



**NUCLEUS**

**YES CHROMOSOME  
REDUCTION**

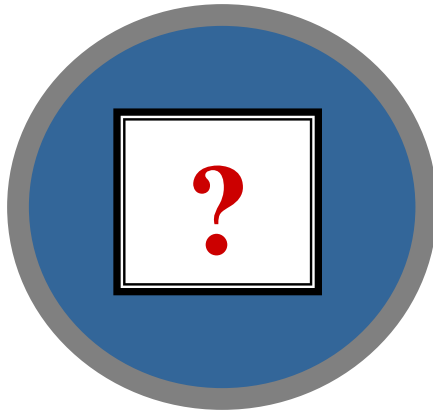
**SPOROCYTE**

**GERM CELL**

**MEIOSIS**

**1/2 REDUCTION**





**YES CHROMOSOME  
REDUCTION**

**SPOROCYTE**

**GERM CELL**

**MEIOSIS**

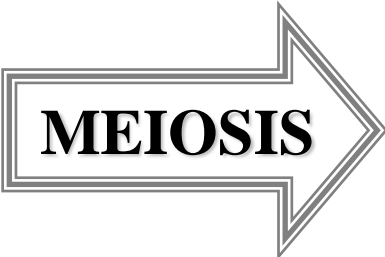
**1/2 REDUCTION**



**YES CHROMOSOME  
REDUCTION**

**SPOROCYTE**

**GERM CELL**



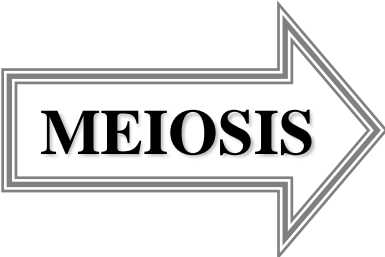
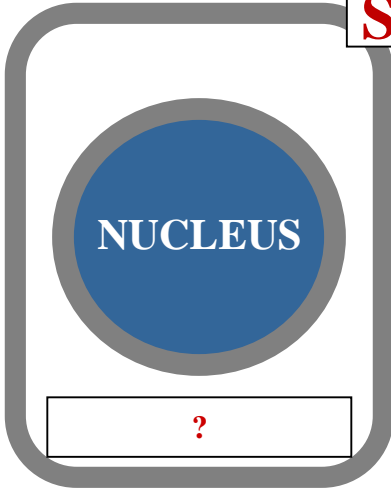
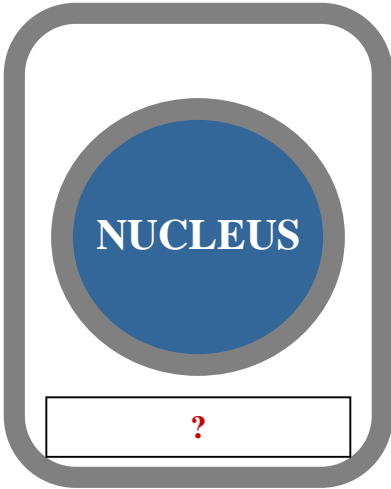
**1/2 REDUCTION**



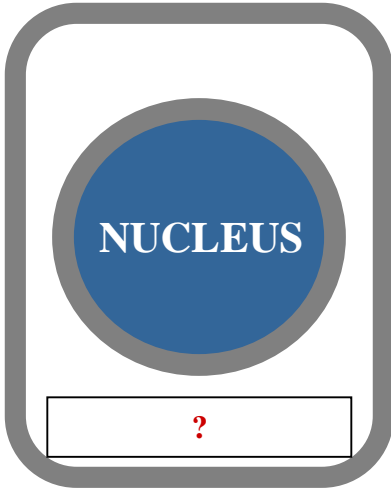
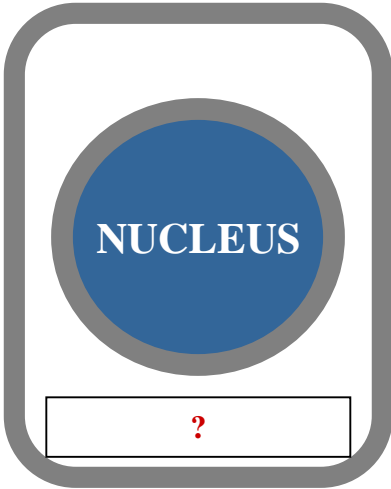
**YES CHROMOSOME  
REDUCTION**

**SPOROCTE**

**GERM CELL**



**1/2 REDUCTION**



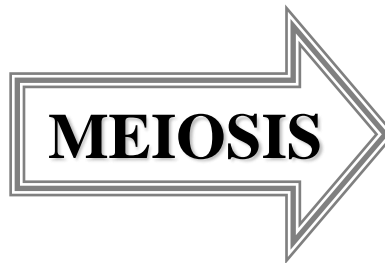
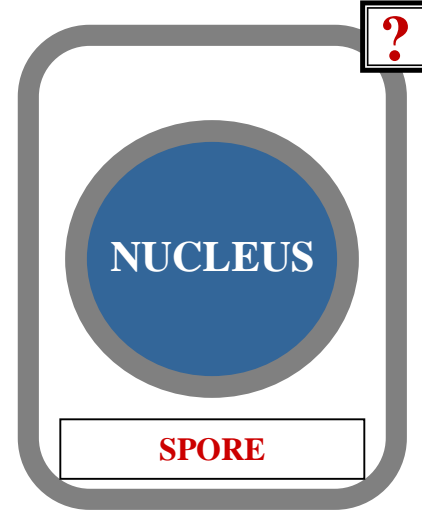
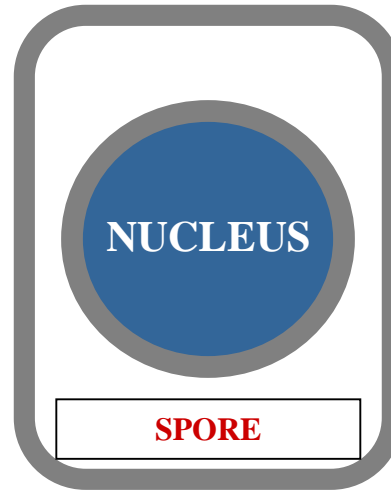




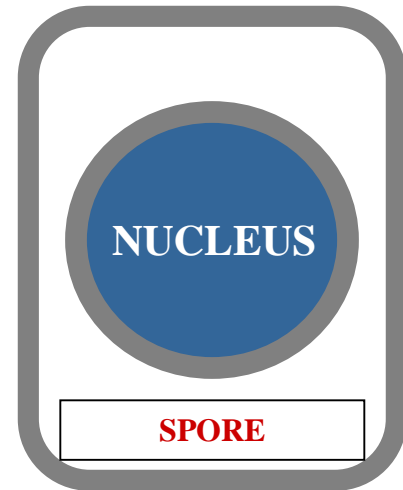
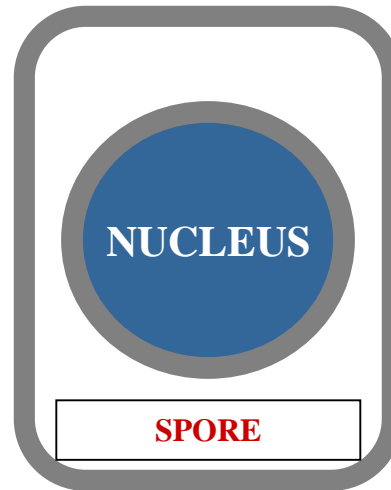
**YES CHROMOSOME  
REDUCTION**

**SPOROCYTE**

**GERM CELL**



**1/2 REDUCTION**



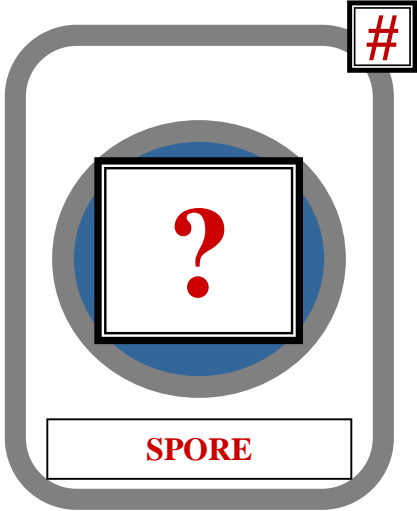
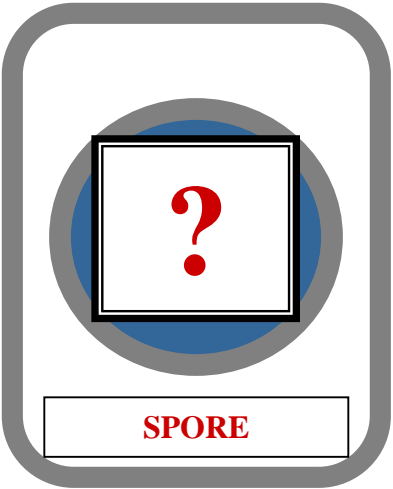


**2N**

**YES CHROMOSOME  
REDUCTION**

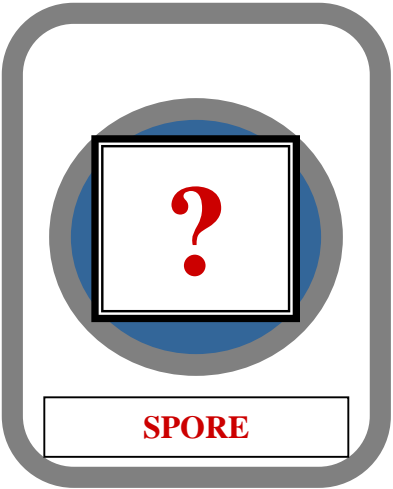
**SPOROCYTE**

**GERM CELL**



**MEIOSIS**

**1/2 REDUCTION**

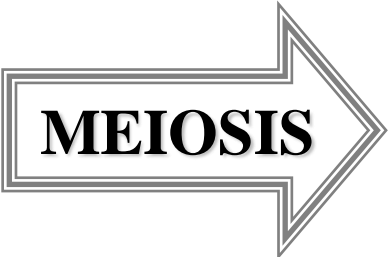
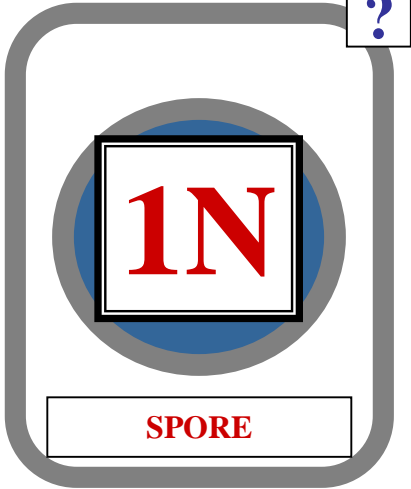




**YES CHROMOSOME  
REDUCTION**

**SPOROCYTE**

**GERM CELL**



**1/2 REDUCTION**



# QUESTION

HOW IS THE HAPLOID  
STATE RESTORED TO  
THE DIPLOID STATE?

