

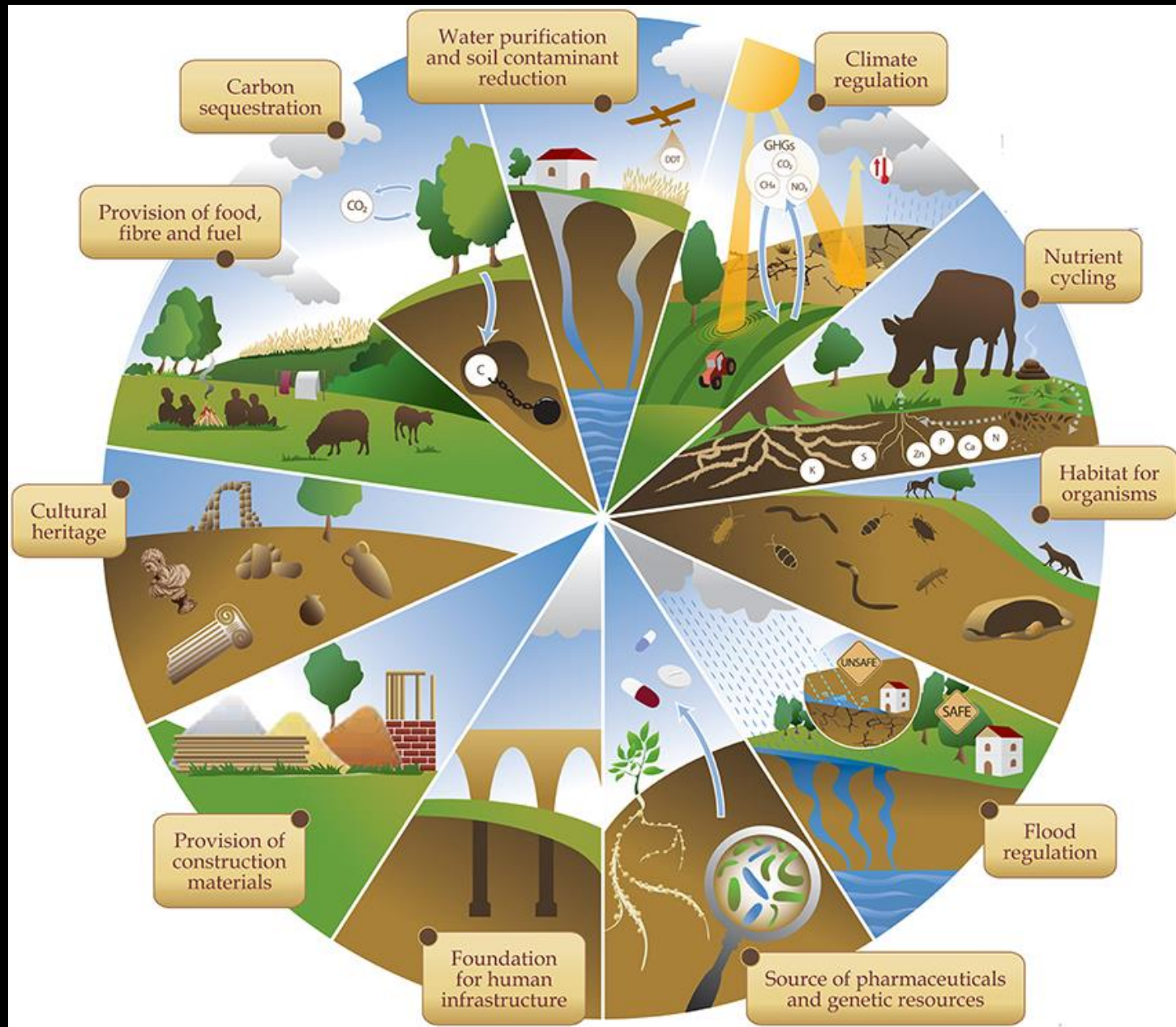
27TH NATIONAL CHILDREN'S SCIENCE CONGRESS

**SCIENCE, TECHNOLOGY, INNOVATION FOR CLEAN,
GREEN, HEALTHY NATION**

FOCAL THEME

ECOSYSTEM AND ITS SERVICES

DR.G.V.GOPINATH,
VICE PRINCIPAL,
APSA COLLEGE,
gvgopinath@gmail.com
9360320559





Tropical Rainforest



Temperate Forest



Coniferous Forest (Taiga)



