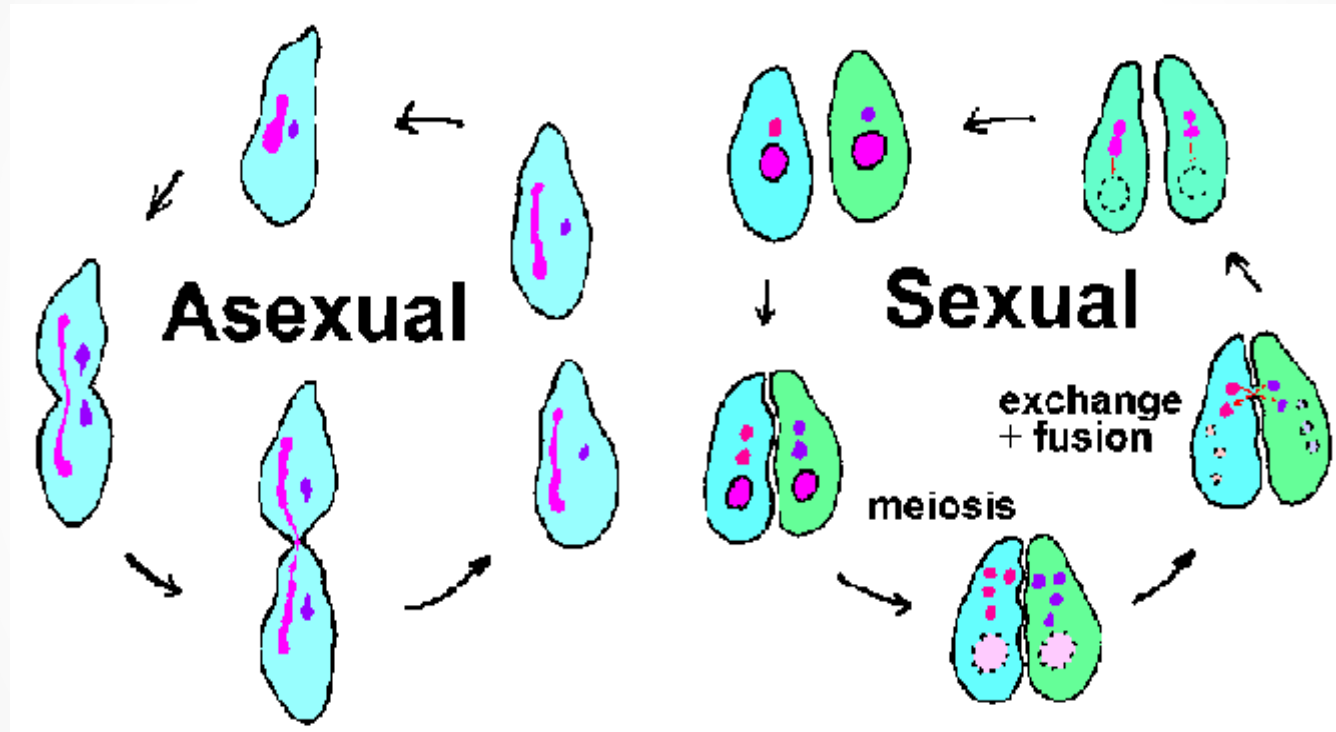


ASEXUAL REPRODUCTION



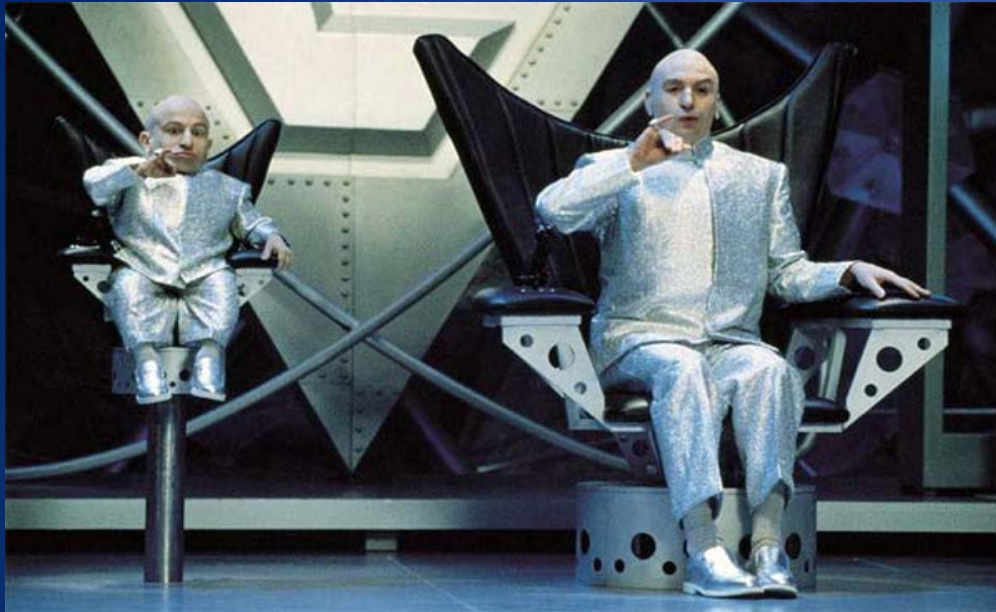
Which were we looking at in Section 1.1? How do paramecium, euglenas, and cells reproduce?

Asexual Reproduction

- Reproduction that only involves one parent.
- The off spring are clones



Famous Recent Clones



Movie Clones?

