

# Horses, skylight, blood-sucking horse flies and white stripes

*Prof. Susanne Åkesson*

*IgNobel 2016  
Harvard University*



**LUND UNIVERSITY**  
Centre for Animal Movement Research



# International (Hungarian, Swedish, Swiss) research team



Gábor Horváth



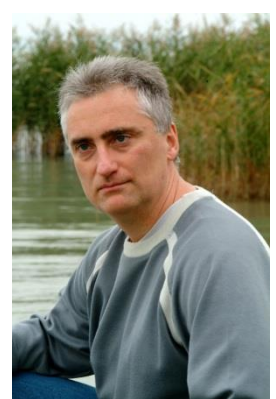
Miklós Blahó



Ramón Hegedüs



Balázs Gerics



György Kriska

optical physics, entomology and ecology



Róbert Farkas



Péter Malik



Hansruedi Wildermuth



Susanne Åkesson





Morita et al. 2016 , Systematic Entomology

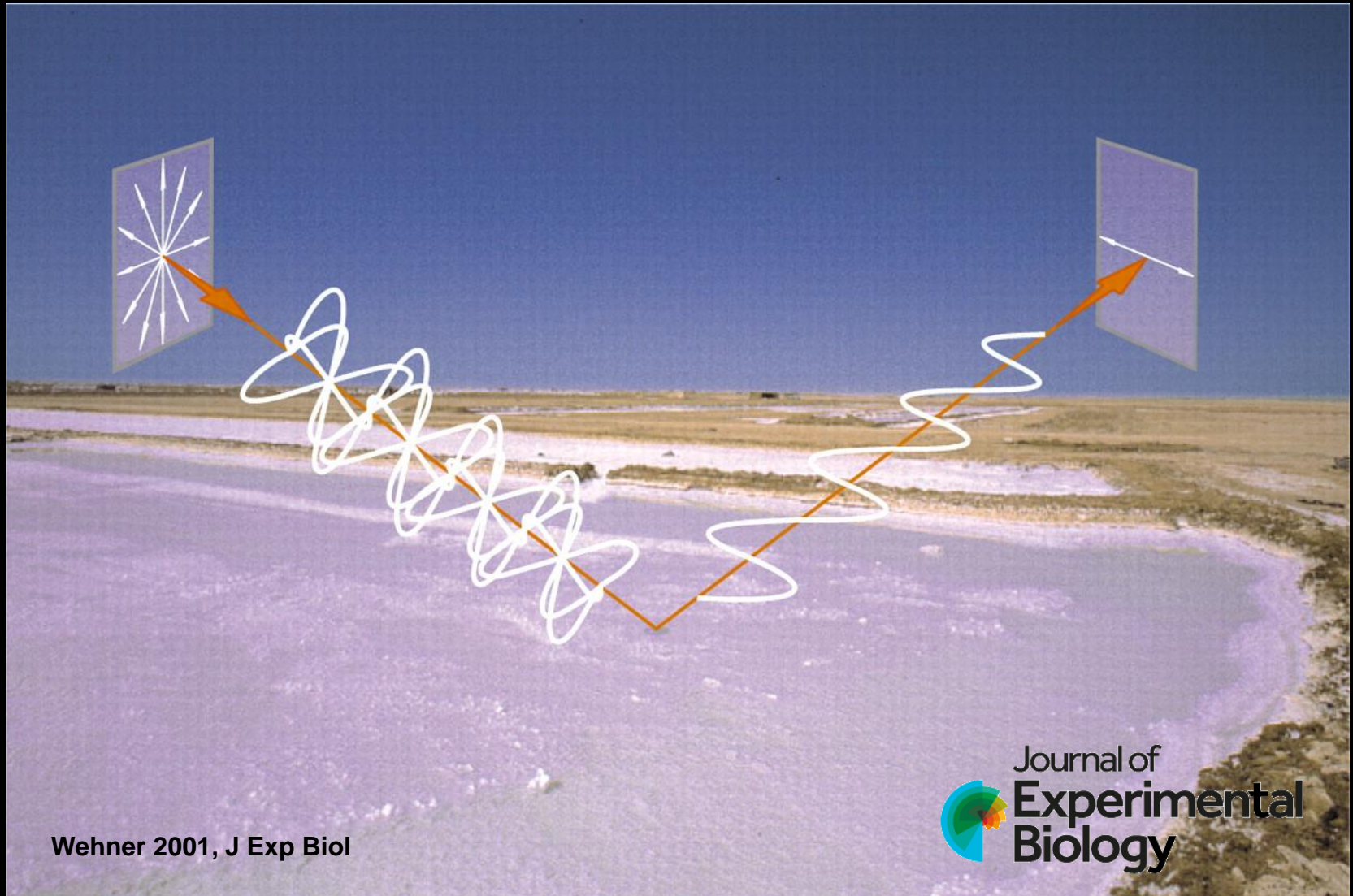
>4400 species  
of  
horse flies  
(Tabanidae)



