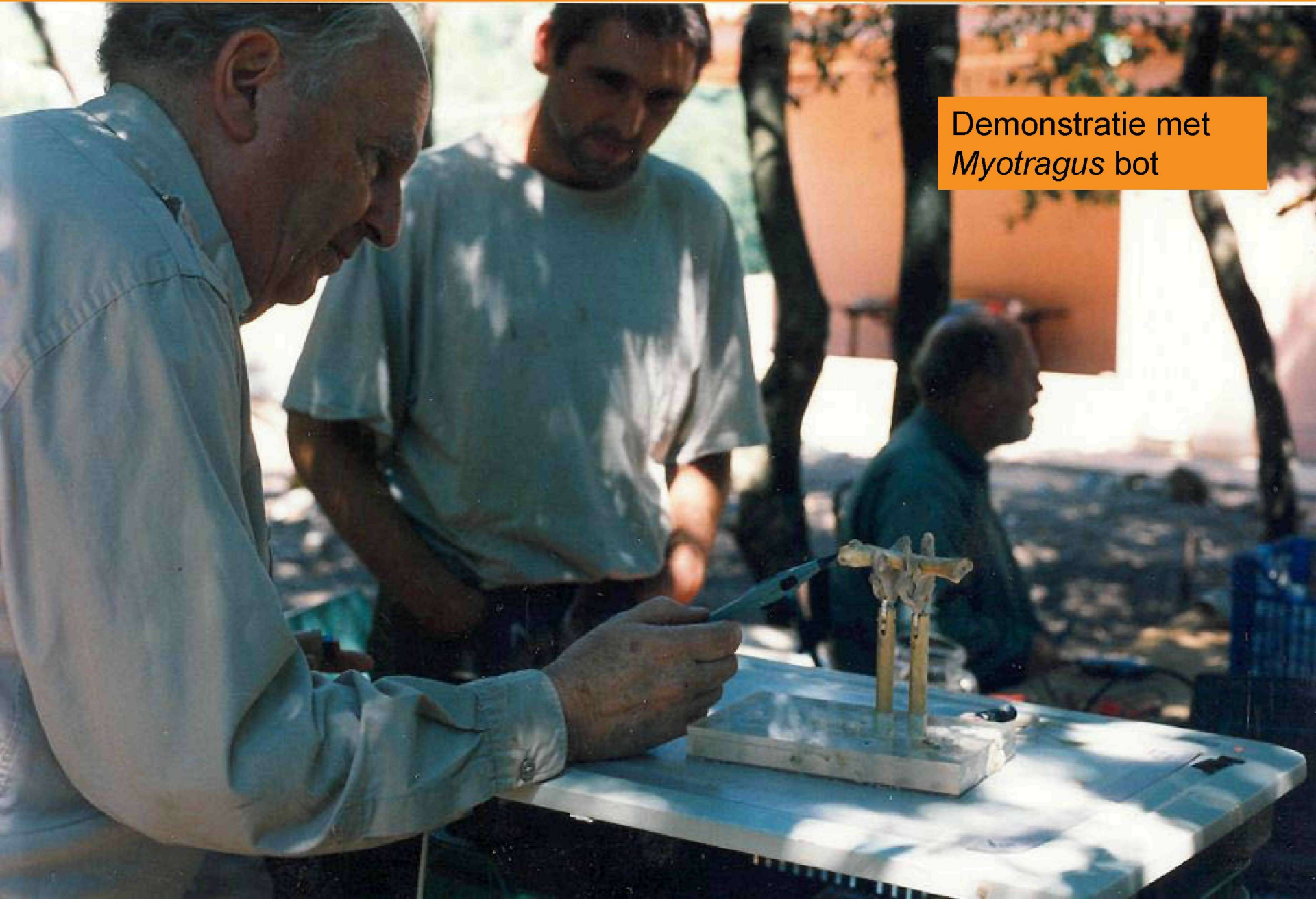


Tien jaar opgraven in de zomermaanden





Eerste begin van moderne technieken, de wieg van 3D-morfometrie, ontwikkeld door Leslie Marcus (American Museum of Natural History, New York)



Demonstratie met  
*Myotragus* bot



Goed contact met Verhoeven (bezoekt in 1988 Corbeddu grot):

1991, op zoek naar meer bewijs voor vroege mensen op Flores





Dwergstegodonten, reuzenratten.....



Foto John de Vos



En stenen werktuigen in associatie met endemische fauna



28 October 2004

International weekly journal of science

GROO 122

# nature

£10.00

www.nature.com/nature



**Earthquakes**  
Prediction back  
in vogue

**Martian ice**  
A moving story

**MYC-induced  
cancers**  
An on-off  
relationship

## Short for her age

Third Asian *Homo* species reveals  
diversity of Pleistocene humanity

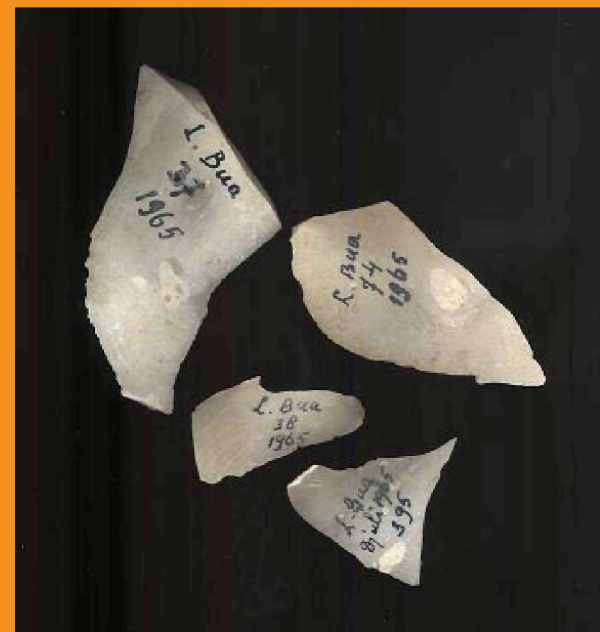
**naturejobs** fast-track postdocs

Paar jaar later, ook een  
dwergmens

2003: fossielen in de grot Liang  
Bua (waar Verhoeven eerder ak  
werktuigen vond)