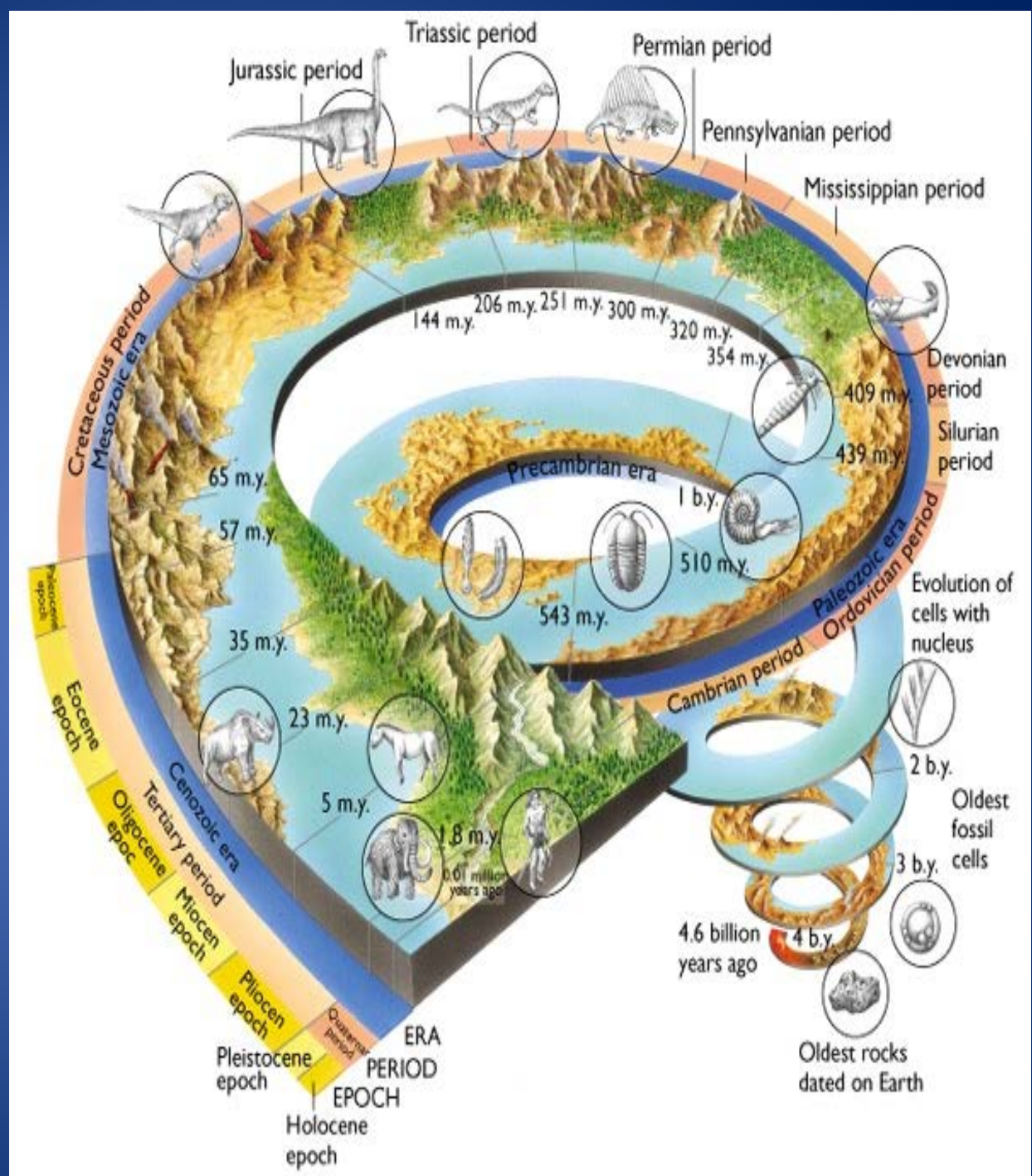
They only look like clones but really they are not.

These are real clones –
Meet Dolly
the first mammal
ever cloned



Cloning in Nature

- Asexual reproduction produces clones from one parent.
- And it has been going on for billions of years