*Photo: Susanne Åkesson*



# Polarization arising from the reflection of light by a water surface







*Photo: Susanne Åkesson*

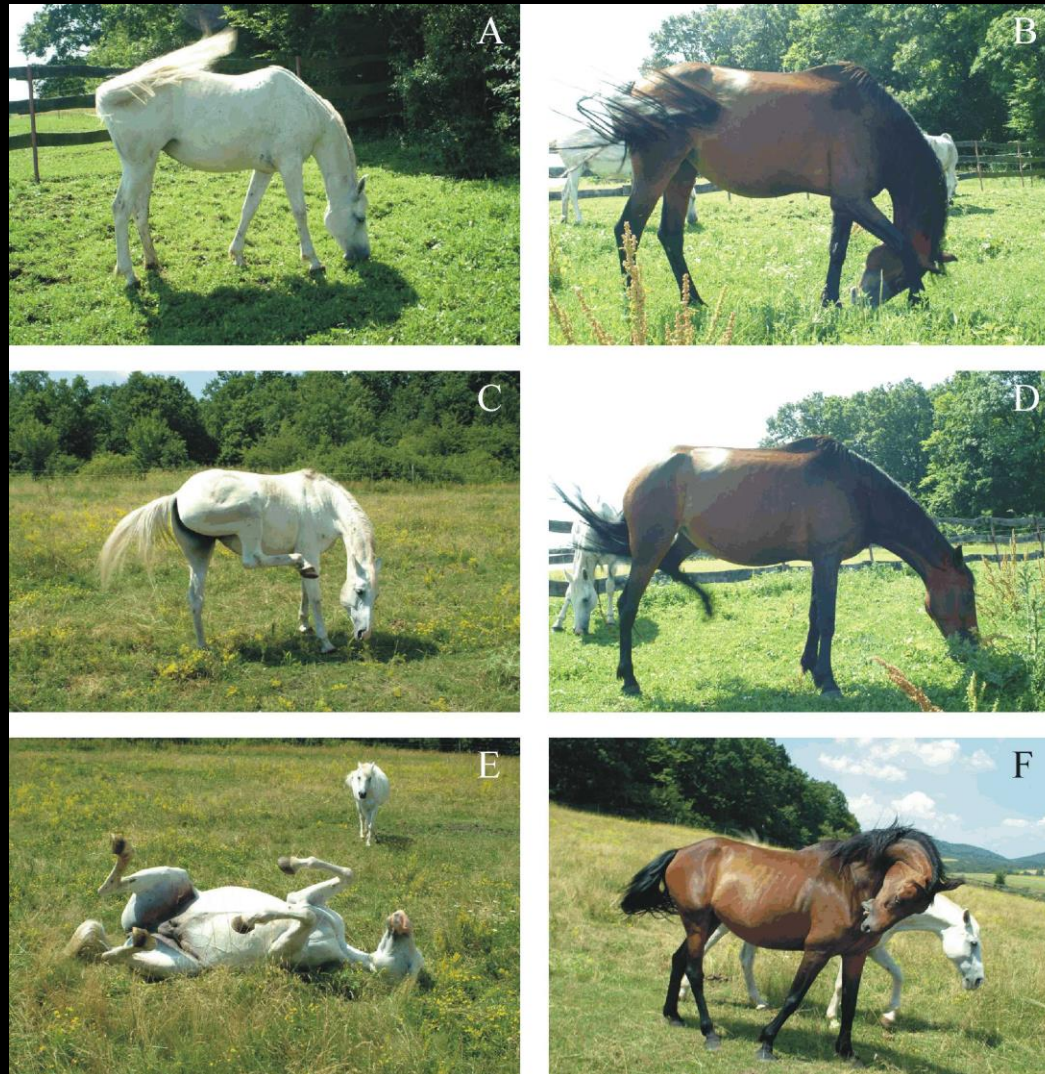




Photo: Susanne Åkesson



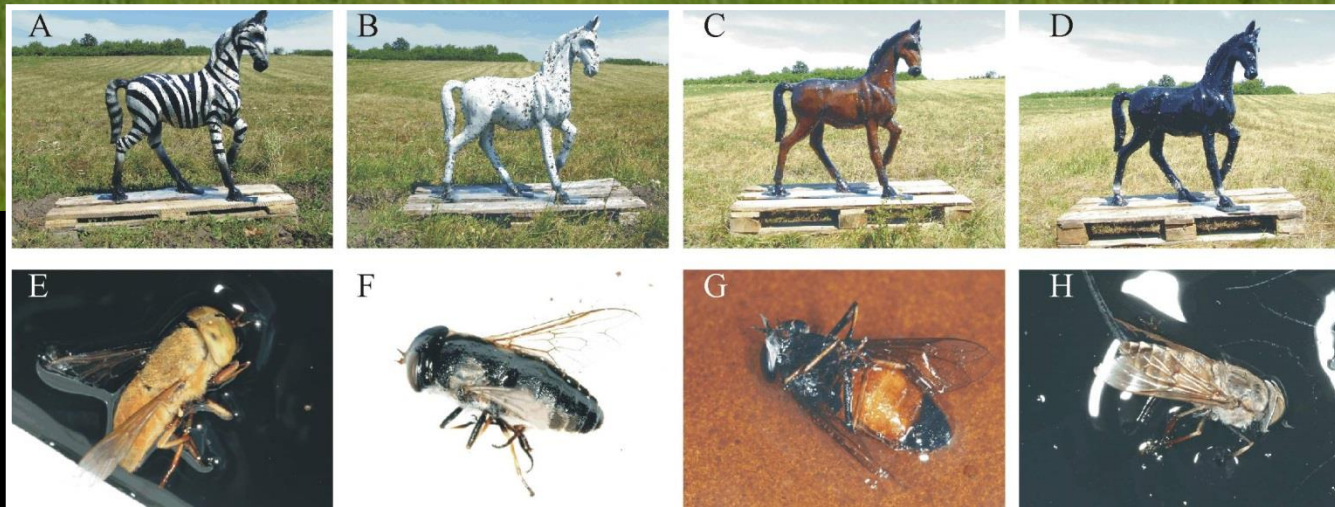