# QUESTION



**ANSWER**

**FERTILIZATION**

**ANSWER**

# FERTILIZATION

# FERTILIZATION



**SYNGAMY**





**FERTILIZATION**

**SYNONYMOUS**

**SYNGAMY**



# FERTILIZATION / SYNGAMY

2 HAPLOID GAMETES  
FUUSE

# FERTILIZATION / SYNGAMY

**FERTILIZATION / SYNGAMY**

**2 HAPLOID GAMETES**

**FUSE**

**---**

**OUTCOME**

**DIPLOID ZYGOTE**

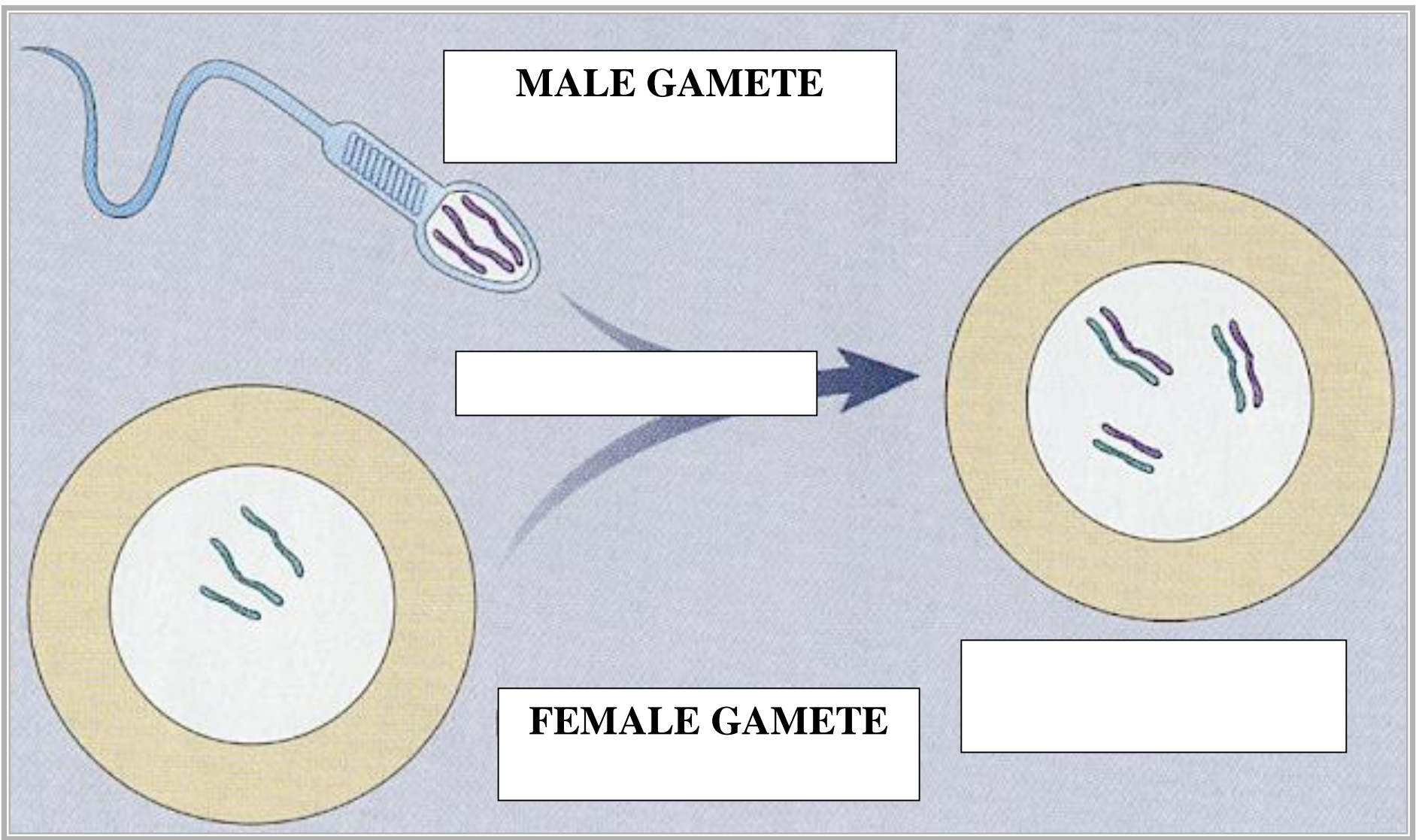
**FERTILIZATION / SYNGAMY**



# FERTILIZATION SYNGAMY APPLIED

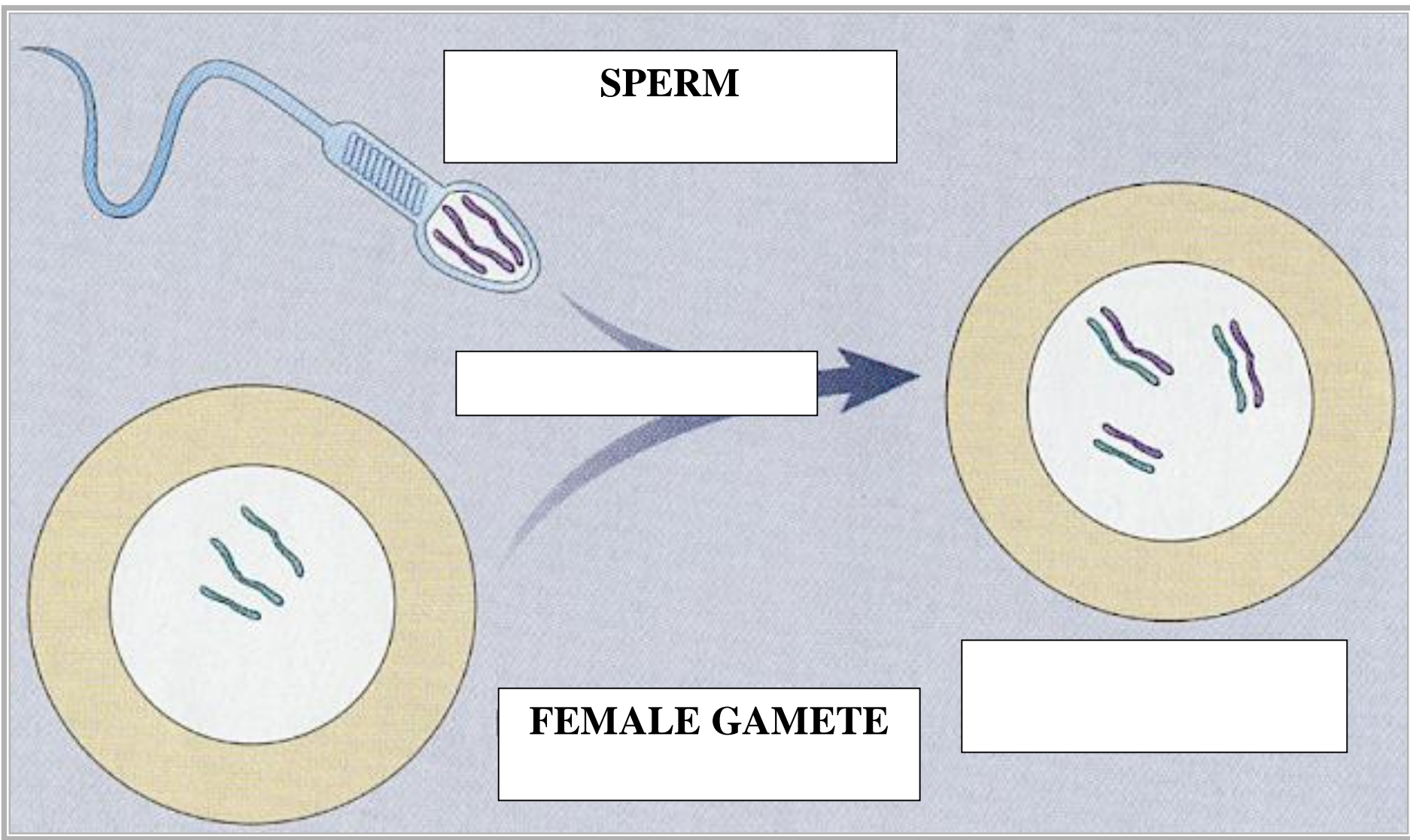
# FERTILIZATION

## SYNGAMY



# FERTILIZATION

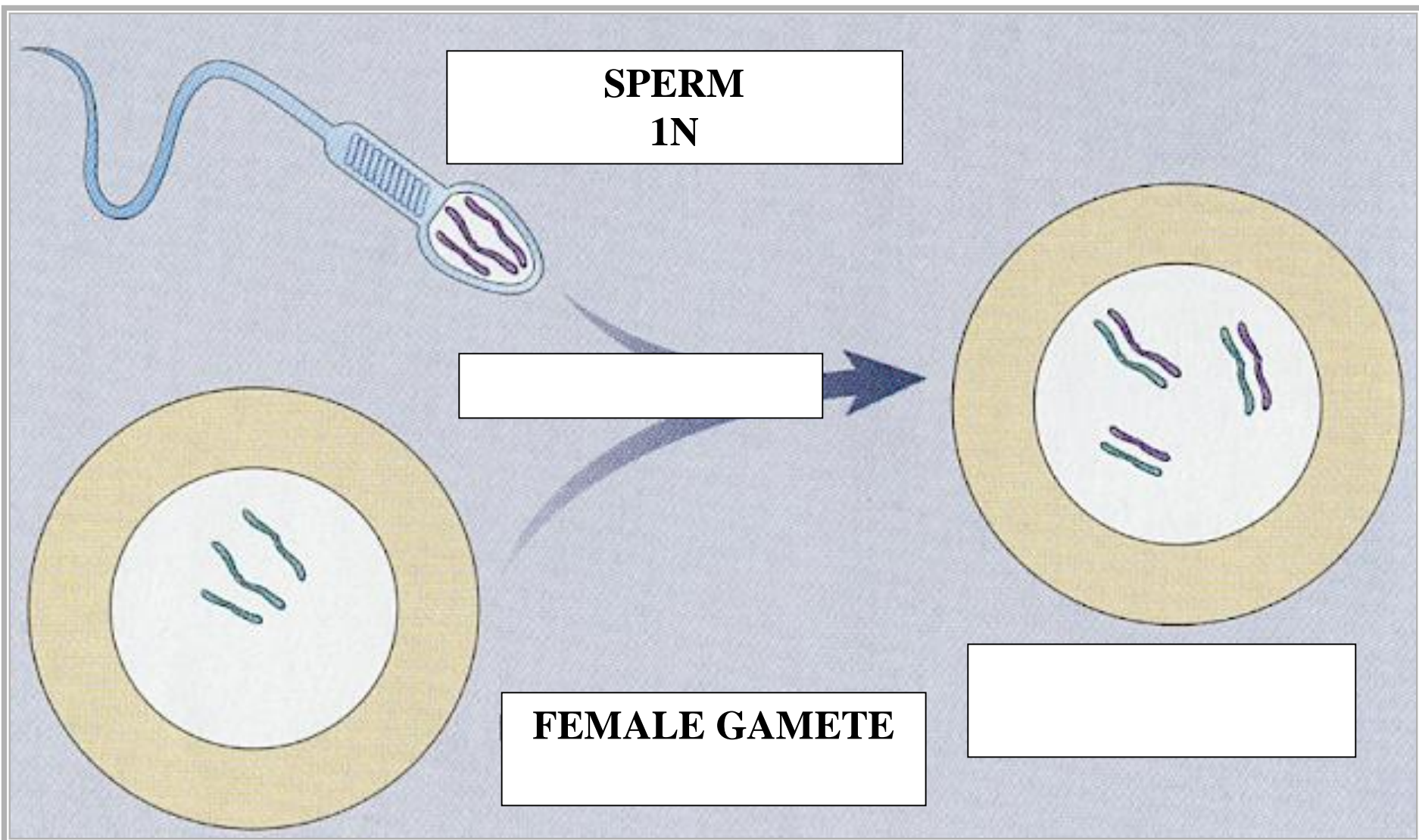