Take notes -

- Make a Chart – Title it

Types of ASEXUAL Reproduction

Type	Define	Example
1. Binary Fission		

8 Types of Asexual Reproduction

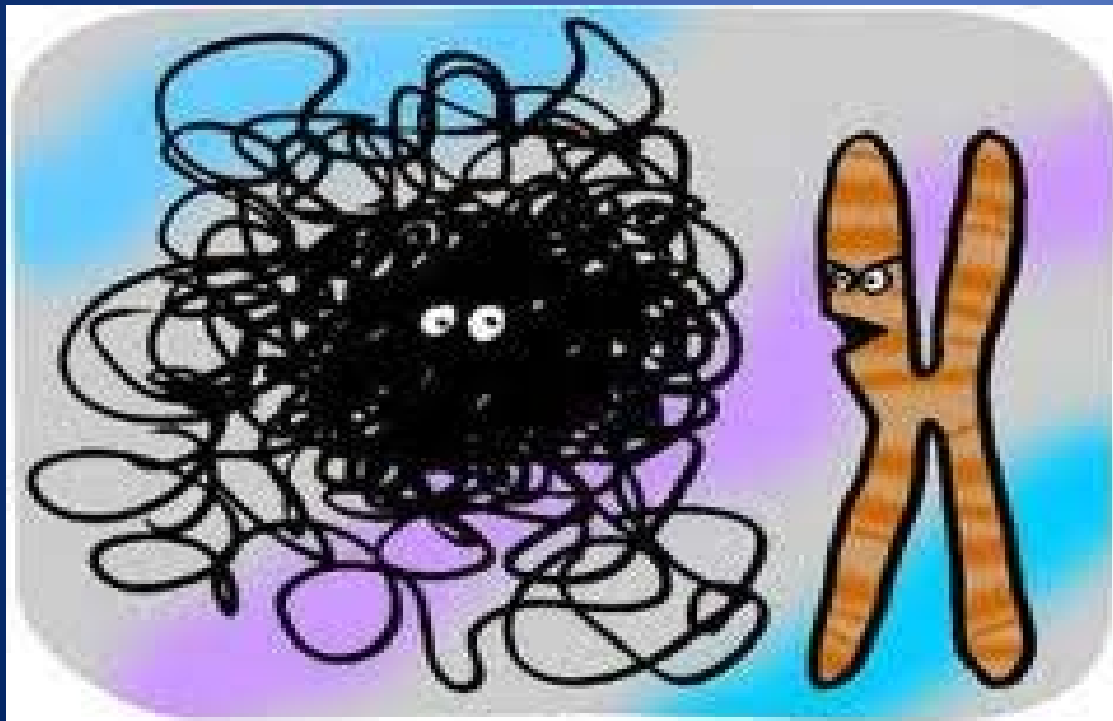
– #1 Binary Fission



Paramecium dividing - a grand example of
Binary Fission

#1 Binary Fission

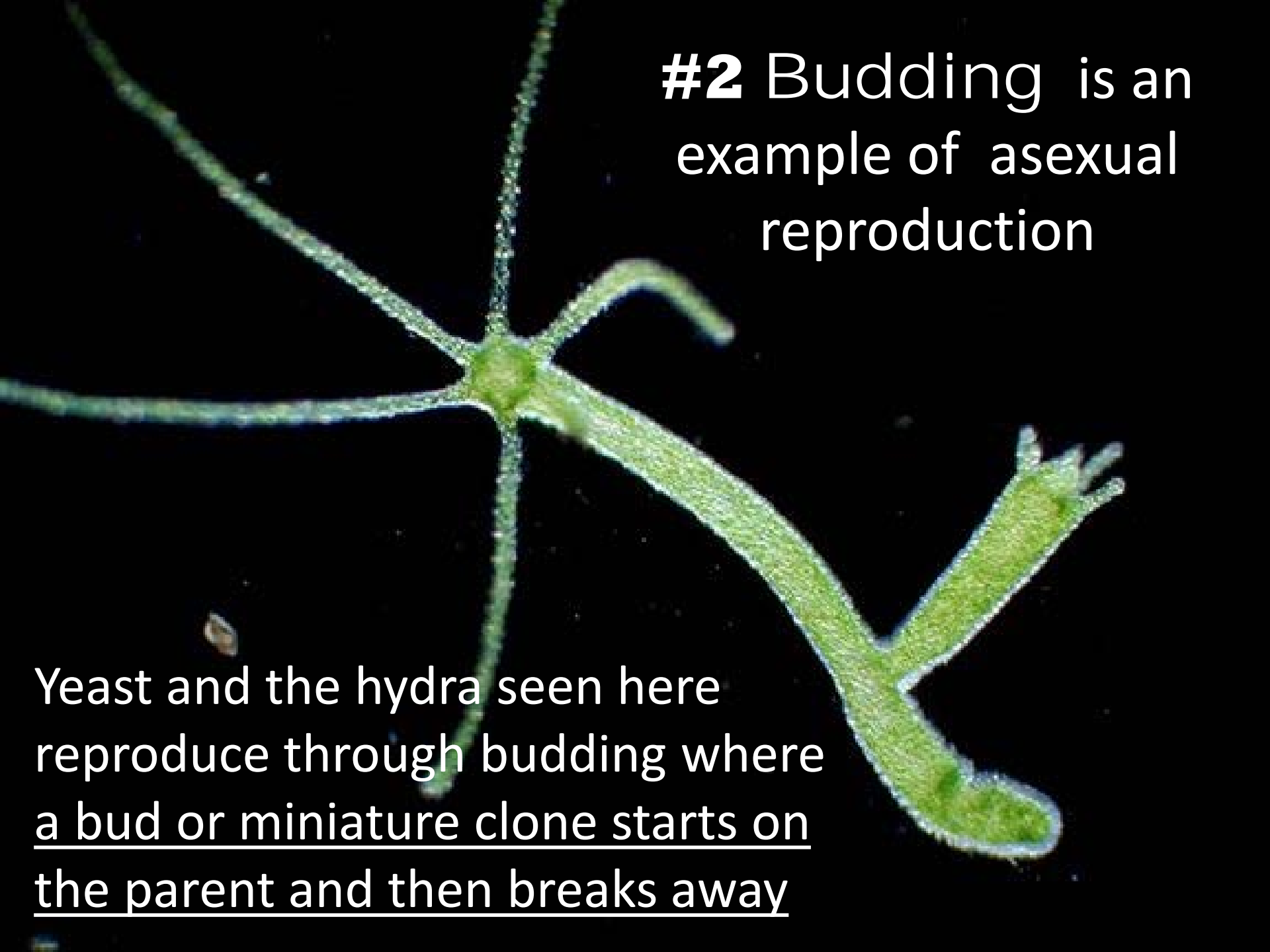
- This is when 2 identical daughter cells or clones are produced from one parent cell by division.