# Typical defensive behaviours





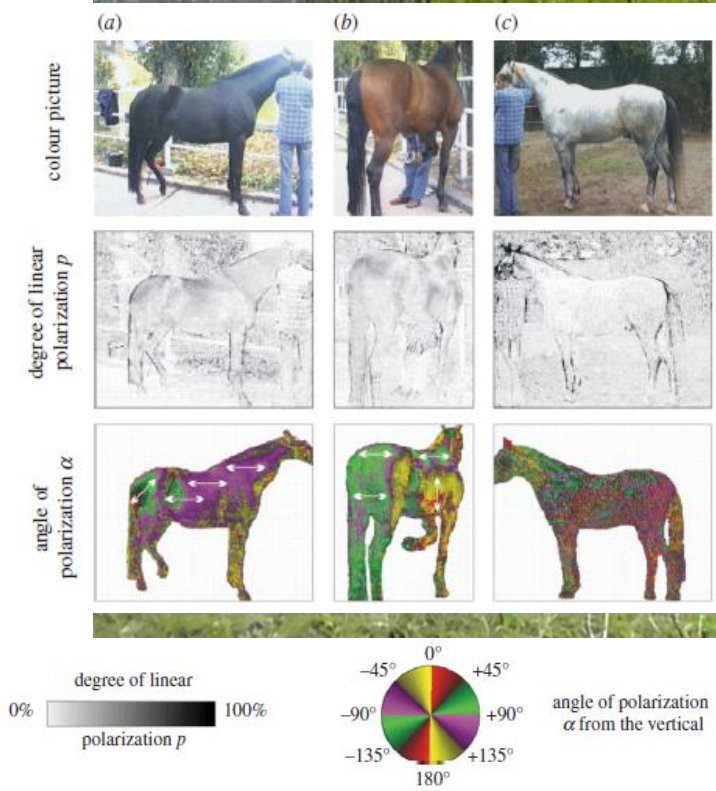
# Experiments with models in the field

Sir David Attenborough visiting our field site in his BBC series *Attenborough's Natural Curiosities*.