## SYNGAMY





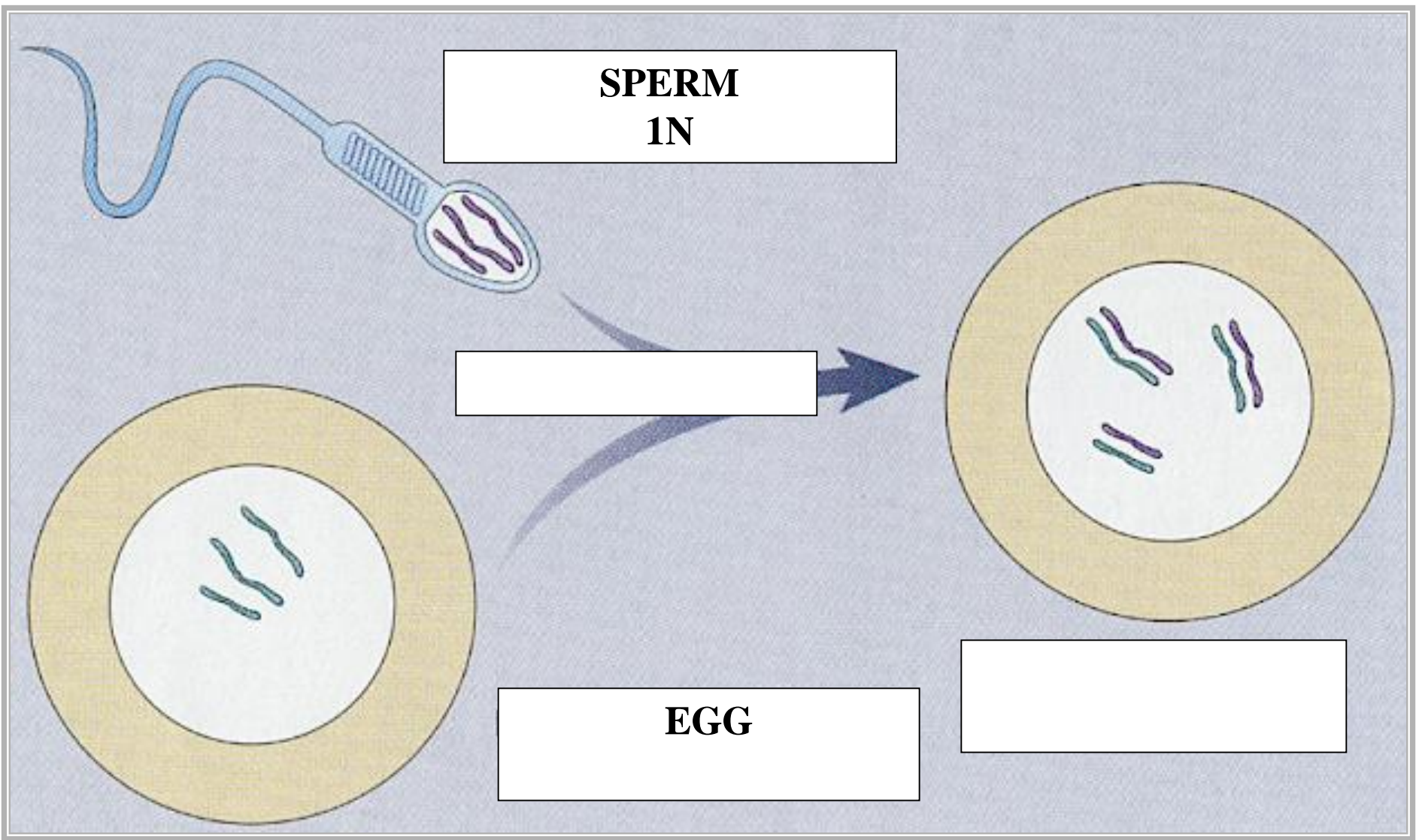
# FERTILIZATION

## SYNGAMY



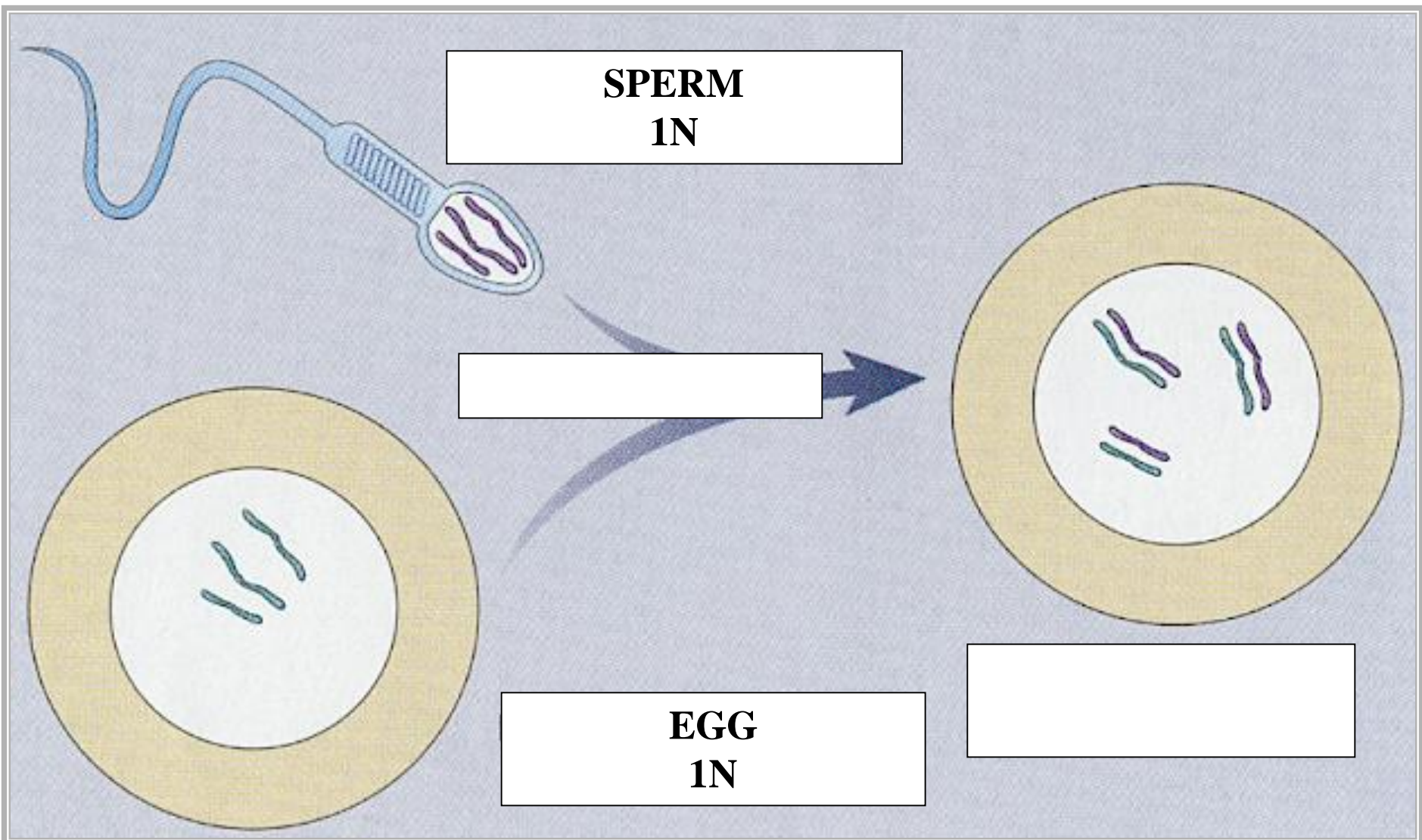
# FERTILIZATION

## SYNGAMY



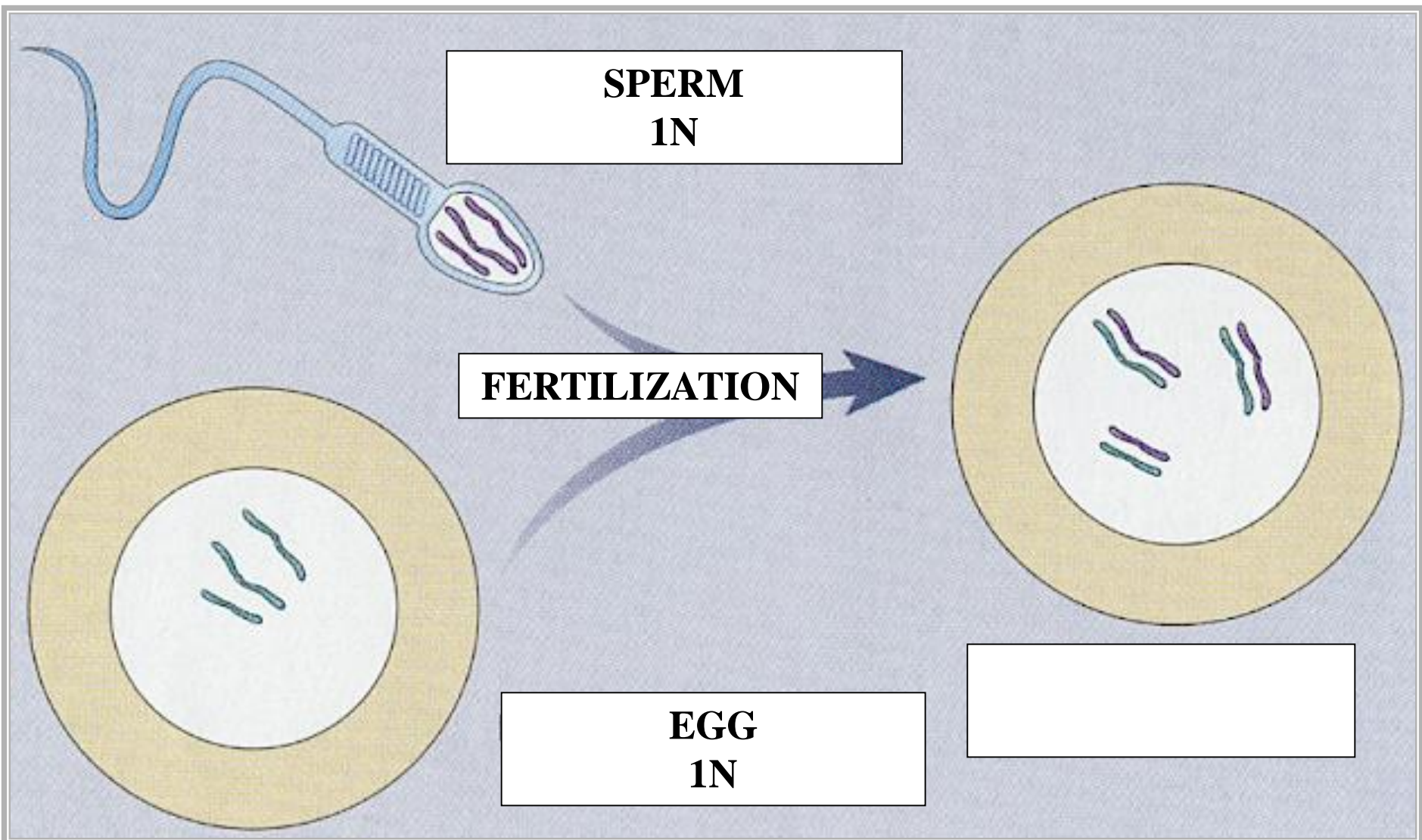


# FERTILIZATION SYNGAMY



# FERTILIZATION

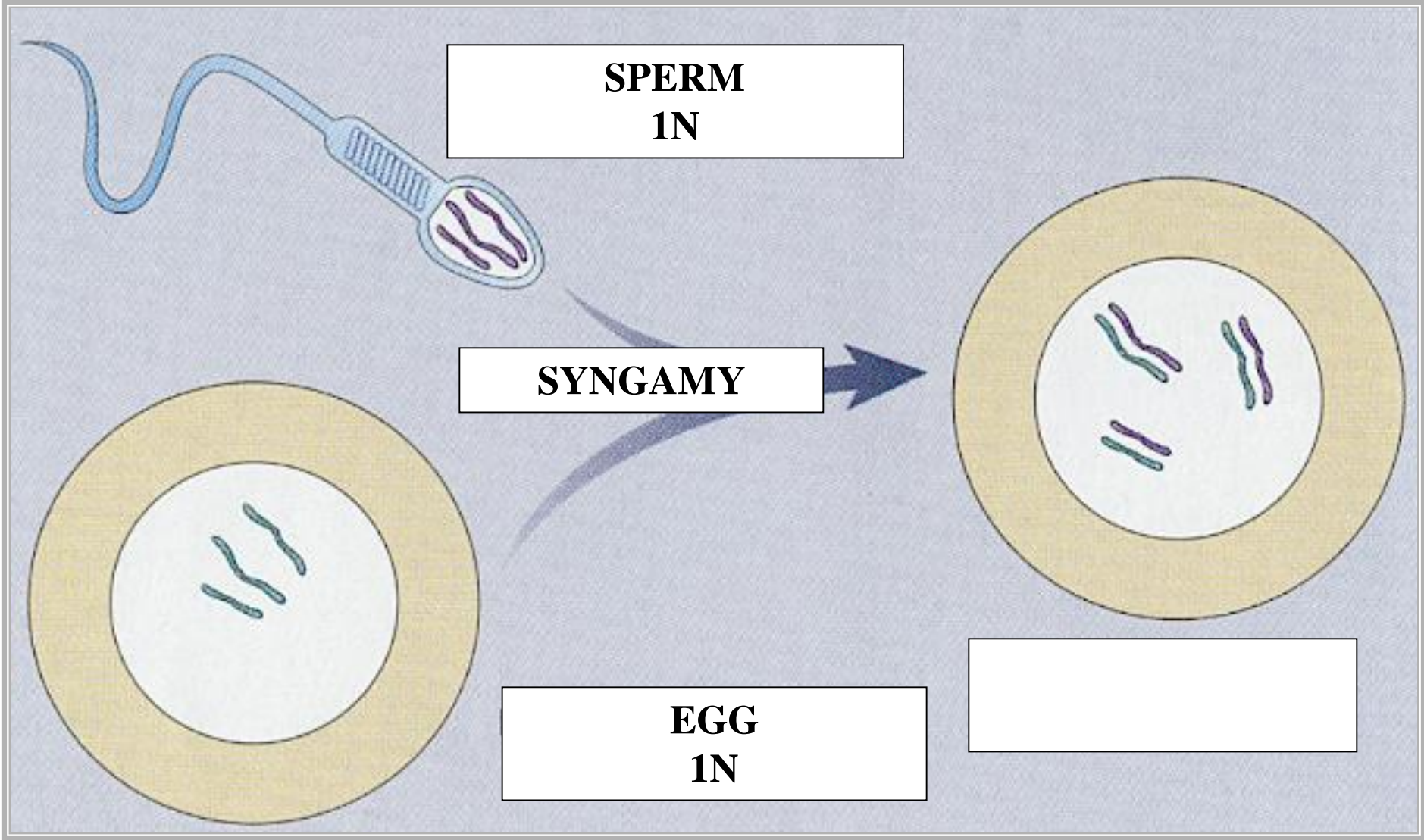
## SYNGAMY





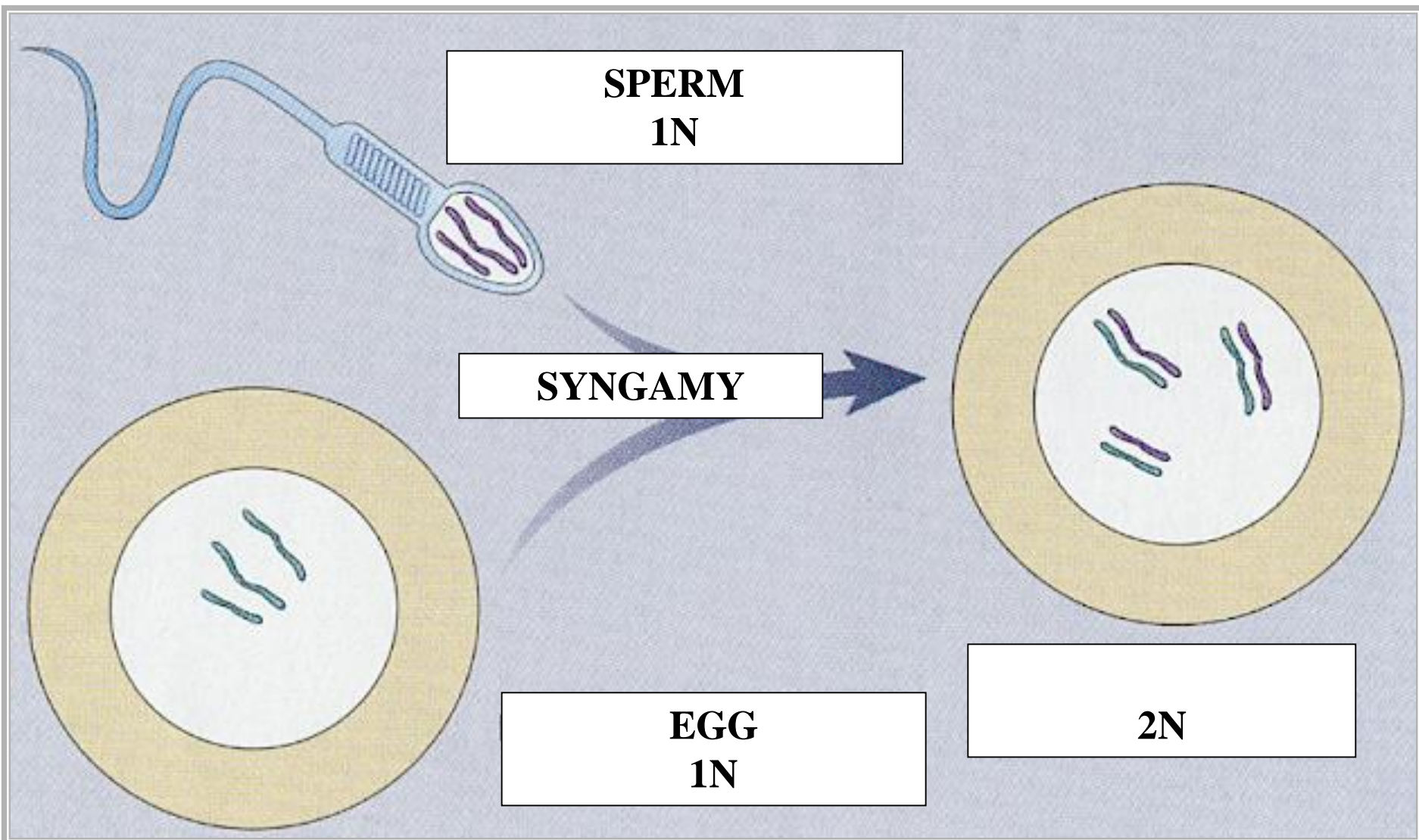
# FERTILIZATION

## SYNGAMY



# FERTILIZATION

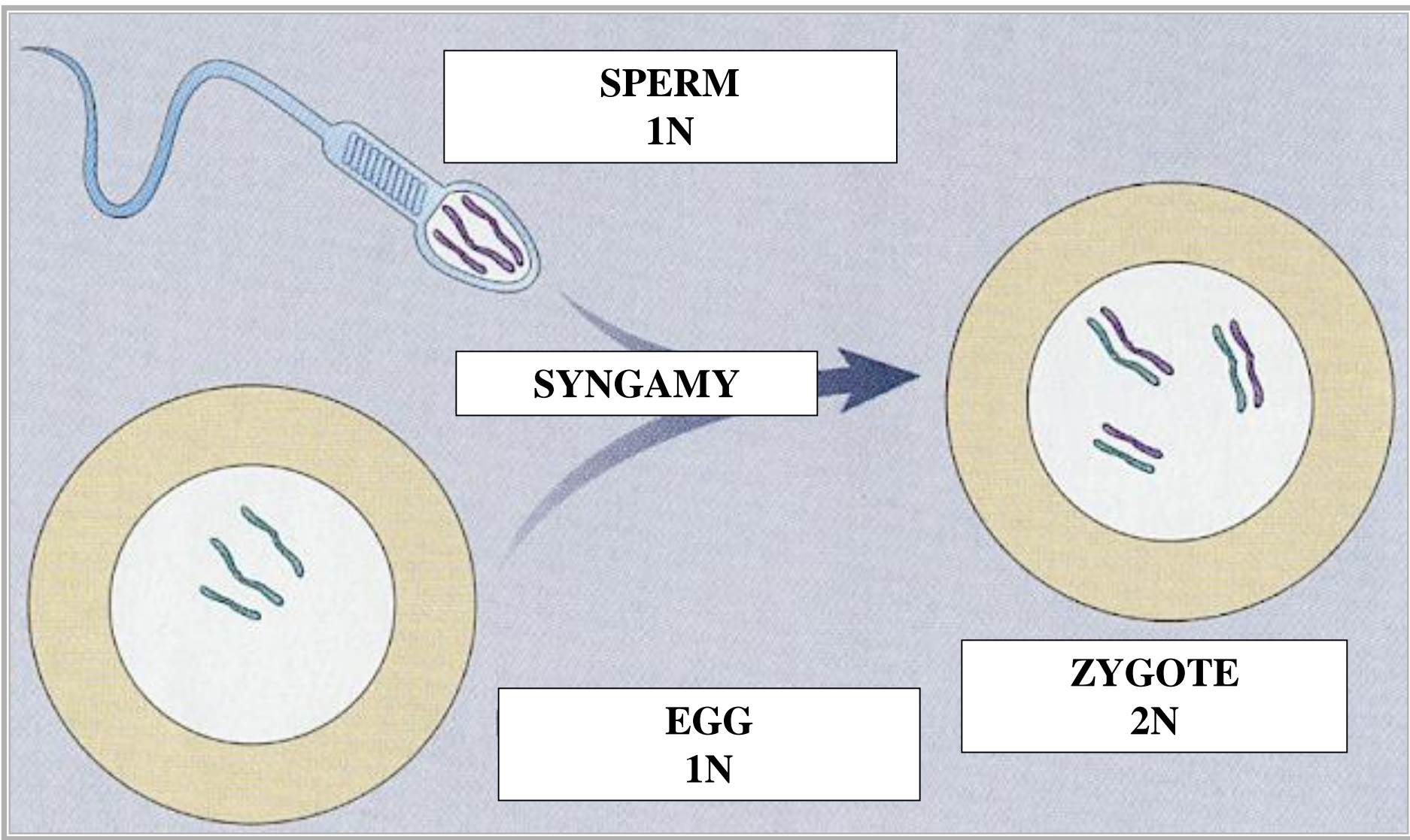
## SYNGAMY





# FERTILIZATION

## SYNGAMY





**SEXUAL LIFE CYCLE**

**MEIOSIS REDUCES**

**2N PHASE**

**TO**

**1N PHASE**

**SEXUAL LIFE CYCLE**



**SEXUAL LIFE CYCLE**

**FERTILIZATION**