Dude, mitosis starts in five minutes...
I can't believe you're not condensed yet.

Cell division
follows the
process of
mitosis

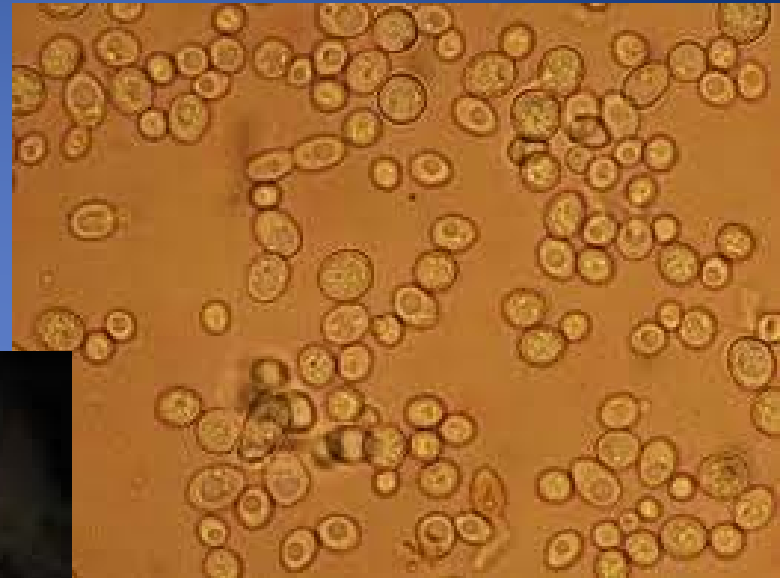
#2 Budding is an example of asexual reproduction



Yeast and the hydra seen here reproduce through budding where a bud or miniature clone starts on the parent and then breaks away

Other examples of Budding

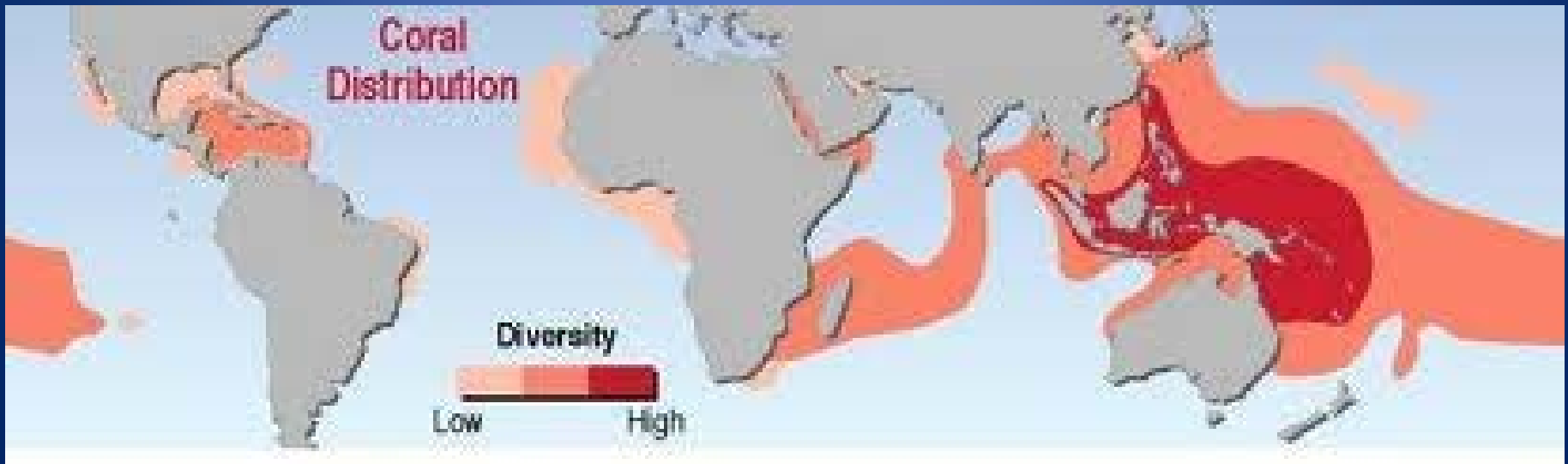
- **Budding YEAST**



and CORAL

Colonies of Coral

- Fast Fact - Corals and Coral reefs cover about 1% of the earth's oceans



#3. Parthenogenesis

- Unfertilized haploid eggs mature into new organisms

- Daphnia



- the Walking Stick bug



- Particularly social insects, like ants, as well as more complex animals like certain snakes and lizards.

Haploid? Diploid? Huh?

- **Haploid** cells contain one set of chromosomes
- Each parent produces a haploid cell which join at fertilization.
- Examples – haploid – sperm (male) and egg (female)

- **Diploid** cells have a double set of chromosomes.
- In most animals cells become diploid after fertilization.

#3 Parthenogenesis -

unfertilized Haploid eggs mature into new organisms

- Examples are:

- Aphids



- Hammerheads



- Honey Bee Drones



And of course
the Komodo Dragon



#4. Spores

- Spores are haploid reproductive cells not haploid unfertilized egg cells. They can't be fertilized. . A small difference.