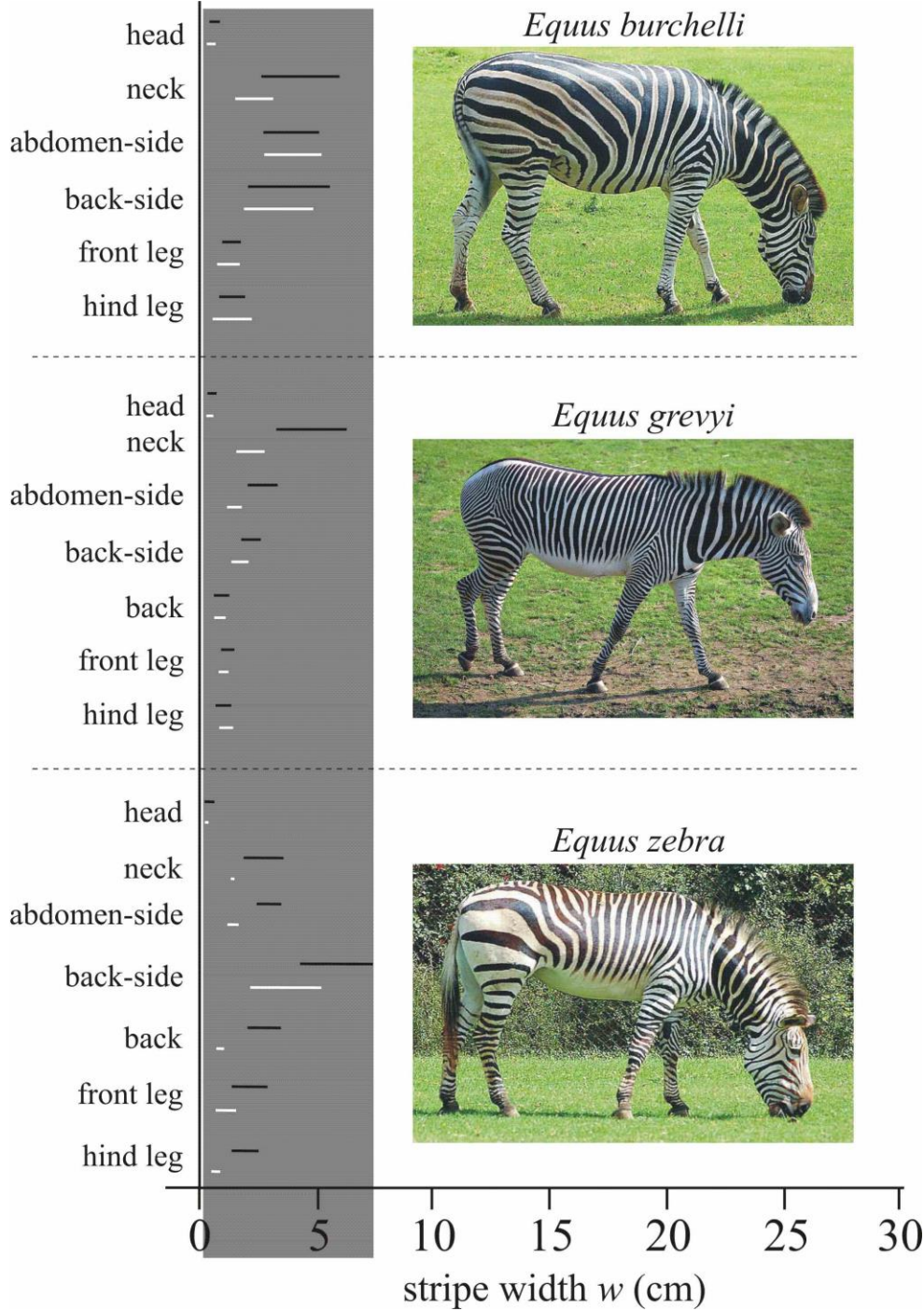




# Measurements of