Co-evolution of plants and their pollinators

A. Co-evolution

B. Plant reproductive biology

C. The problem of pollen transfer

1. Attractants and rewards

D. Pollen vectors and syndromes

1, Biotic vectors: bees, moths, butterflies, birds, bats, others

2. Abiotic vectors: wind and water

3. Pollination by deceit

4. Reward thieves

What would your grade be if grades were assigned today?

Calculation of percentage of points earned so far:

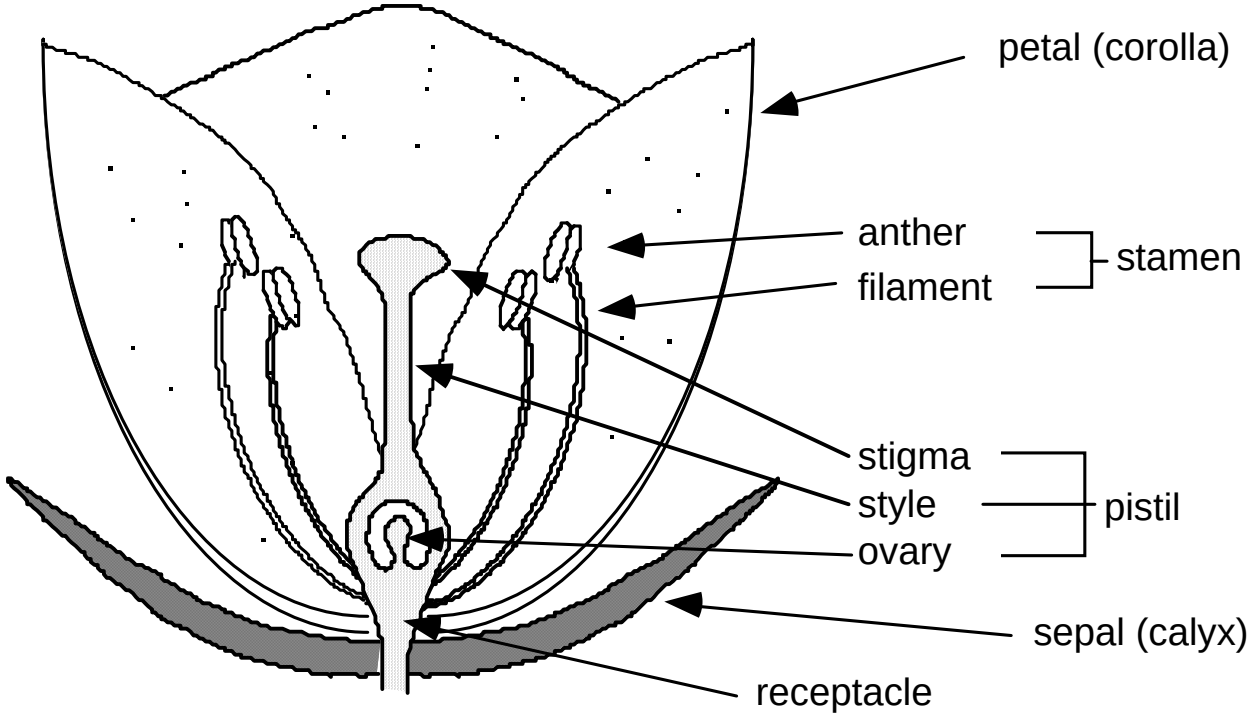
Total points out of 300 =

Quiz1 + Quiz2 + Quiz3 + Quiz4 + Exam1(3.03) +Exam2(3.03)

Points earned/300 = Percent

Approximate Grades:

78% - 100%	A
65% - 77%	B
47% - 64%	C
less than 47%	D



Attractants

color

scent

shape

Rewards

nectar

pollen

shelter

chemicals

heat

Pollination by bees

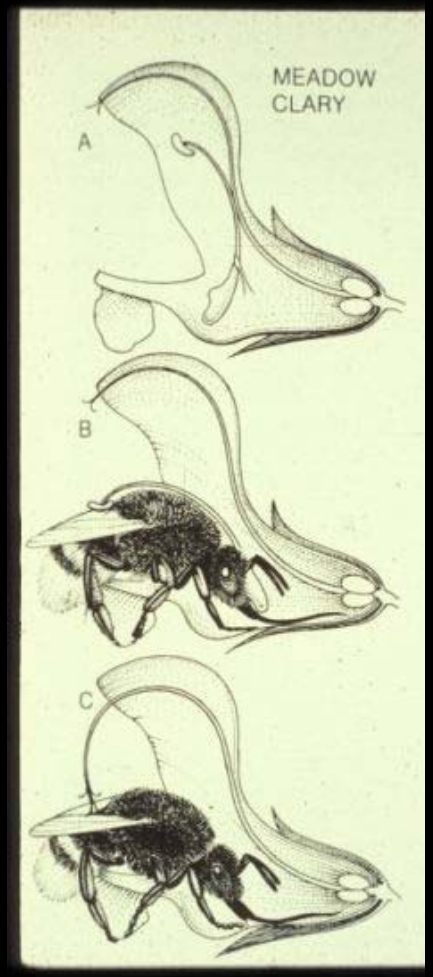
Nectar guides direct pollinators to rewards in the flower.