**RESTORES**

**1N PHASE**

**TO**

**2N PHASE**

**SEXUAL LIFE CYCLE**



**SEXUAL LIFE CYCLE**

**SEXUAL LIFE CYCLE**

**REQUIRES: MEIOSIS**

**SEXUAL LIFE CYCLE**





**SEXUAL LIFE CYCLE**

**SEXUAL LIFE CYCLE**

**REQUIRES: MEIOSIS**

**SEXUAL LIFE CYCLE**

**REQUIRES: FERTILIZATION**

**SEXUAL LIFE CYCLE**

# SEXUAL LIFE CYCLE TYPES

# **SEXUAL LIFE CYCLE TYPES**

**GAMETIC LIFE CYCLE**

# **SEXUAL LIFE CYCLE TYPES**

# **SEXUAL LIFE CYCLE TYPES**

**GAMETIC LIFE CYCLE  
ZYGOTIC LIFE CYCLE**

**SEXUAL LIFE CYCLE  
TYPES**

# SEXUAL LIFE CYCLE TYPES



GAMETIC LIFE CYCLE  
ZYGOTIC LIFE CYCLE  
SPORIC LIFE CYCLE

SEXUAL LIFE CYCLE  
TYPES



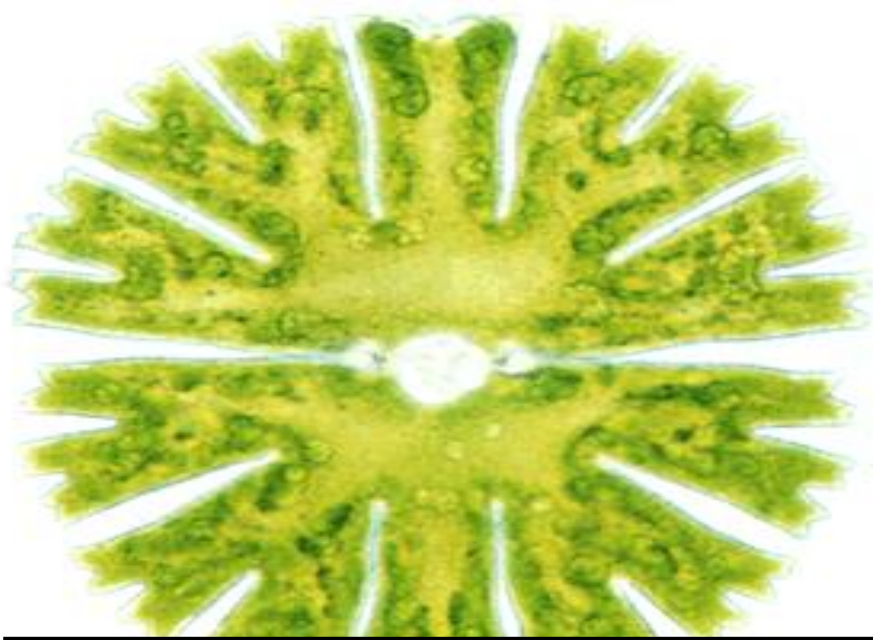
# GAMETIC LIFE CYCLE



# ANIMAL LIFE CYCLE







# GREEN ALGAE





*ACETABULARIA*  
GREEN ALGA  
GAMETIC LIFE CYCLE



# *ACETABULARIA*

## GAMETIC LIFE CYCLE



# *ACETABULARIA*

## GAMETIC LIFE CYCLE



# *ACETABULARIA*

## GAMETIC LIFE CYCLE



# *ACETABULARIA*

## GAMETIC LIFE CYCLE



GAMETANGIA

# *ACETABULARIA*

## GAMETIC LIFE CYCLE



GAMETOCYTES

# *ACETABULARIA*

## GAMETIC LIFE CYCLE



GAMETOCYTES 2N

# *ACETABULARIA*

## GAMETIC LIFE CYCLE

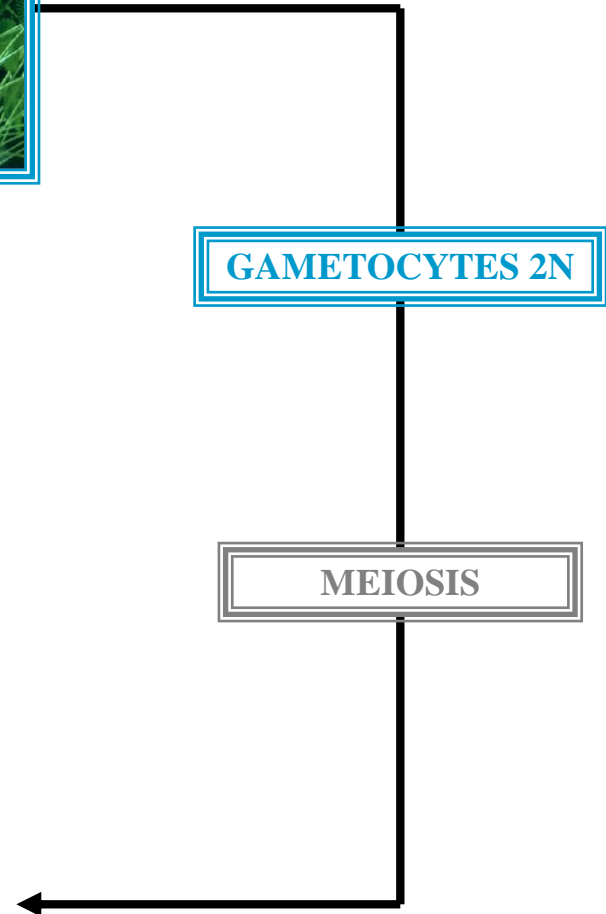