linearly polarized horse-reflected light

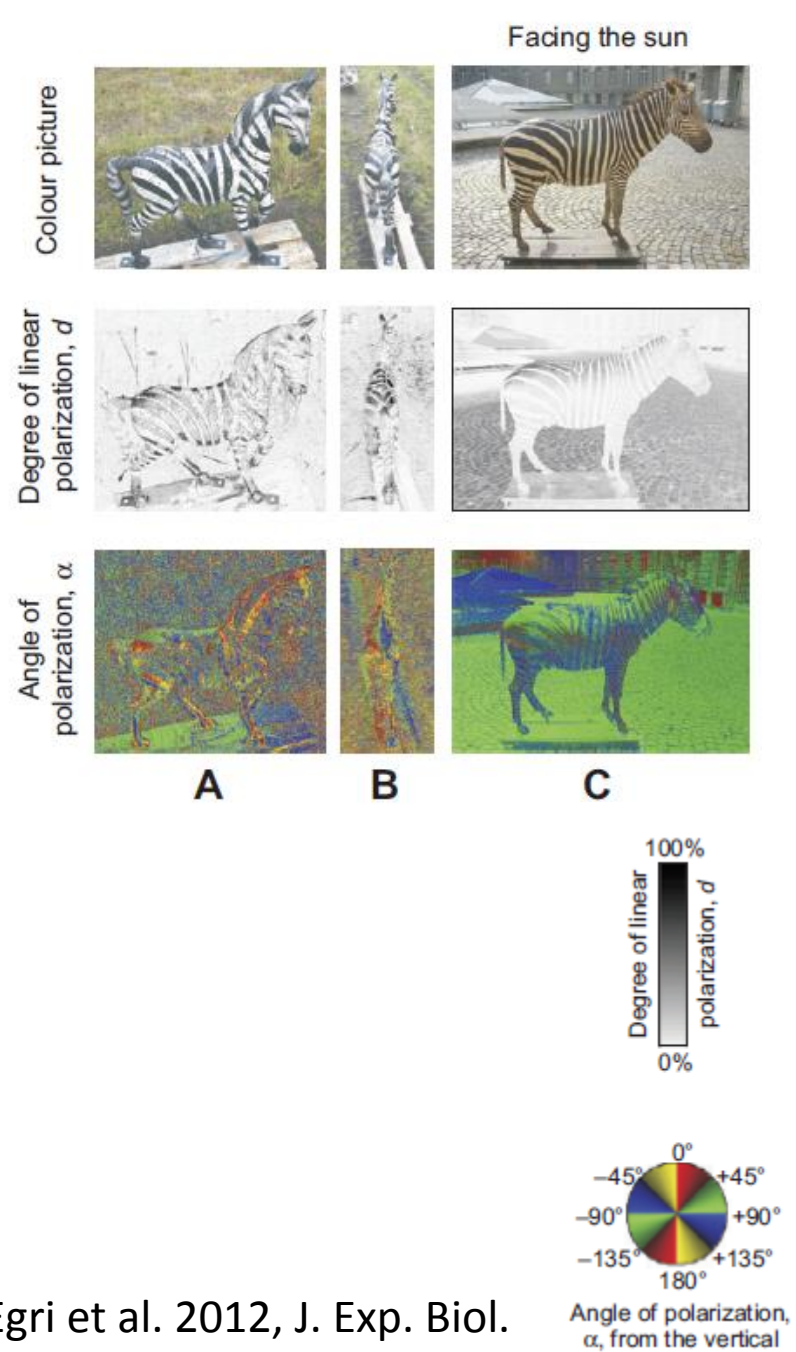