Tropical Grassland (Savannah)



Temperate Grassland



Mediterranean



Desert



Tundra



Mountain

Stenocara gracilipes
Water harvesting beetle



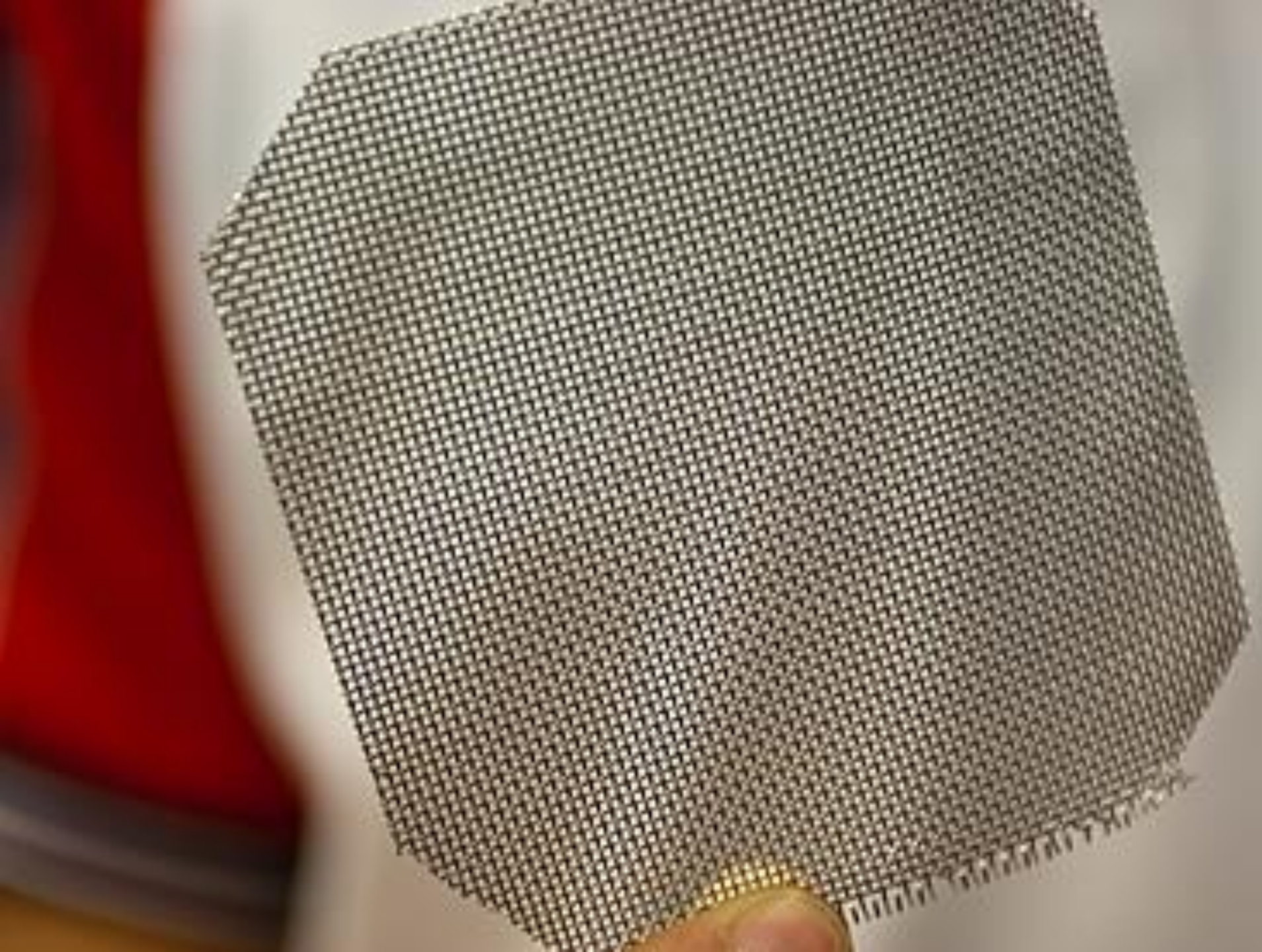






Do you know the insect named as onymacris unguicularis?
This insect is known for making dewdrop by using own body in desert.
By being inspired from this mysterious onymacris unguicularis, we want to provide waters to residents in desert who wander for water.