GERM CELLS



# *ACETABULARIA*

## GAMETIC LIFE CYCLE



# *ACETABULARIA*

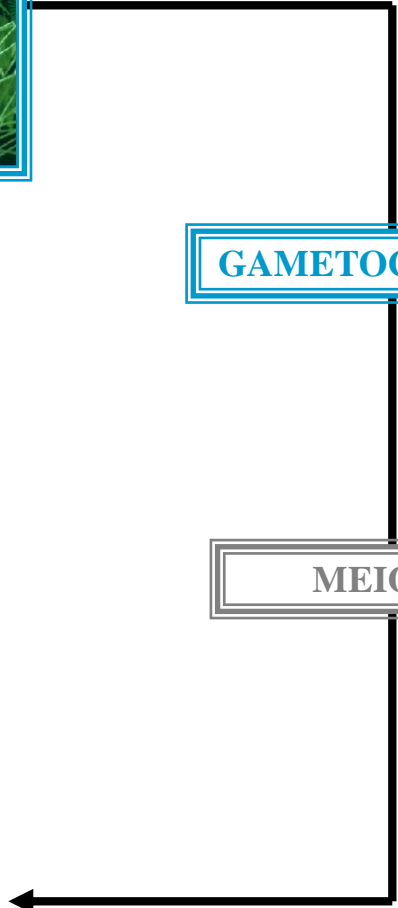
## GAMETIC LIFE CYCLE



GAMETOCYTES 2N

MEIOSIS

GAMETES



# *ACETABULARIA*

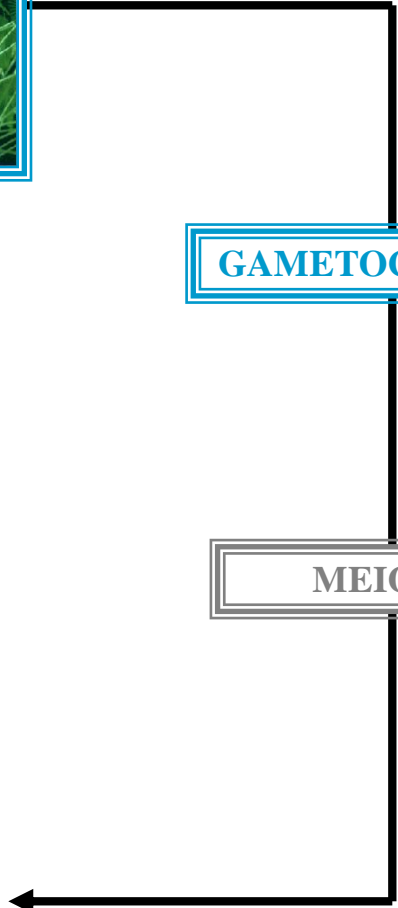
## GAMETIC LIFE CYCLE



GAMETOCYTES 2N

MEIOSIS

GAMETES 1N



# *ACETABULARIA*

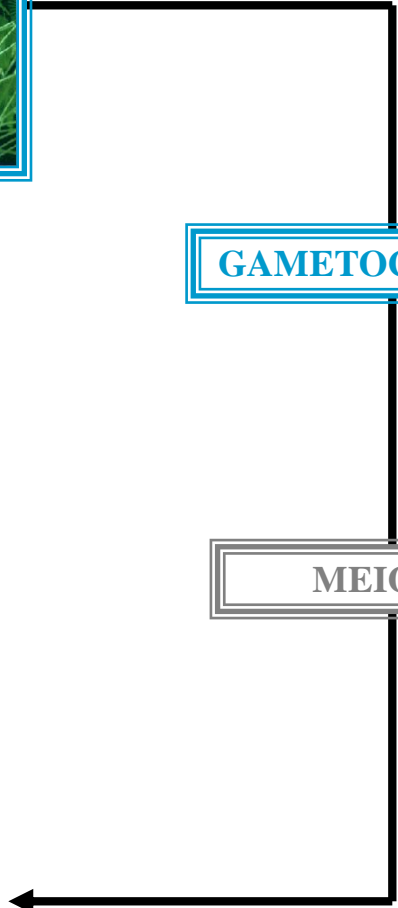
## GAMETIC LIFE CYCLE



GAMETOCYTES 2N

MEIOSIS

1N PHASE



# *ACETABULARIA*

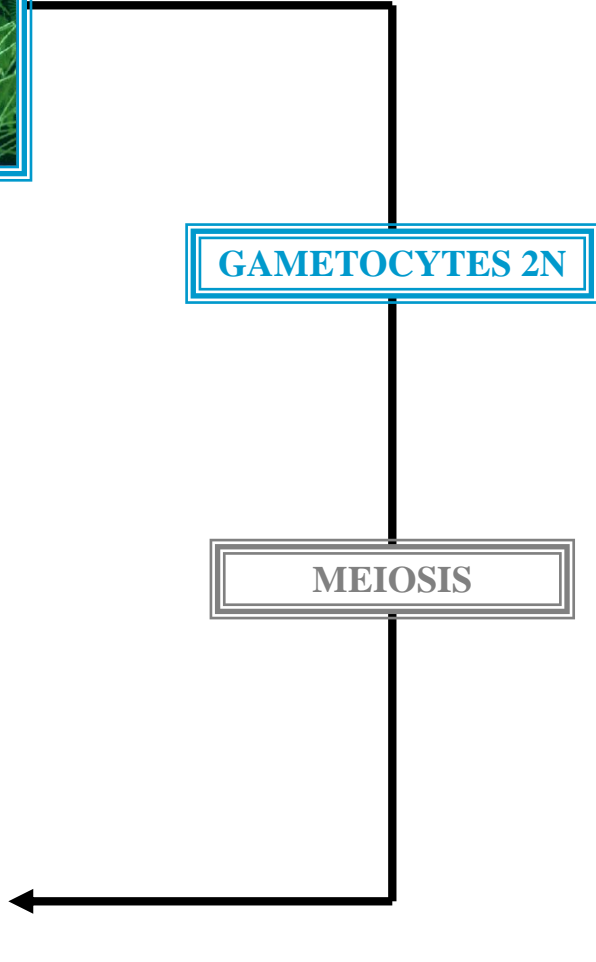
## GAMETIC LIFE CYCLE



GAMETOCYTES 2N

MEIOSIS

1N PHASE  
UNICELLULAR



# *ACETABULARIA*

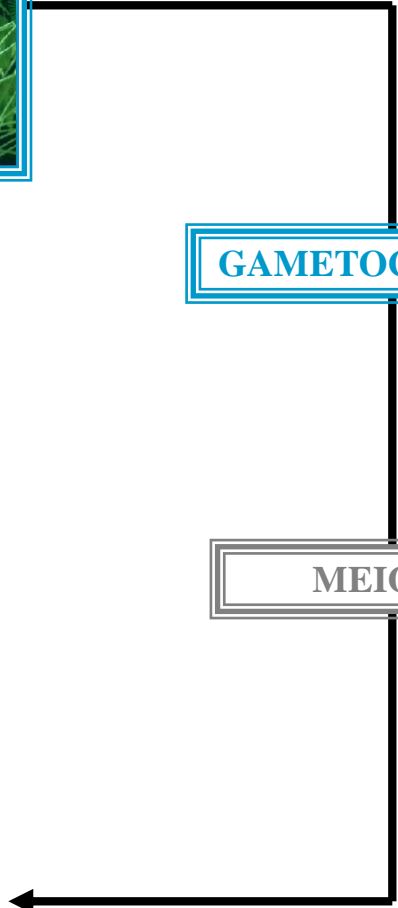