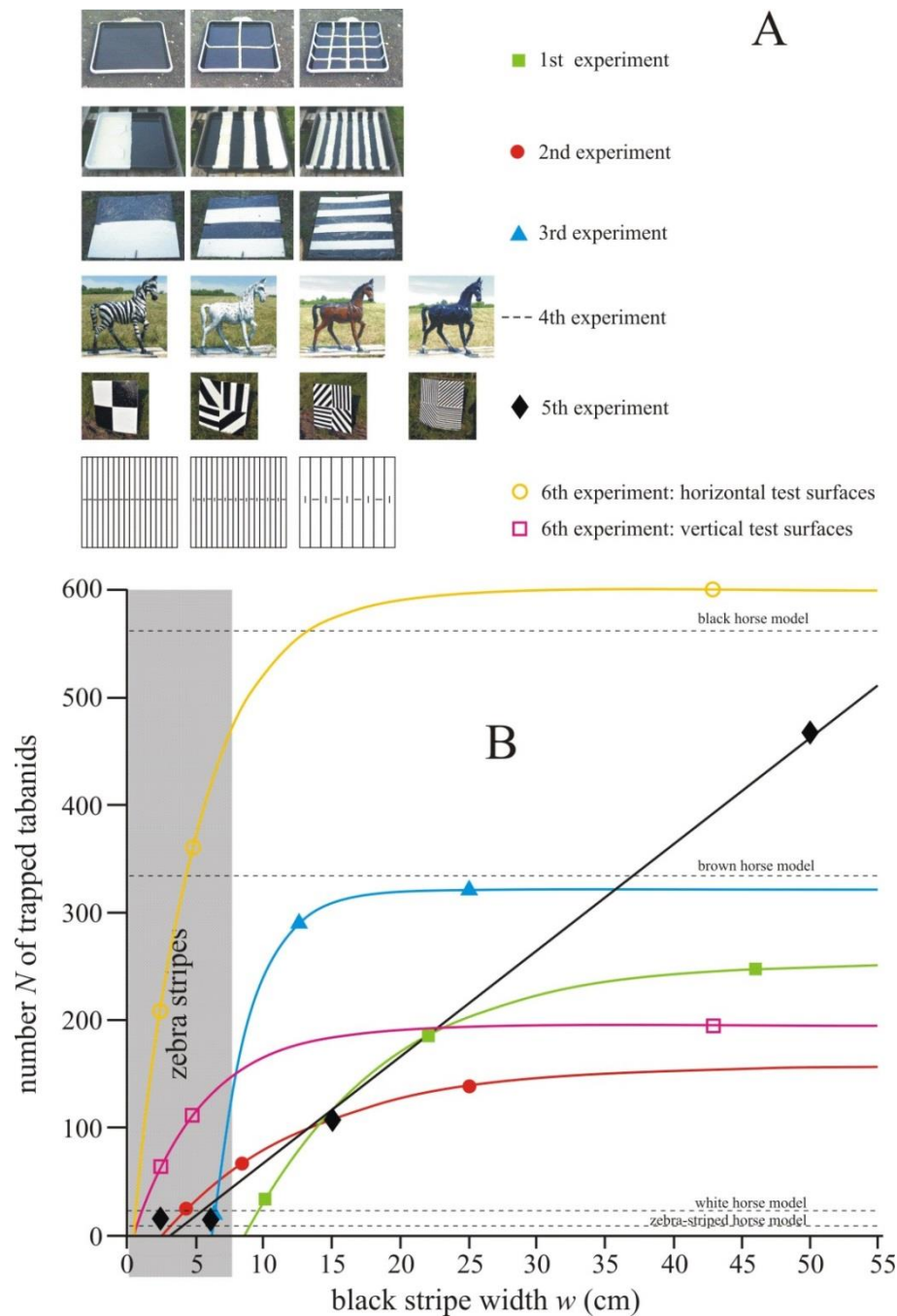