முலிகை குடிநீர் தயாரிப்பு முறை மற்றும் பலன்கள்



தேவையான பொருட்கள்

தேத்தான் கொட்டை
வெட்டிவேர்
காப்பர் பாத்திரம்
மண்பானை
வடிகட்டும் துணி

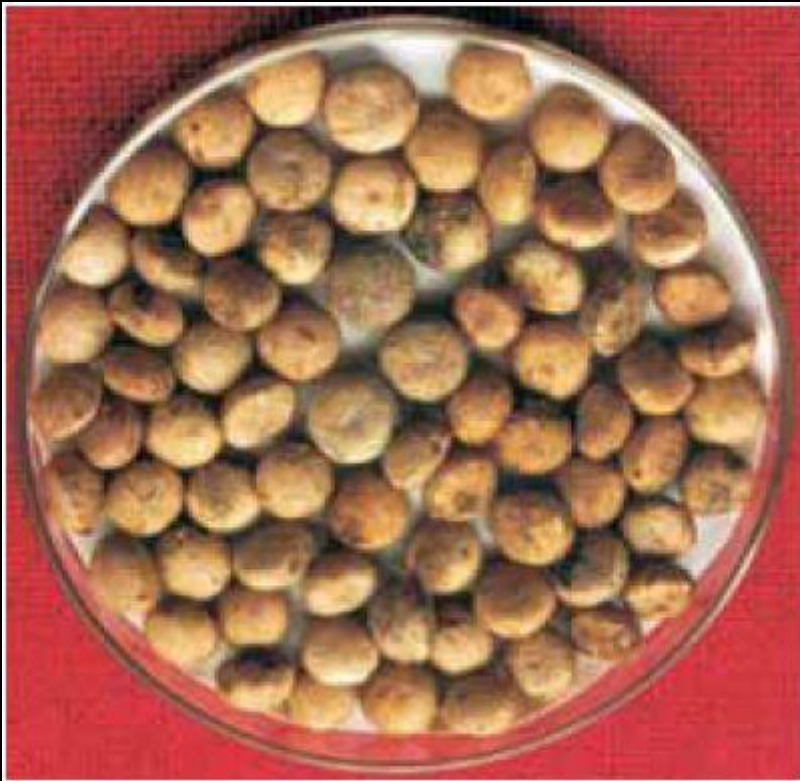
அன்பு
தமிழ்



பலன்கள்

உடலுக்கு தேவையான
தாதுப்பொருட்கள் கிடைக்கிறது
குளிர்ச்சியை தருகிறது
நச்சுத்தன்மையை போக்குகிறது
குறைந்த செலவு