Gedateerd op ongeveer 17.000  
jaar geleden: Oude Steentijd

Een nieuwe soort:  
*Homo floresiensis*





*Homo floresiensis* was onderdeel van een eilandfauna met reuzenvaranen, reuzenratten, dwergstegodonten, reuzenmaraboe's











## OSL Dateringen (Optically Stimulated Luminescence)

= Nu willen we weten hoe oud dat  
dwergnijlpaard

Tijd van macroscopische  
ontdekkingen lijkt voorbij,  
nu vooral microscopische  
ontdekkingen





## Toekomst:

Moleculaire studies  
Populatie dynamiek  
3D geometrie  
DNA  
Dateringen  
Histologie (microscopie)  
Enz.



# ISOLARIO

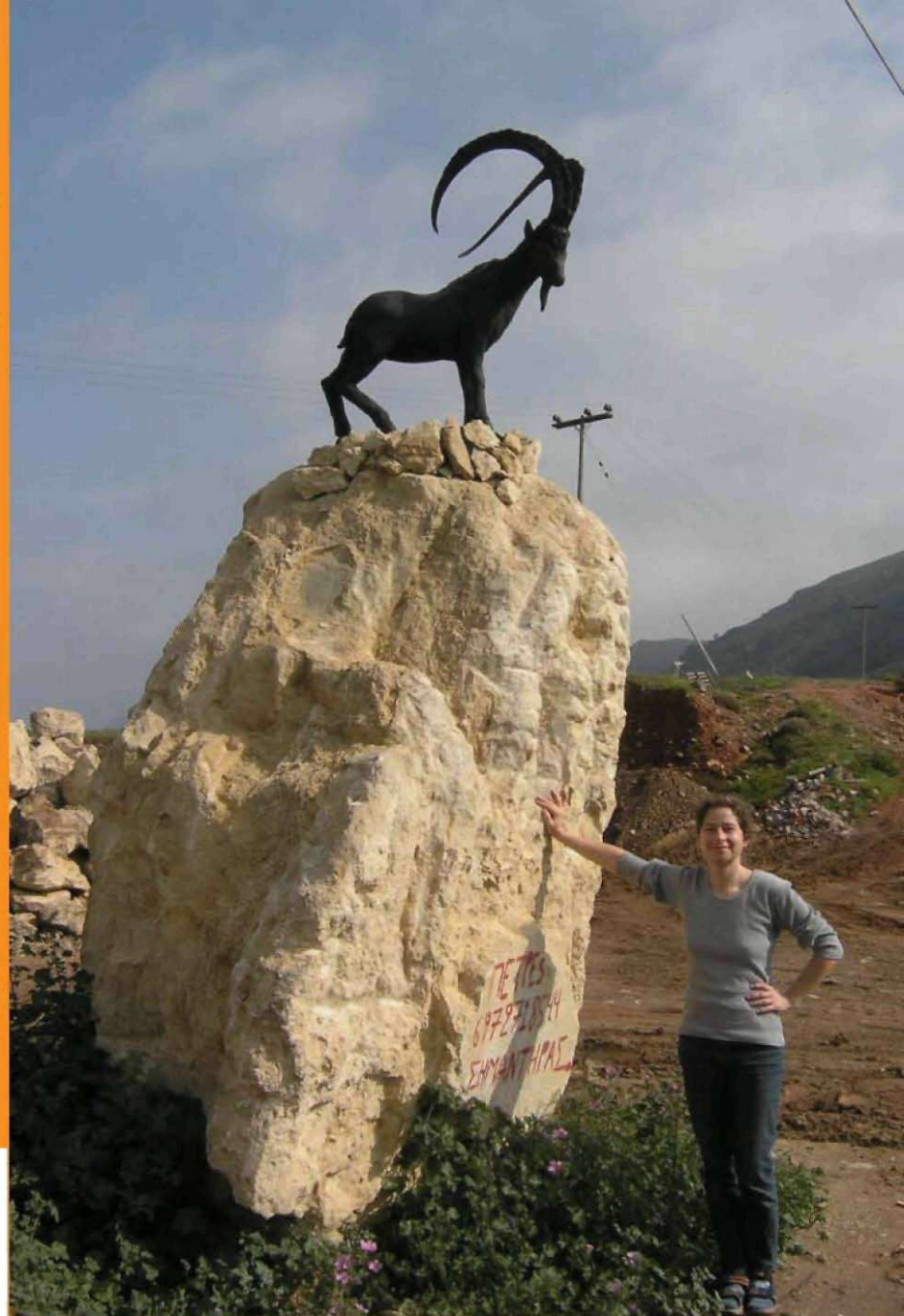


Island biodiversity and cultural evolution



National and Kapodistrian  
UNIVERSITY OF ATHENS

Bedankt voor  
uw aandacht



Kreta, *Capra aegagrus*



European Union  
European Social Fund



OPERATIONAL PROGRAMME  
EDUCATION AND LIFELONG LEARNING  
*investing in knowledge society*  
MINISTRY OF EDUCATION & RELIGIOUS AFFAIRS  
MANAGING AUTHORITY

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