*Did zebras evolve  
a striped coat  
pattern as  
protection against  
tabanid flies?*





Egri et al. 2012, J. Exp. Biol.



# If you cannot make it – fake it!

← → ↻ 🏠


www.equiport.co.uk/products/horse/stable-and-turnout-rugs/buzzoff-zebra-full-neck-fly-sheet-bu03/

🔍 ⭐ ☰

📱 Apps 🌐 Global Change ... 📺 C++ Qt Progra... 🏠 IDŐJÁRÁS 🌐 Setting up AVR ... 📱 Index 📱 Engbedded AV... 📄 How to series 📱 Interfacing DC ... 📱 atmega - Using ...

NEED HELP? CALL US ON (+44) 01565 723 525


NOT LOGGED IN | LOG IN NOW | MY WISH LIST (0)

EQUIPORT  
EQUESTRIAN SUPPLIES

PRODUCT SEARCH 🔍

🛒 YOUR BASKET IS EMPTY

NEW IN | RIDING WEAR | LEISURE WEAR | HORSE | STABLE | DOG | BRANDS | SPECIAL OFFERS



## BUZZ-OFF ZEBRA FULL NECK FLY SHEET

by Bucas

FROM: **£99.00** PRODUCT ID: BU03

The Bucas Buzz-Off Zebra Full Neck Fly Sheet is a fly, insect and UV protective rug made from a specially developed lightweight fine mesh fabric with zebra print.


Zebra print? Yes, really. This fly sheet doesn't just look amazing, there's a scientific principle behind it too.

Scientists painted wooden pallets containing vegetable oil different patterns of black and white stripes or all black or all white. These pallets were then placed in a fly-infested field and results showed that there were far more flies in the black painted pallets, fewer in the white but the fewest flies of all were found in the pallets painted with very thin black and white stripes.

Afterwards, researchers carried out a similar trial on model horses covered in glue. At the end of 59 days, the black horse had caught 562 flies, the brown one 334, the white one 22 and the zebra patterned horse had just 8! It is thought that the flies find the stripes confusing and as a result they tend to steer clear.

Based on this research, Bucas has developed a fly rug with thin zebra-like stripes, to keep horses free from the stresses of summer flies for good. The mesh blocks even the smallest of insects and reduces the effects of ultraviolet radiation.

- The overlapping, padded and lined front provides superb comfort





# A true story



*Photo: Håkan Olsson*



# ***Thank you!***



***Prof. Susanne Åkesson***



**LUND UNIVERSITY**  
Centre for Animal Movement Research

*by György Kriska*

**"I've already solved the Tabanid problem."**