Strychnos potatorum



ENVIRONMENTAL
HEROES

PLANT TREES - CREATE LIVES

Eichornia



STEM HARVESTING AND DRYING



FIBER AND PRODUCTS









BANANA TREE WASTE



BANANA FIBER AND FABRIC



AGAVE FIBER



 alamy stock photo

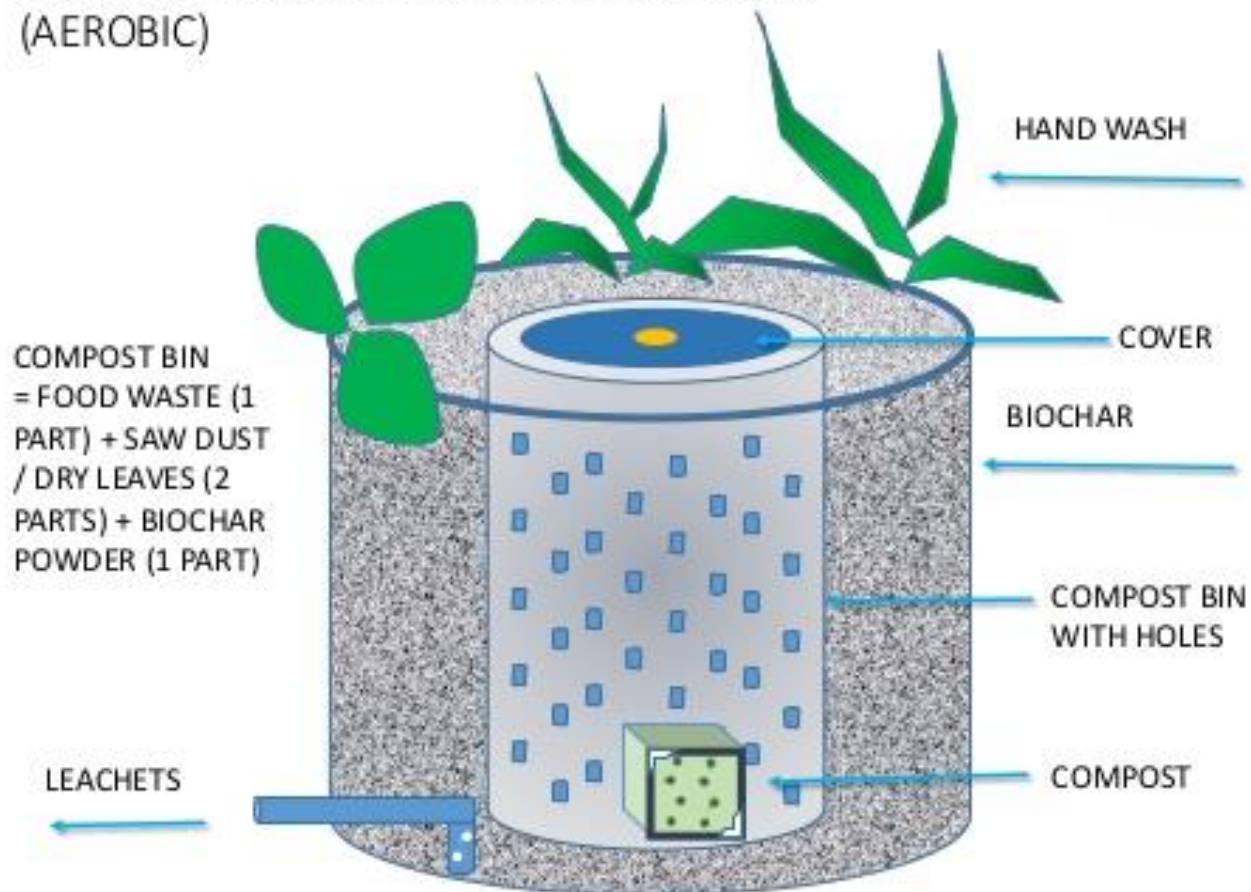
B8F84M
www.alamy.com





Aerobic compost

BIOCHAR COMPOSTING BIN WITH PLANTS (AEROBIC)



COMPOST REMOVAL OPENING FOR LARGE SIZE BIN

Dr. N. Sai Bhaskar Reddy

MEASURE THE FOLLOWING PARAMETERS

Total NPK (macro nutrients)

Organic carbon

C/N ratio

pH

Cu, Zn, Fe, Mn *etc.* (micronutrients)

Convert per ton

WEEDS ARE THE DOCTORS OF THE
SOIL

PROBLEMATIC SOIL



Soil reclamation using natural resources

Dhaincha



Sun hemp



இயற்கை விவசாயம் மற்றும் ஏனைய விவசாய
நிலங்களில் மண்ணில் உள்ள உயிரினங்கள் குறித்து
ஆய்வு செய்யலாம்