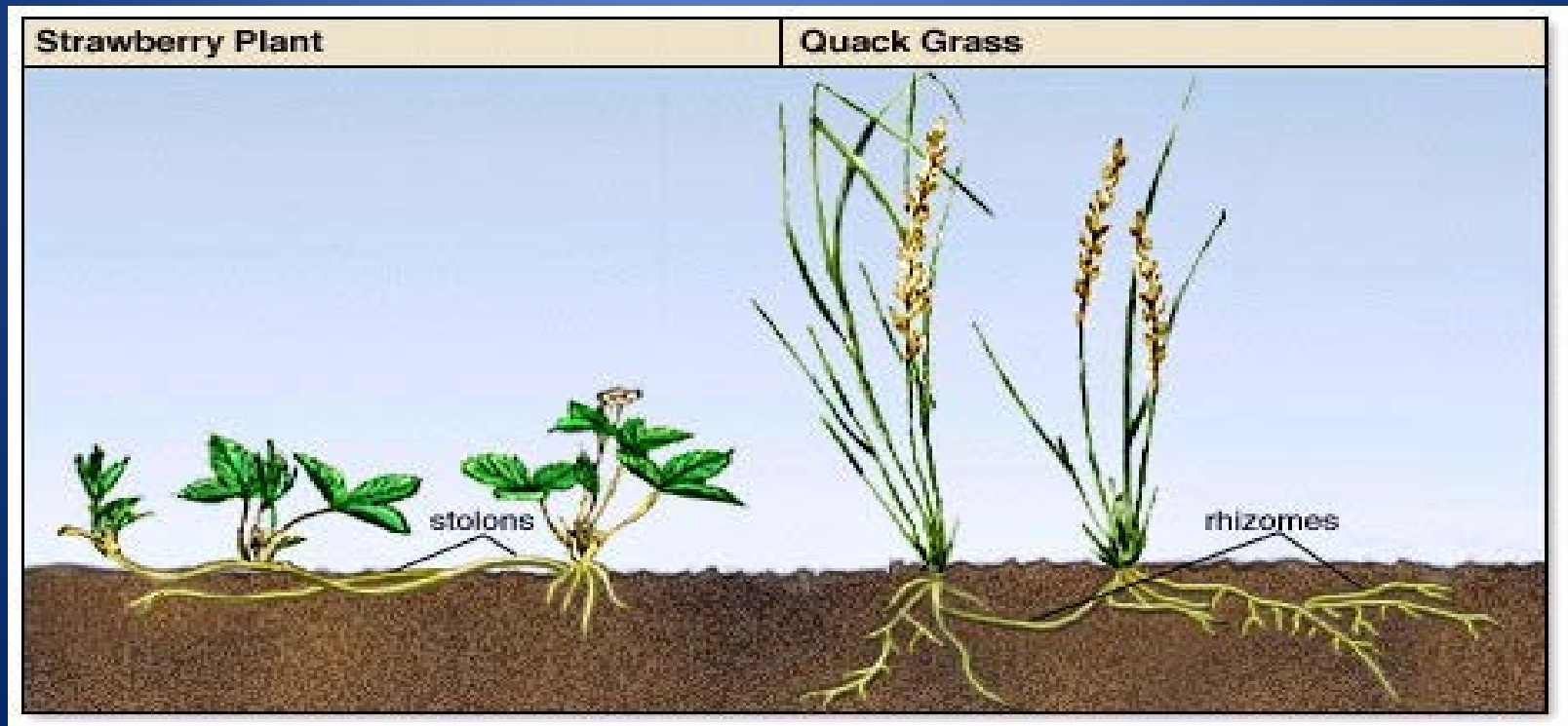
Mushrooms, ferns, fungi, some moulds and non-flowering plants reproduce using spores

Mr. Williams is a Fun Guy

- A Play on words - A pun if you will
- Freddie Fungus met Alice Algae and took a lichen to her

#5. Vegetative

- This type produces identical off spring or clones from a parent plant but does not involve a seed.



Vegetative II

- Bulbs like tulips and onions as well as tubers like potatoes reproduce without seeds.



#6. Fragmentation

- Some species can form from a piece of the existing or parent organism.



Starfish, and some worms can reproduce clones from a piece of the parent



#7. Grafting

- A process where one part of a plant is joined with another plant and the two heal together.
- Fruit producers use this technique. ex: apples