## GAMETIC LIFE CYCLE



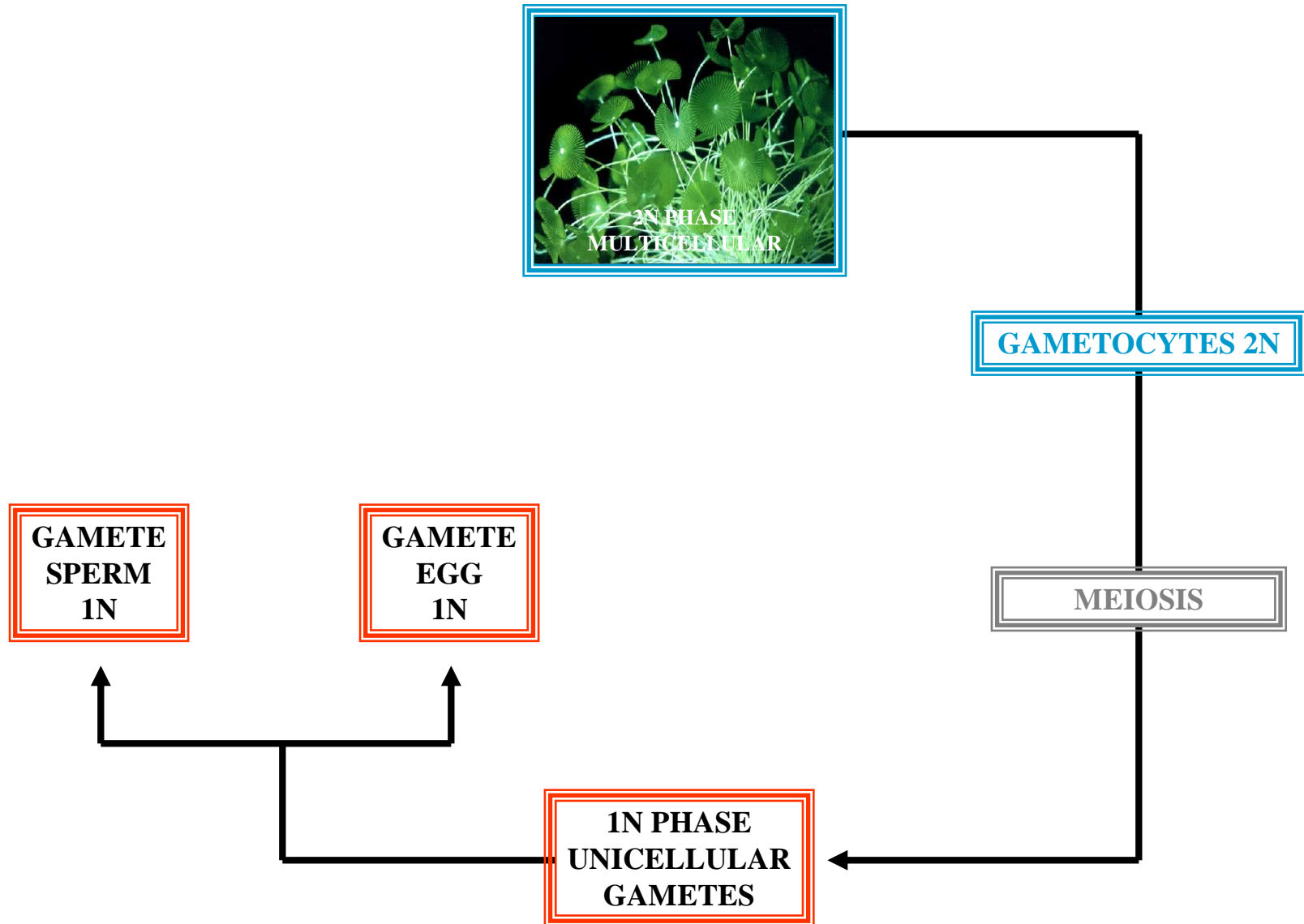
GAMETOCYTES 2N

MEIOSIS

1N PHASE  
UNICELLULAR  
GAMETES



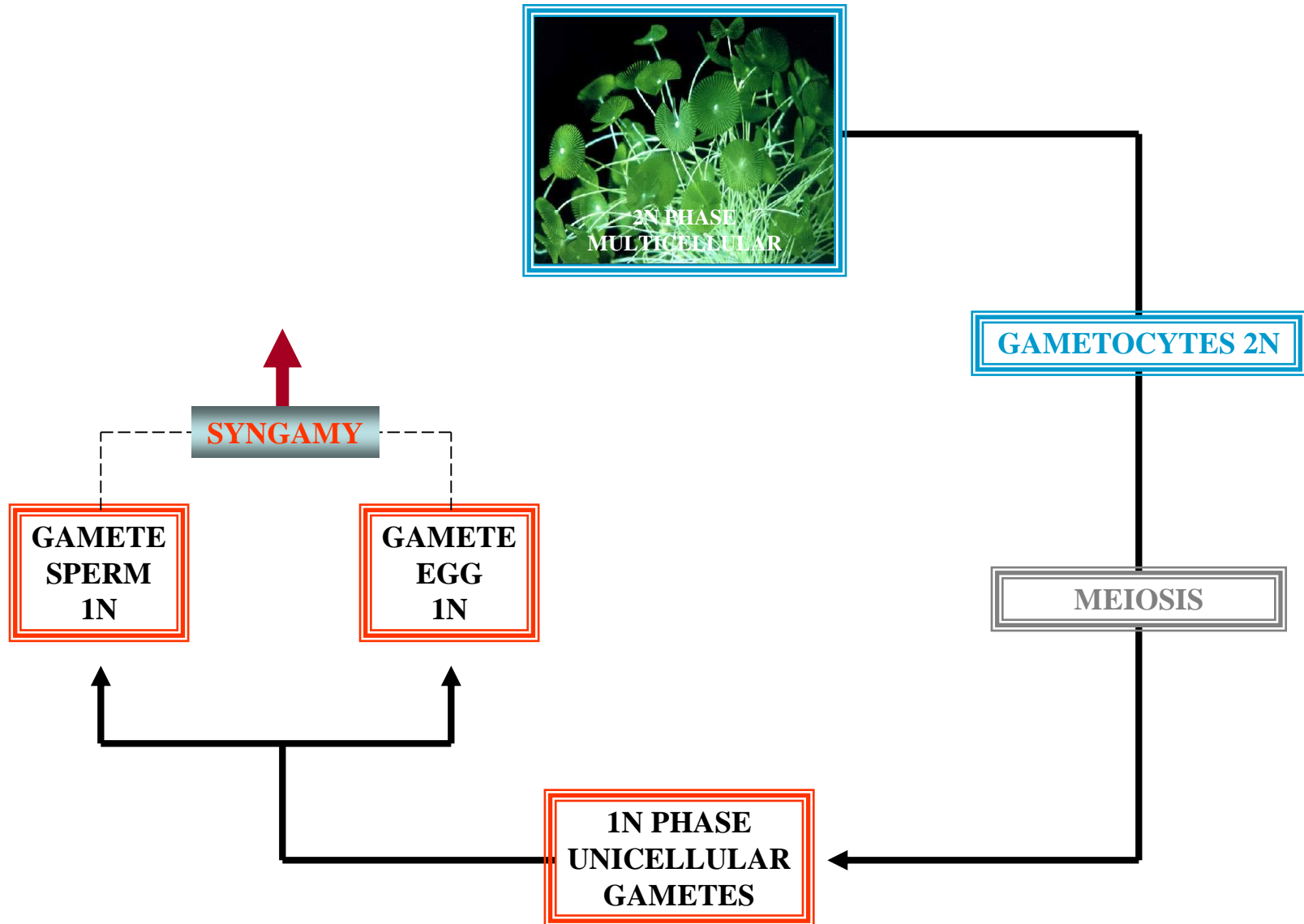
# *ACETABULARIA* GAMETIC LIFE CYCLE





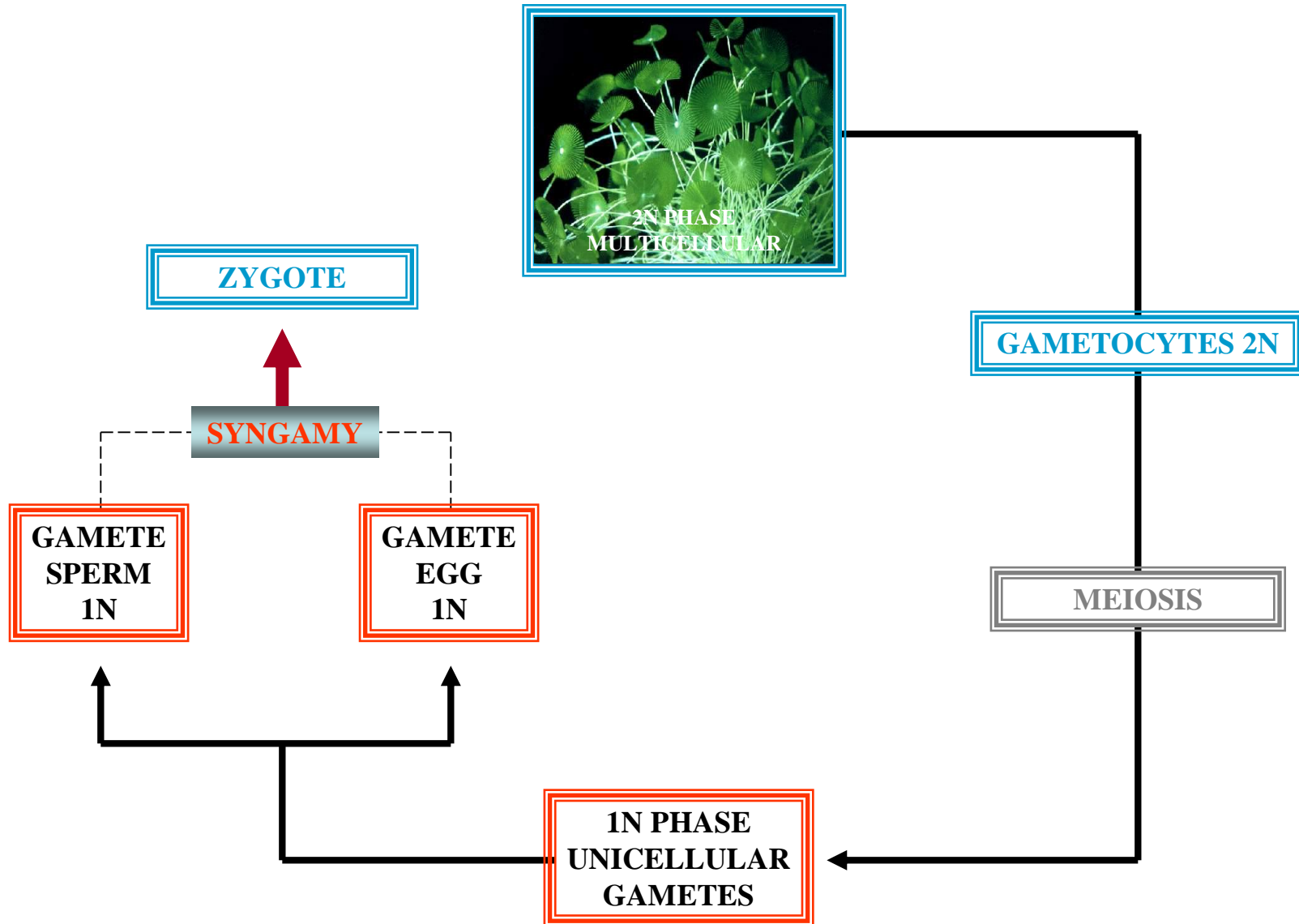
# *ACETABULARIA*

## GAMETIC LIFE CYCLE



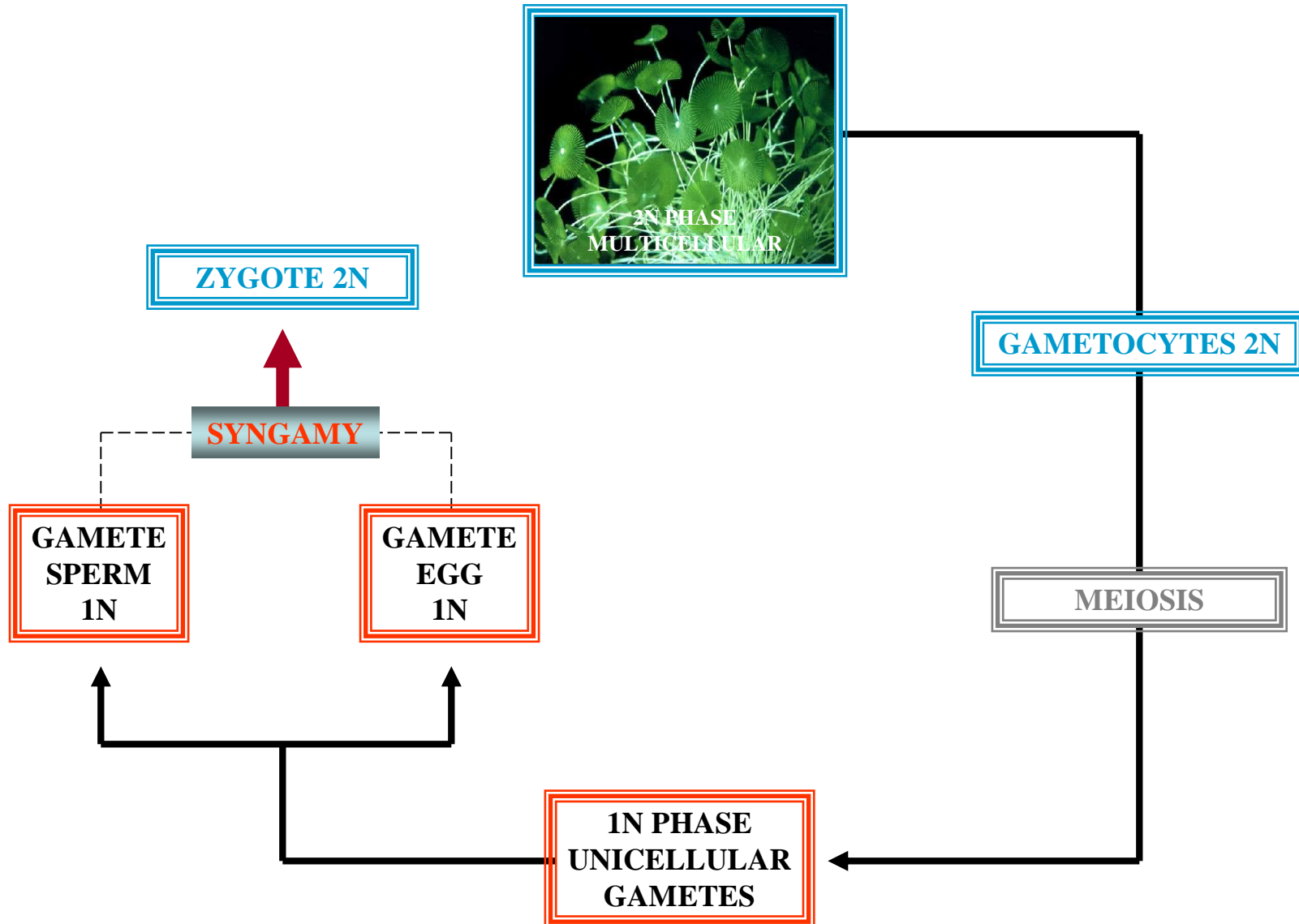
# ACETABULARIA

## GAMETIC LIFE CYCLE



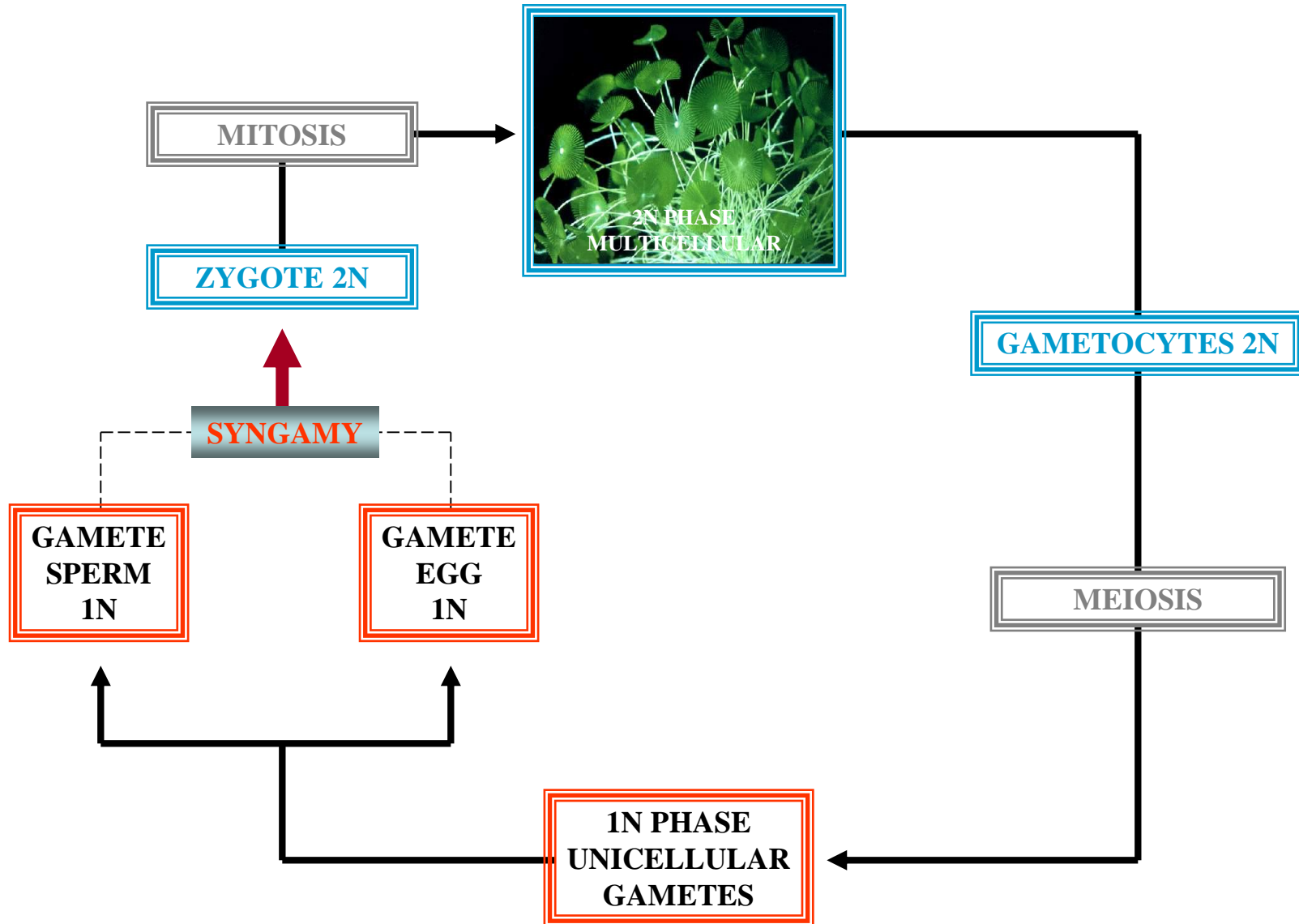
# ACETABULARIA

## GAMETIC LIFE CYCLE



# ACETABULARIA

## GAMETIC LIFE CYCLE



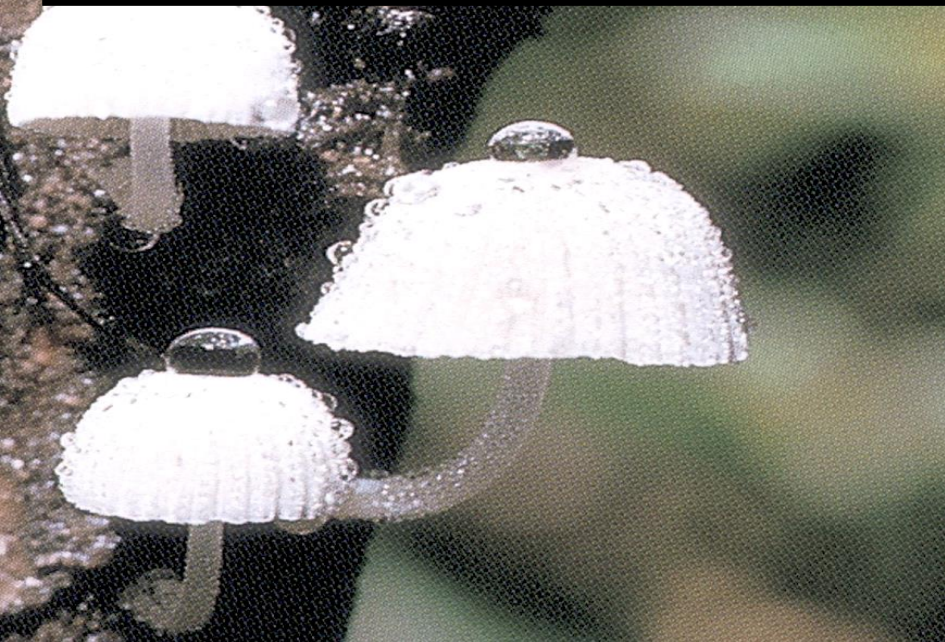


# ZYGOTIC LIFE CYCLE

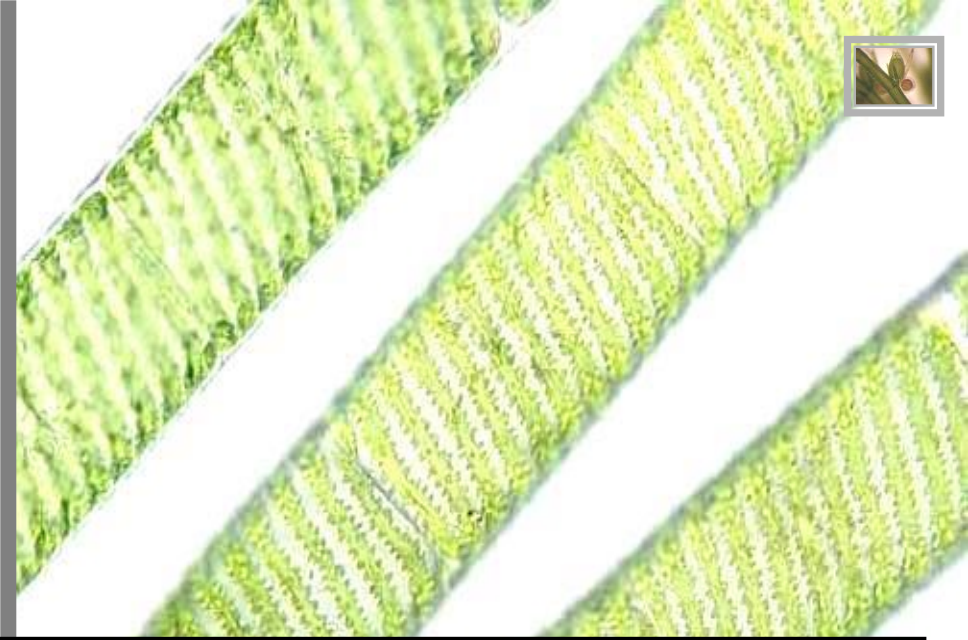