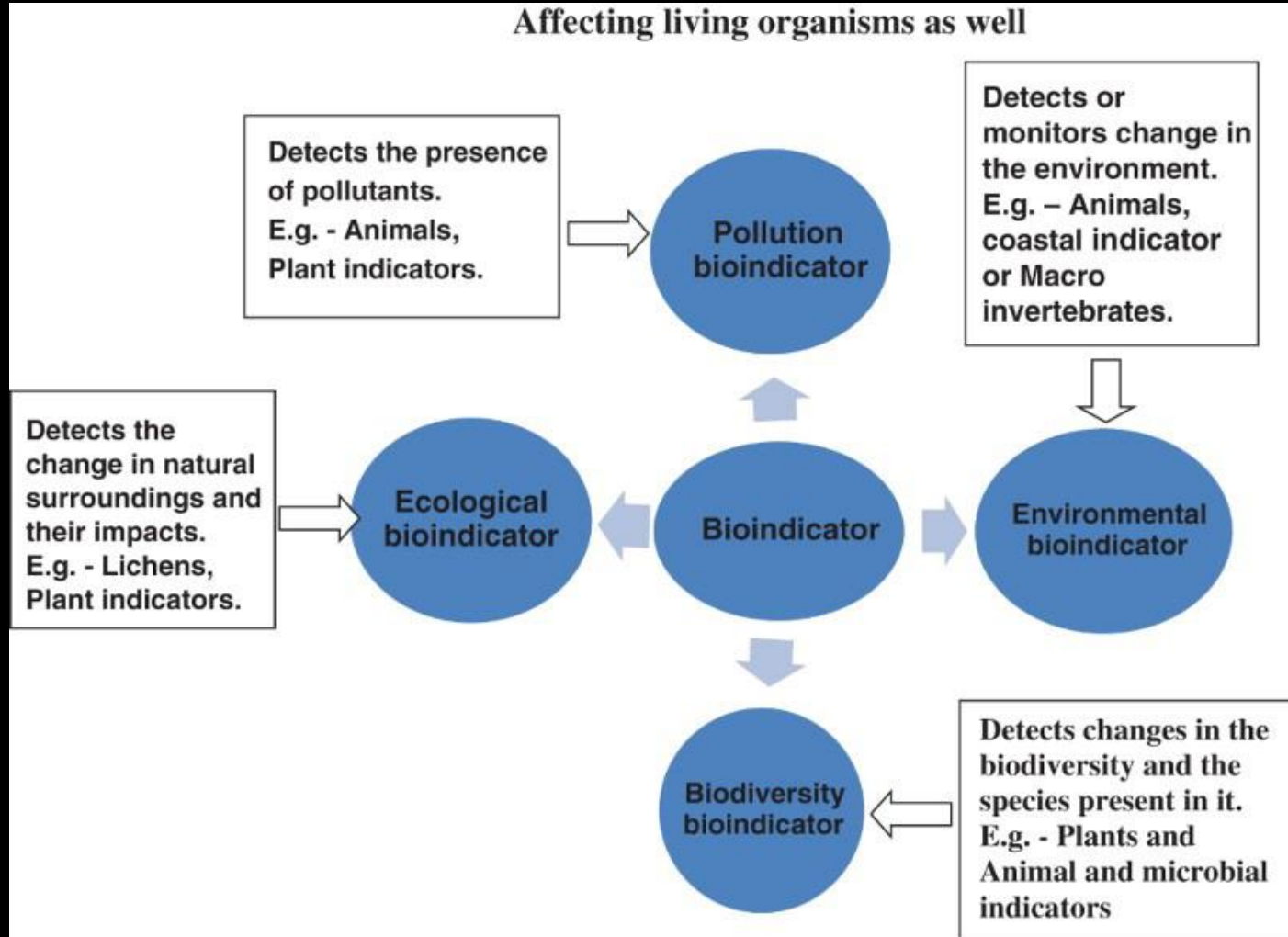
Soil Fauna

Classes of Soil Fauna

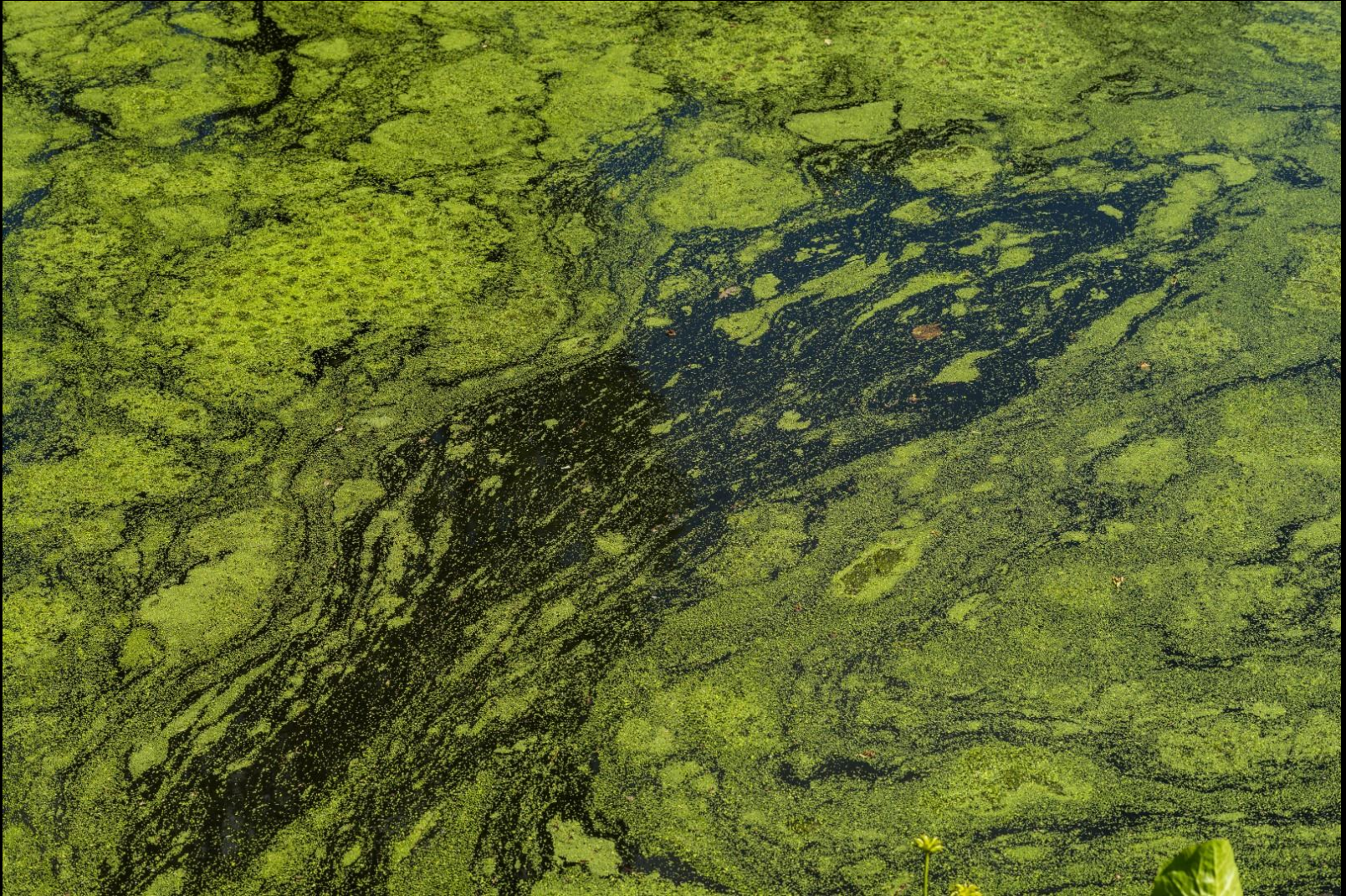
Soil fauna belong to one of three size
limit classes:

- Macrofauna (>2mm, width)
- Mesofauna (0.1-2mm, width)
- Microfauna (<0.1mm, width)

மாற்றங்களை தெரிவிக்கும்/ சுட்டிக்காட்டும் உயிரினங்கள் (BIOLOGICAL INDICATORS)

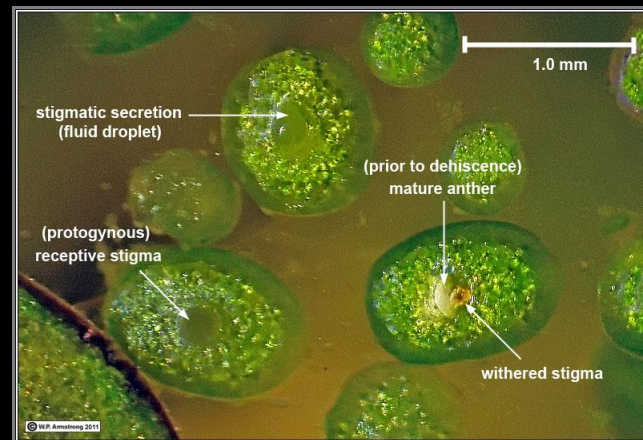


Algal bloom



Wolffia globosa

Biological indicator for Cadmium pollution



Acacia tetragonocarpa



நமது உடைமைகளை சேதபடுத்தும் பூச்சி இனங்களும்
அவற்றின் இயற்கை எதிரிகளை பற்றியும் ஆய்வு செய்யலாம்
(Pest and Predator study)

Insect Pest

Insect Predator

Mealy bugs

Lacewing, Ladybug

Mites

Lacewing, Ladybug,
Minute pirate
bug, **Predatory mite**

Mosquitoes

Praying mantis

Moths

Lacewing, Praying mantis

PREDATORS





POLLINATORS

TOP 10 POLLINATORS IN AGRICULTURE



THE POWER OF TEN



(MOTHS)



Garden tiger moth
Arctia caja
Wingspan 40–50mm. Nocturnal. Locally common in open areas. July to August.