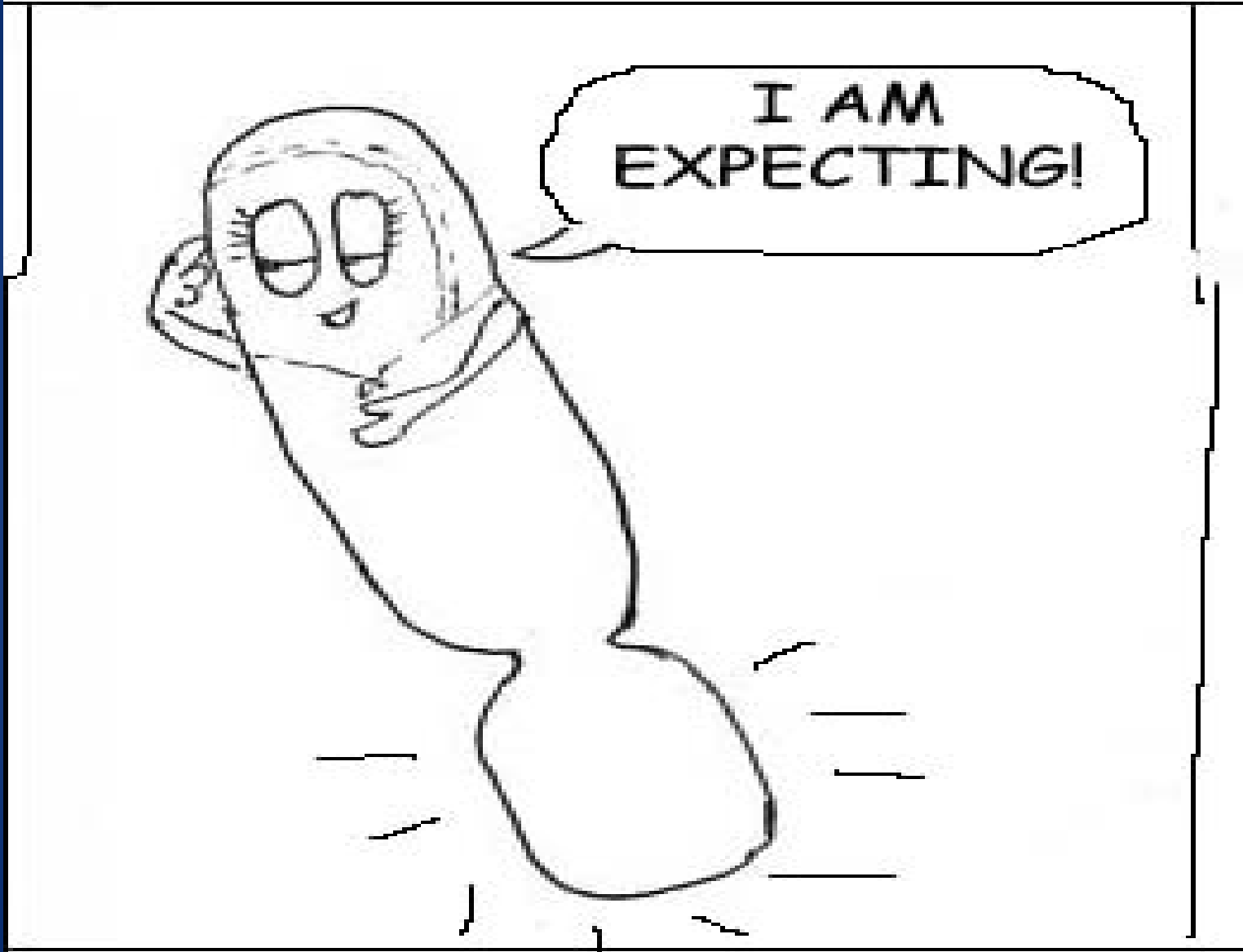
#8. Plant Tissue Cultures

- This is where plants are reproduced in a petri dish from a small piece of plant tissue

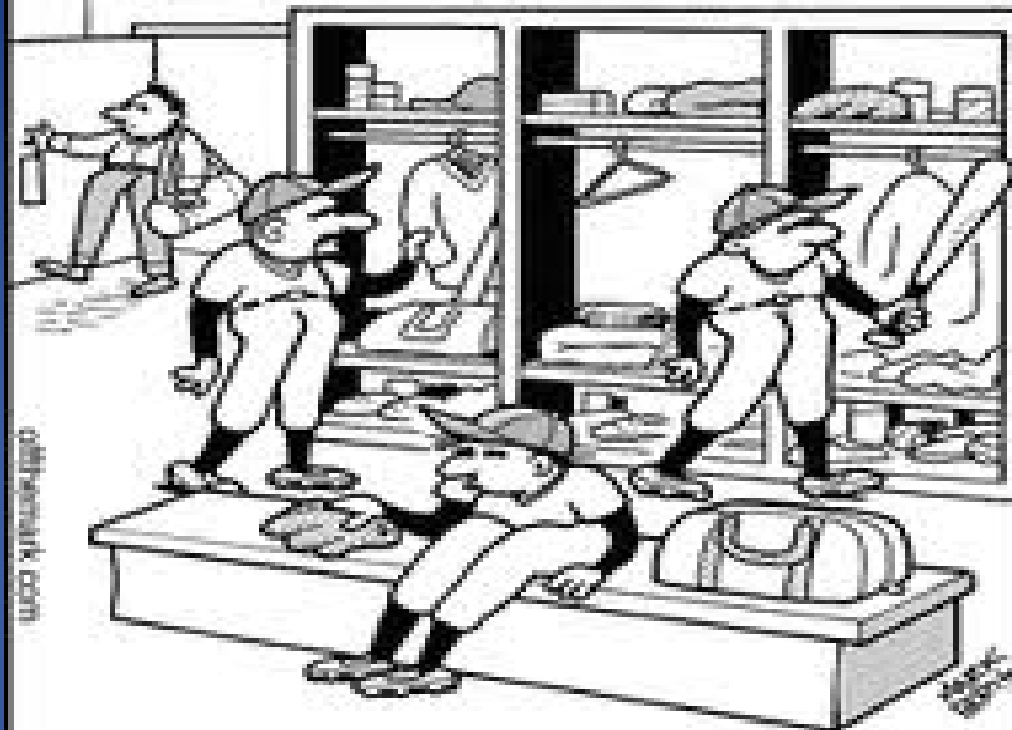


Tissue cultures offer controlled environments to improve crops





I AM
EXPECTING!