In wild geranium, the nectar guides are only visible under ultra-violet light

UV light

Natural light

Some flowers provide a landing pad for pollinators



A honeybee with full pollen baskets

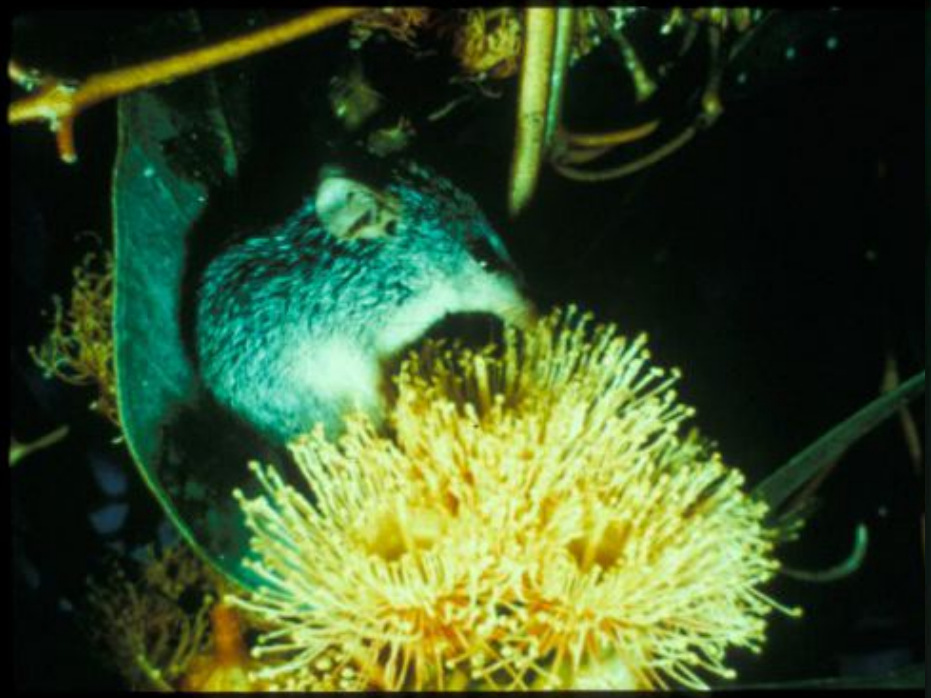
Pollination by moths

Pollination by butterflies

Hummingbird pollination

A sunbird pollinating a bird-of-paradise flower

Bat pollination



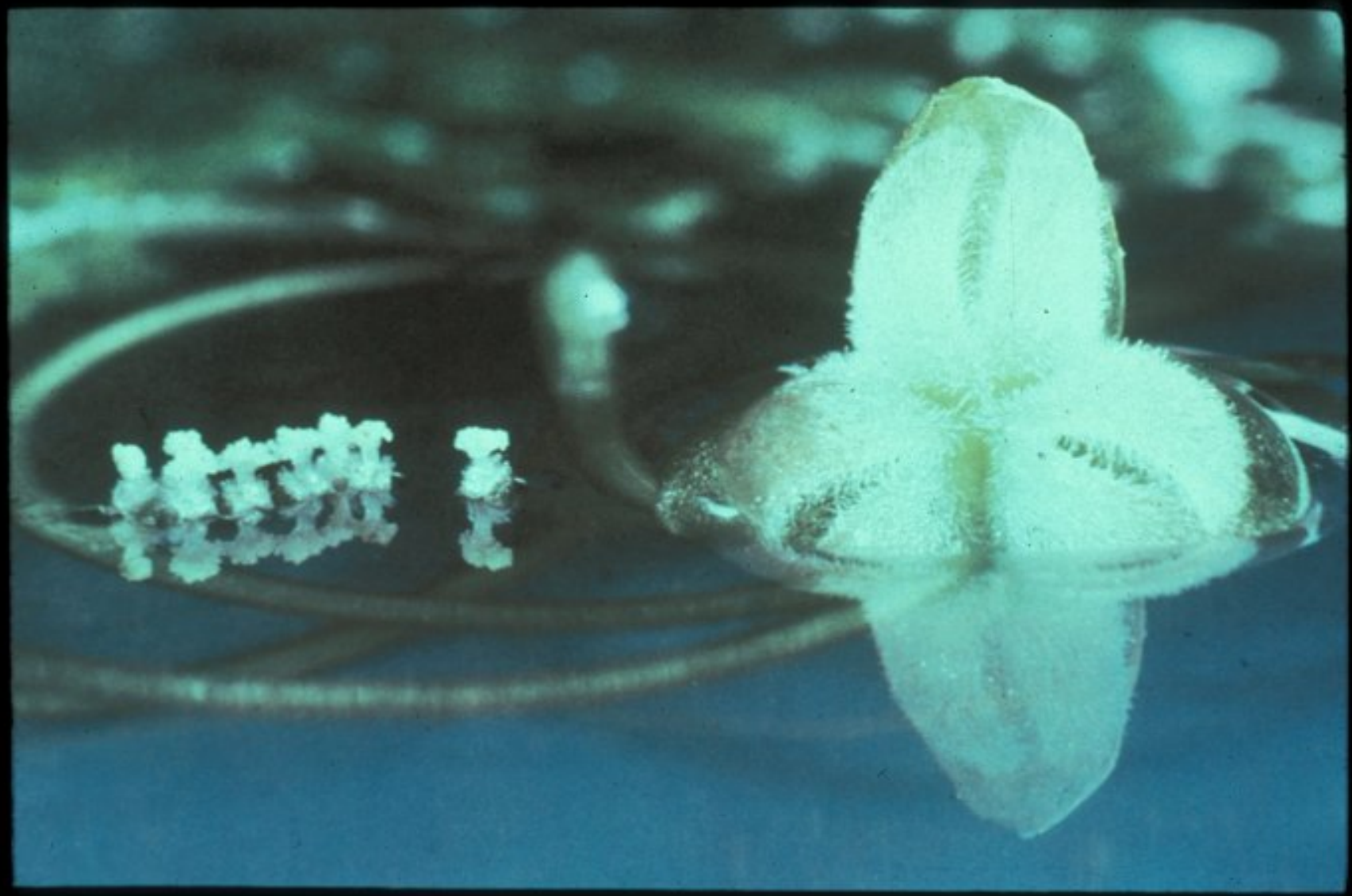
Pollination by marsupials and spiders: it’s rare but it happens!