Swallow-tailed moth
Drapetis verticaria
Wingspan 40–50mm. Nocturnal. Various habitats. June to August.



Hummingbird hawkmoth
Megachile oelandica
Wingspan 40–50mm. Diurnal. Common in gardens. May to September.



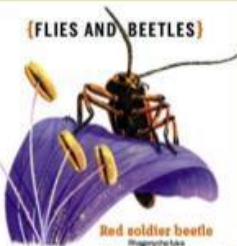
Elephant hawkmoth
Deilephila elenor
Wingspan 40–60mm. Nocturnal. Often feeds on honeysuckle. May to July.



Six-spot burnet moth
Zygena floridula
Wingspan 20–30mm. Diurnal. Grassland such as meadows and cliffs. June to August.



(FLIES AND BEETLES)



Red soldier beetle
Myrmecoloma
Length 12mm. Often feeds on lupin and cow parsley, as well as garden flowers. June to August.



Marmalade hoverfly
Eristalis tenax
Length 13mm. Abundant on garden and hedgerow flowers. Nearly year-round.



Large (dark-edged) fly
Bombus terrestris
Length 10mm. Feeds on bees. March to June.



Drone fly
Eristalis tenax
Length 12mm. Feeds on the male honey bee (drone). Abundant visitor to garden flowers. Nearly year-round.



Hornet hoverfly
Mesochorus
Length 10mm. Mimics the hornet. Woodland and gardens. May to October.

(BUTTERFLIES)



Swallowtail
Papilio machaon
Wingspan 70–80mm. In UK, only in Norfolk Broads. May to July.



Orange-tip
Anthracinus castaneus
Wingspan 40–50mm. Common in many habitats. April to June.



Brimstone
Gonepteryx rhamni
Wingspan 60–70mm. Gardens, woodlands, scrubby grassland. June to September.



Small skipper
Thymelicus sylvestris
Wingspan 27–34mm. Rough grassy habitats with tall vegetation. June to August.



Common blue
Myiobolus caeruleus
Wingspan 29–30mm. Unimproved grassland habitat. May to October.



Brown argus
Argiope
Wingspan 20–25mm. Chalk and limestone grassland. May to October.



Comma
Pararge aegeria
Wingspan 50–60mm. Woodlands, gardens and hedgerows. March to September.



Peacock
Inachis io
Wingspan 62–75mm. Abundant in a variety of habitats. March to September.



Small tortoiseshell
Aglais urticae
Length 45–60mm. Common in many habitats. March to September.



Silver-spotted skipper
Hesperia comma
Wingspan 29–30mm. Oak woodlands, rare. July to September.



Red admiral
Vanessa atalanta
Wingspan 64–70mm. Common in many habitats. March to September.



Small white
Pararge aegeria
Wingspan 30–35mm. Abundant in a variety of habitats. April to October.

(BEES AND WASPS)



Honeybee
Apis mellifera
Length 12mm. Domesticated; nests in hives and visits many habitats. March to September.



Tree bumblebee
Bombus lucorum
Length 15mm. Found in urban areas, gardens and woods; often nests in bird nestboxes. March to July.



Red mason bee
Osmia bicornis
Length 12mm. Found in a variety of habitats; nests in old walls. March to June.



Common carder bee
Bombus pascuorum
Length 12mm. Found in a variety of habitats. March to November.



White-tailed bumblebee
Bombus lucorum
Length 12mm. Various habitats. March to November.



Tawny mining bee
Andrena fucicola
Length 10mm. Found in a variety of habitats; nests in lawns. March to June.



Buff-tailed bumblebee
Bombus terrestris
Length 12mm. Found in a variety of habitats; nests underground. April to August.



Hairy-footed flower bee
Anthophora plumipes
Length 10mm. Various habitats, especially in the south. March to June.



Red-tailed bumblebee
Bombus lapidarius
Length 12mm. Found in a variety of habitats; fond of purple flowers. March to September.