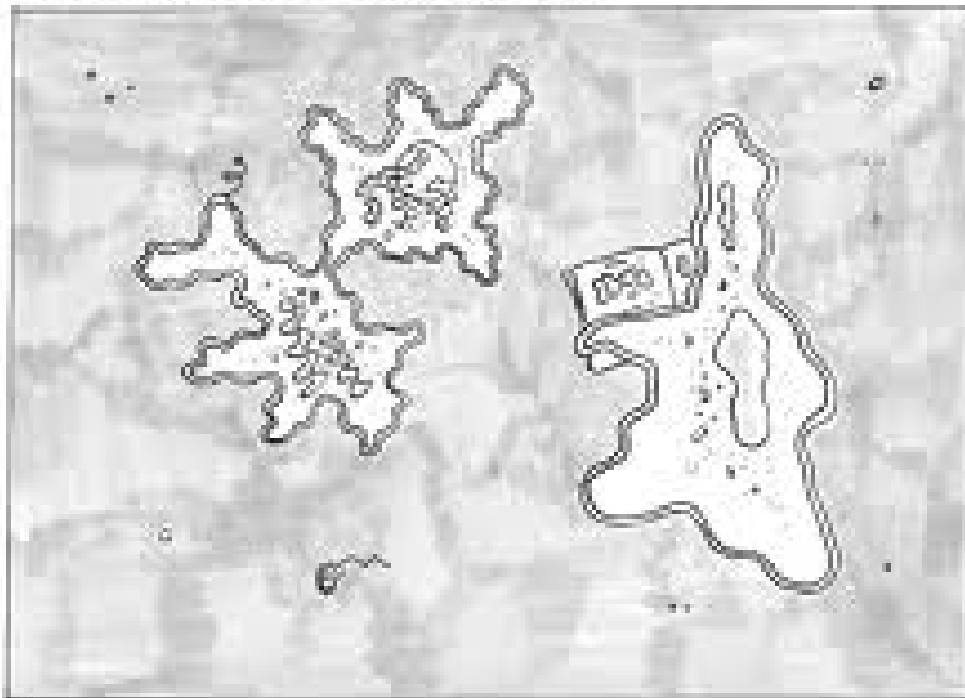
offthemark.com

THE LATEST SPORTS SCANDAL:
BALLPLAYERS GENETICALLY ENGINEERED
TO HAVE SMALL STRIKE ZONES

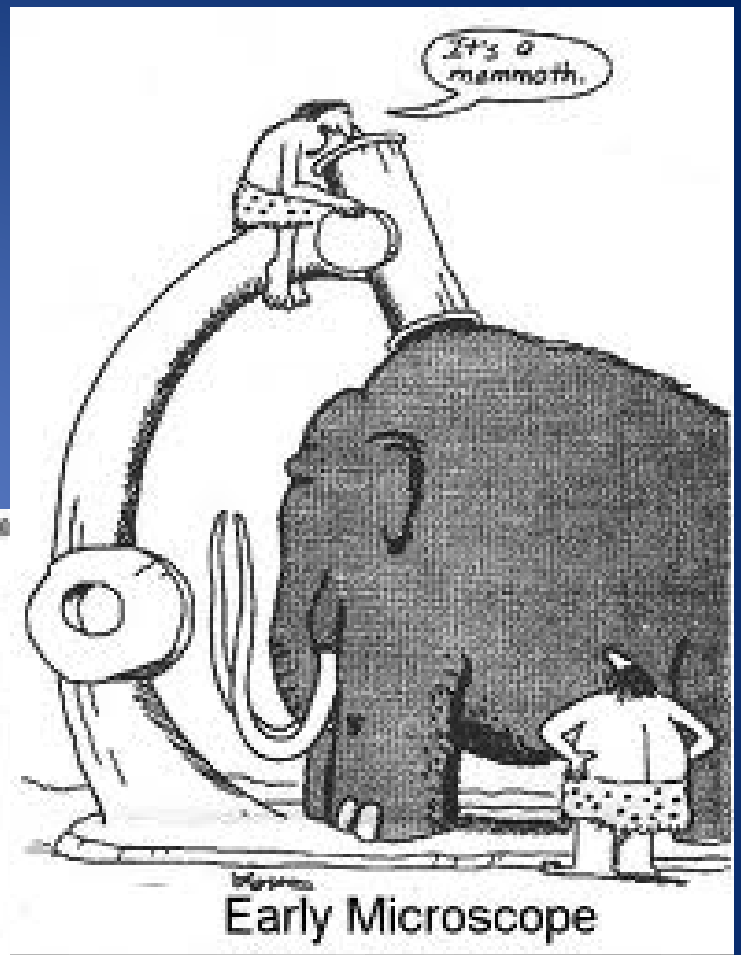
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DOCTOR FUN presents 1988