The generalist pollination syndrome has something for everyone

Wind pollination

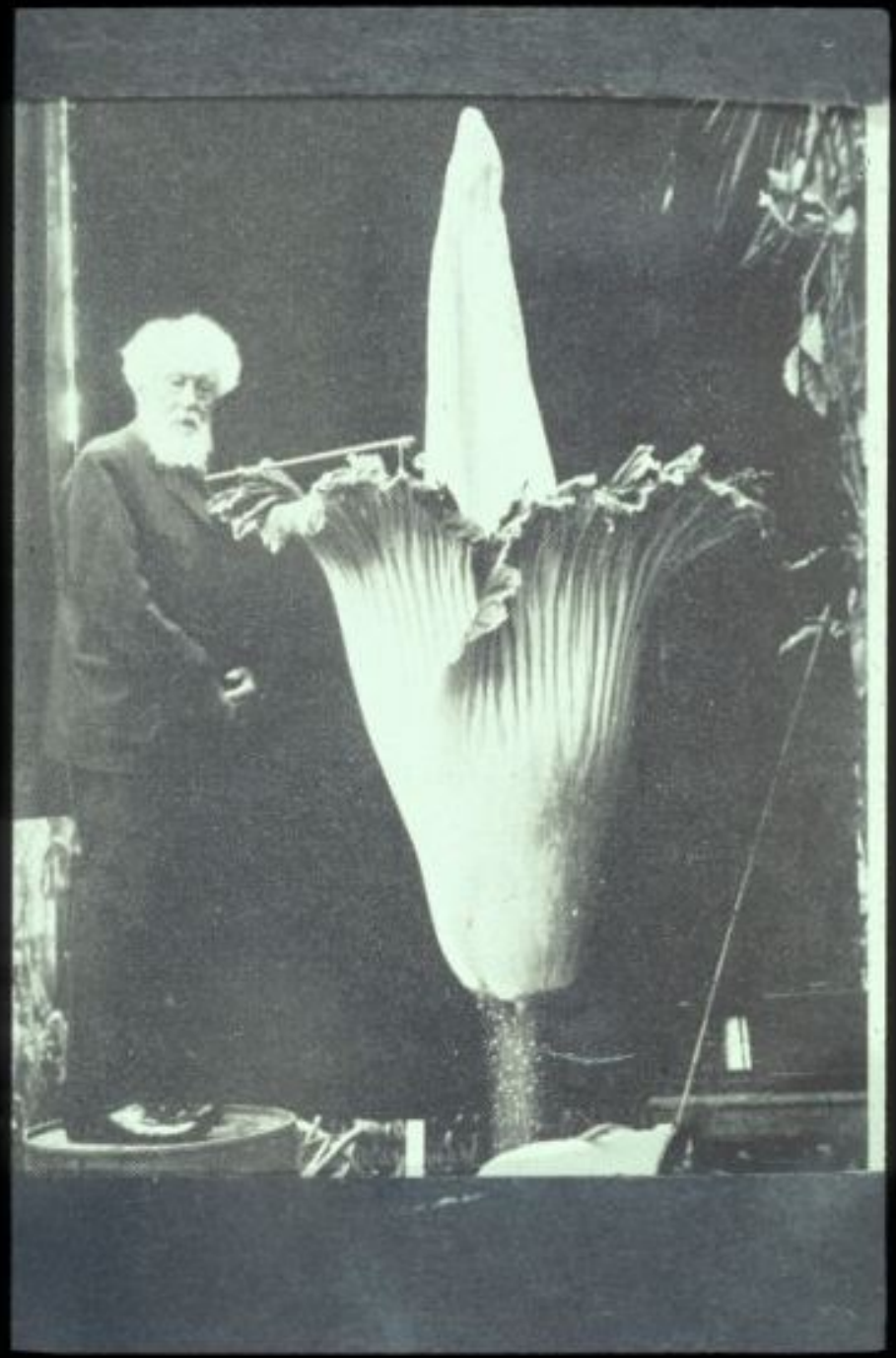
Wind borne pollen has been found at 19000 ft altitude and as much as 3000 miles from the nearest possible source

Hydrochory - pollination by water in Vallisneria



A carrion mimic that is pollinated by carrion flies

Hugo deVries with a stinking corpse lily



A flower that mimics the gills of a fungus

A flower with fake pollen

1

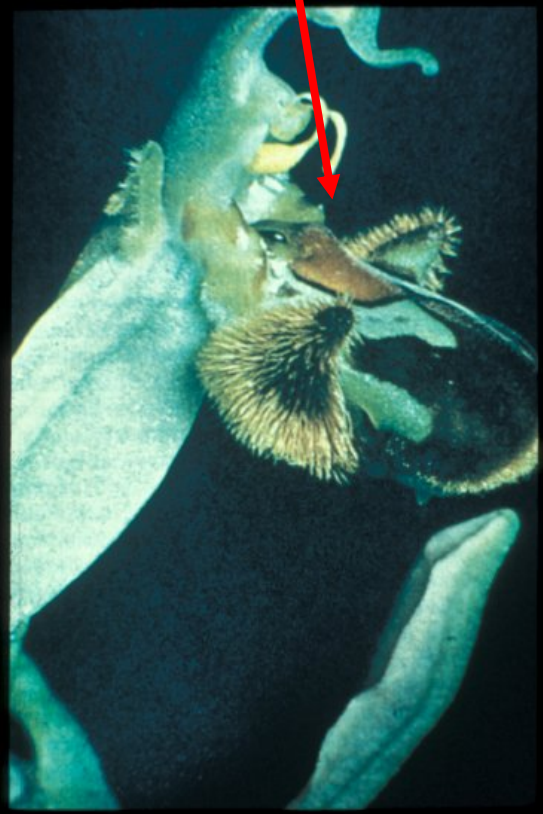
2

3

Deceit pollination in bucket orchids

Pseudocopulatory orchids

These are flowers



This is not!

A nectar robber taking a reward without pollinating