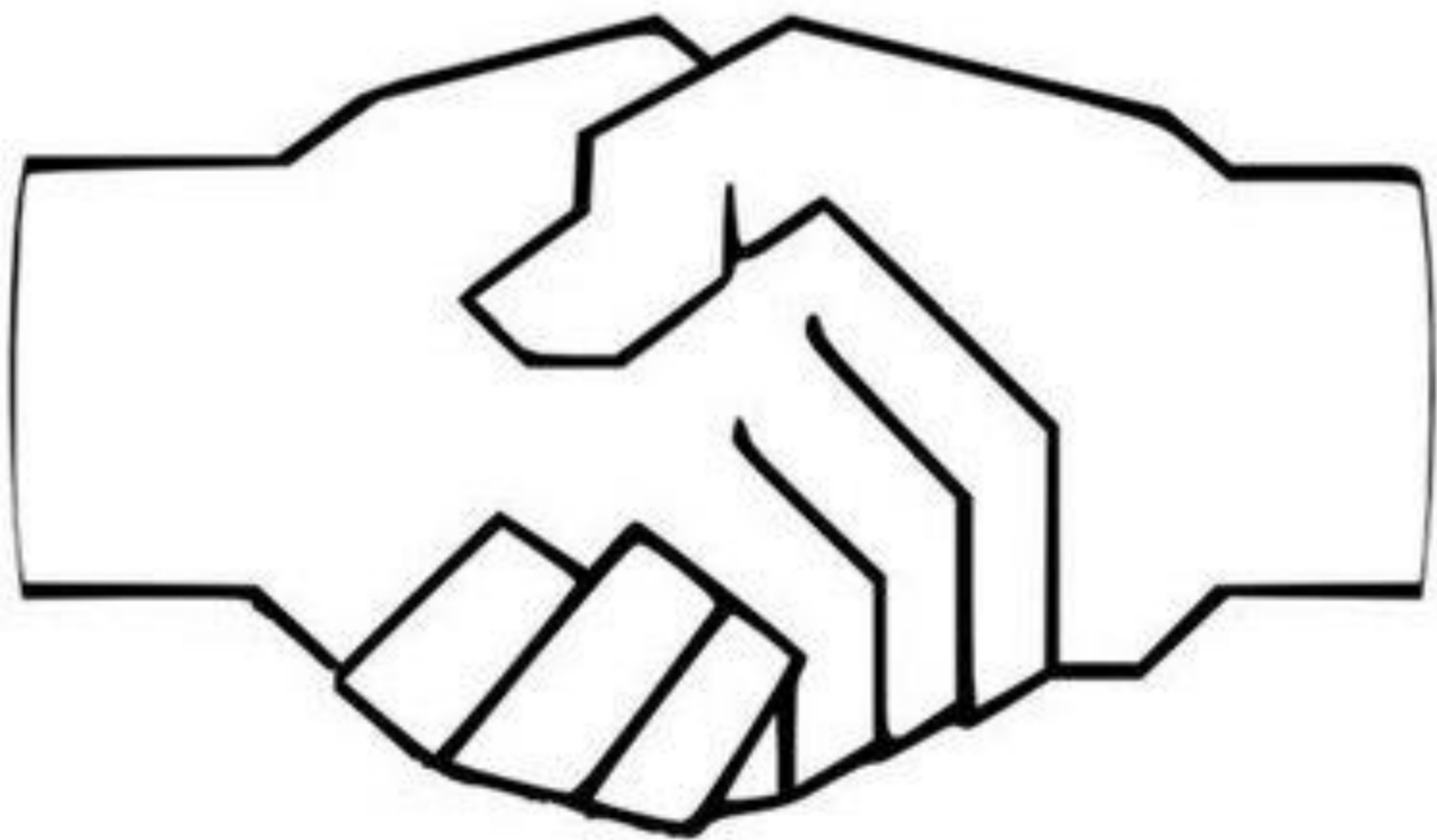


Ruby-tailed wasp
Dryinops grisea
Length 10mm. Various habitats; often seen on cliffs and dead wood. April to September.



www.apsacollege.com

9360320559



THANK YOU









RB Lure Trap for Controlling Rhinoceros Beetles



RED PALM WEEVIL

Pheromone trap