art 1988



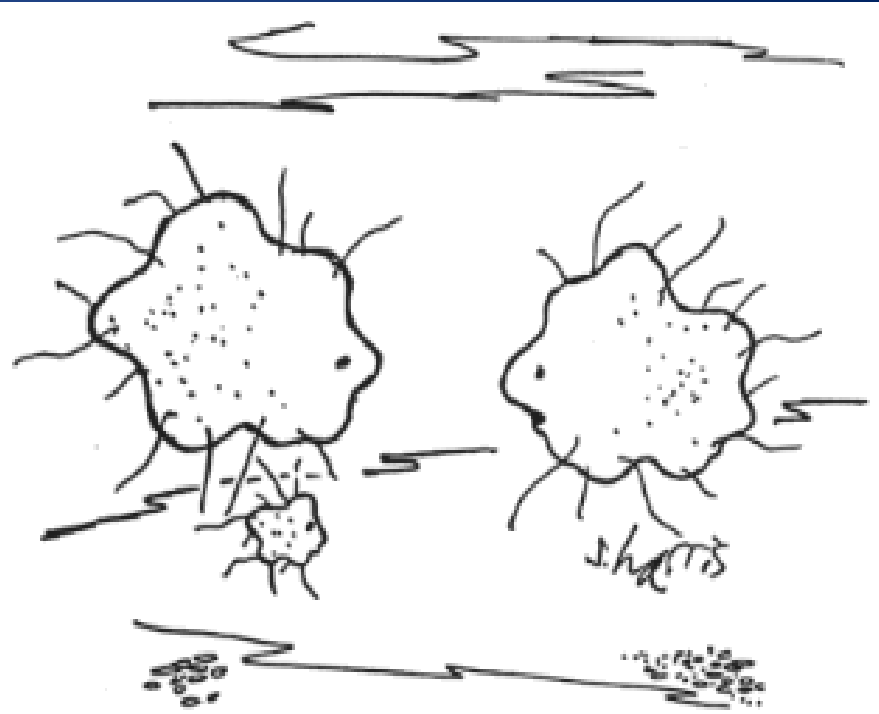
"Here's where you screwed up - telephase comes after metaphase."



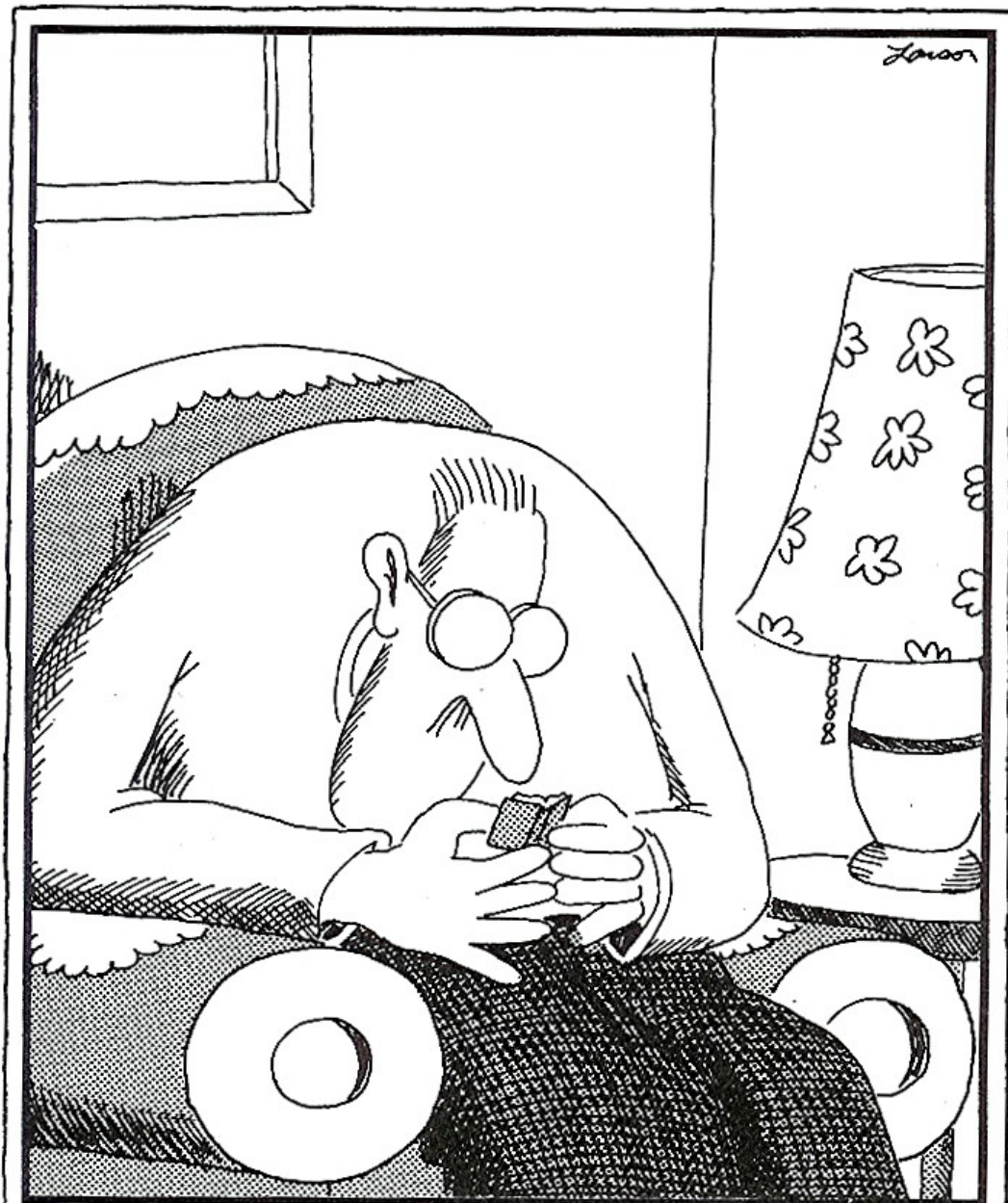
Early Microscope

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JUST KIDDING



"He looks just like you.
But he looks just like me, too."



Roger crams for his microbiology midterm.

Halloween Freudian Style



In the time before microscopes



Early microbiologists



"Holy great mother of God, I've been cloned!"

Answer these:

1. a. What is asexual reproduction?
b. What is a main advantage?
c. is a main disadvantage?
2. How are parthogenesis and spores alike? How are they different?
3. What practical applications for fragmentation might we gain from research? Or what might we gain or risk with cloning research?