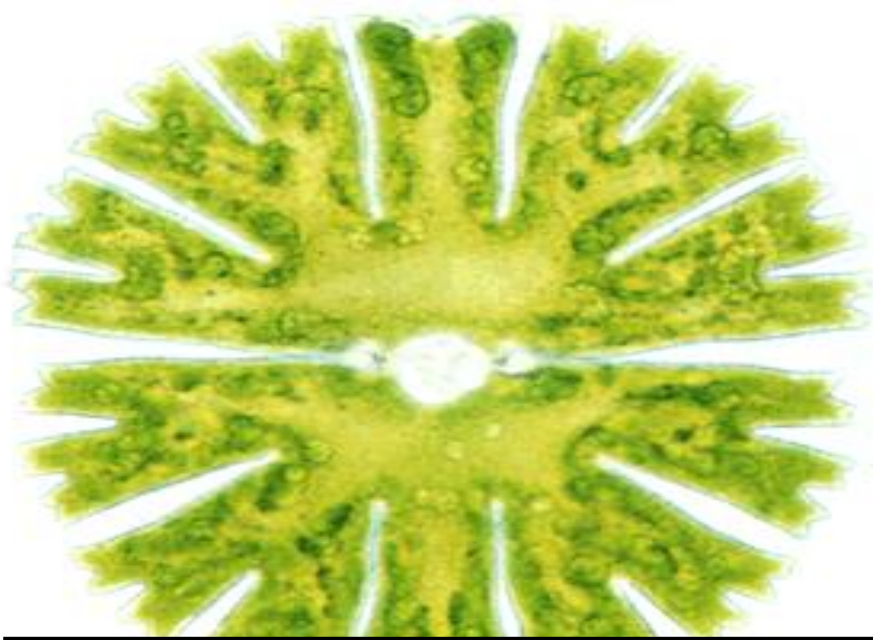




# FUNGUS LIFE CYCLE







# GREEN ALGAE







*CHARA*  
GREEN ALGA  
ZYGOTIC LIFE CYCLE



# *CHARA* ZYGOTIC LIFE CYCLE



# *CHARA* ZYGOTIC LIFE CYCLE



1N PHASE

# *CHARA* ZYGOTIC LIFE CYCLE



IN PHASE  
MULTICELLULAR

# *CHARA* ZYGOTIC LIFE CYCLE

**GAMETANGIA**



# *CHARA* ZYGOTIC LIFE CYCLE

**GAMETOCYTES**



IN PHASE  
MULTICELLULAR



# *CHARA* ZYGOTIC LIFE CYCLE

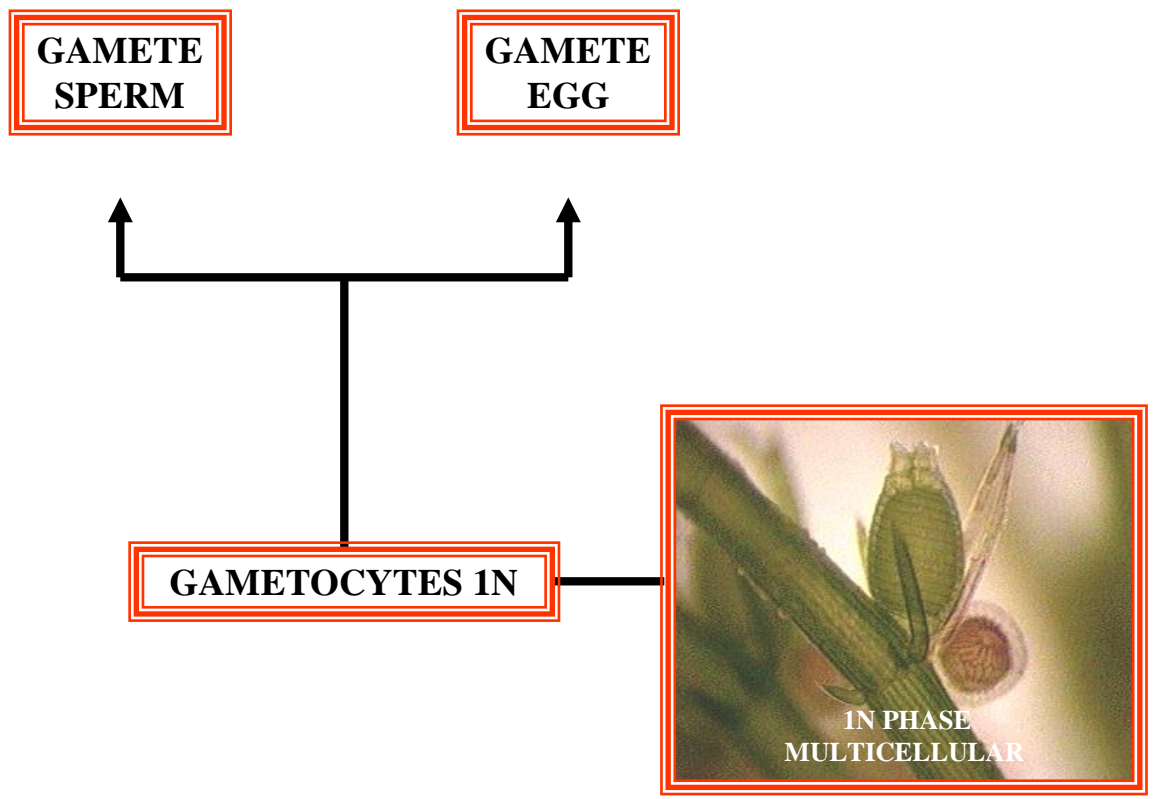


**GAMETOCYTES 1N**



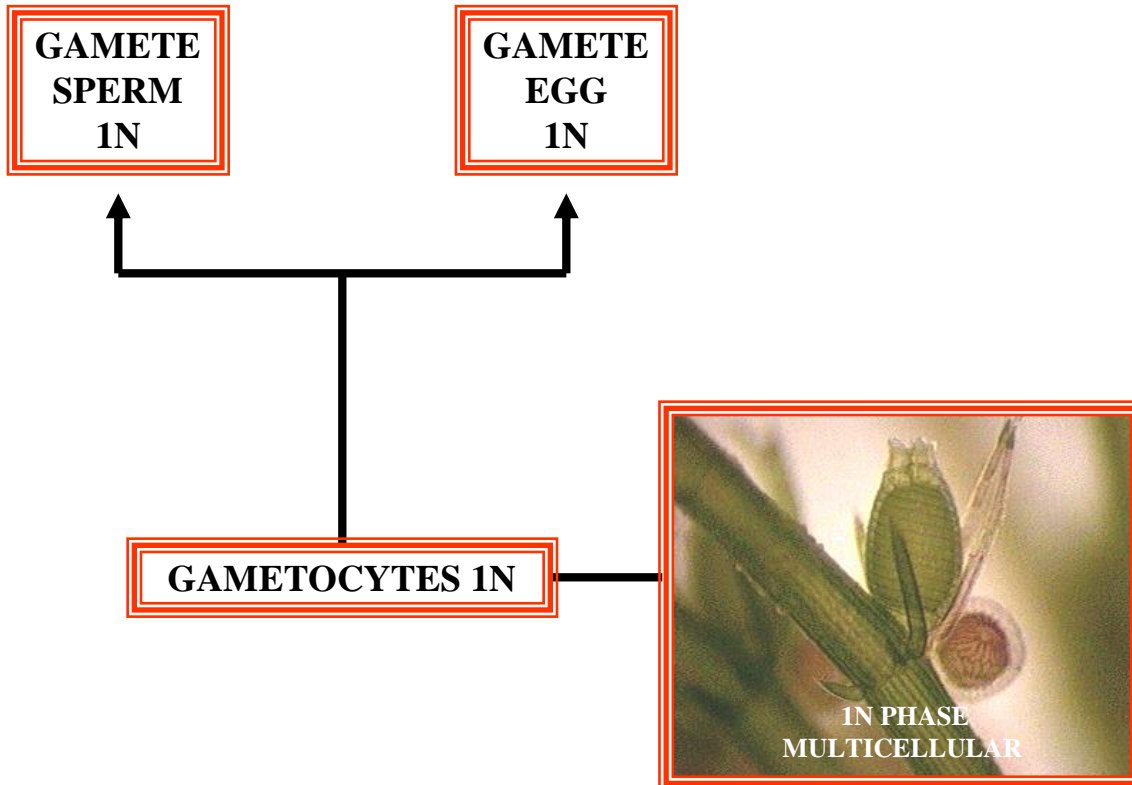
1N PHASE  
MULTICELLULAR

# CHARA ZYGOTIC LIFE CYCLE

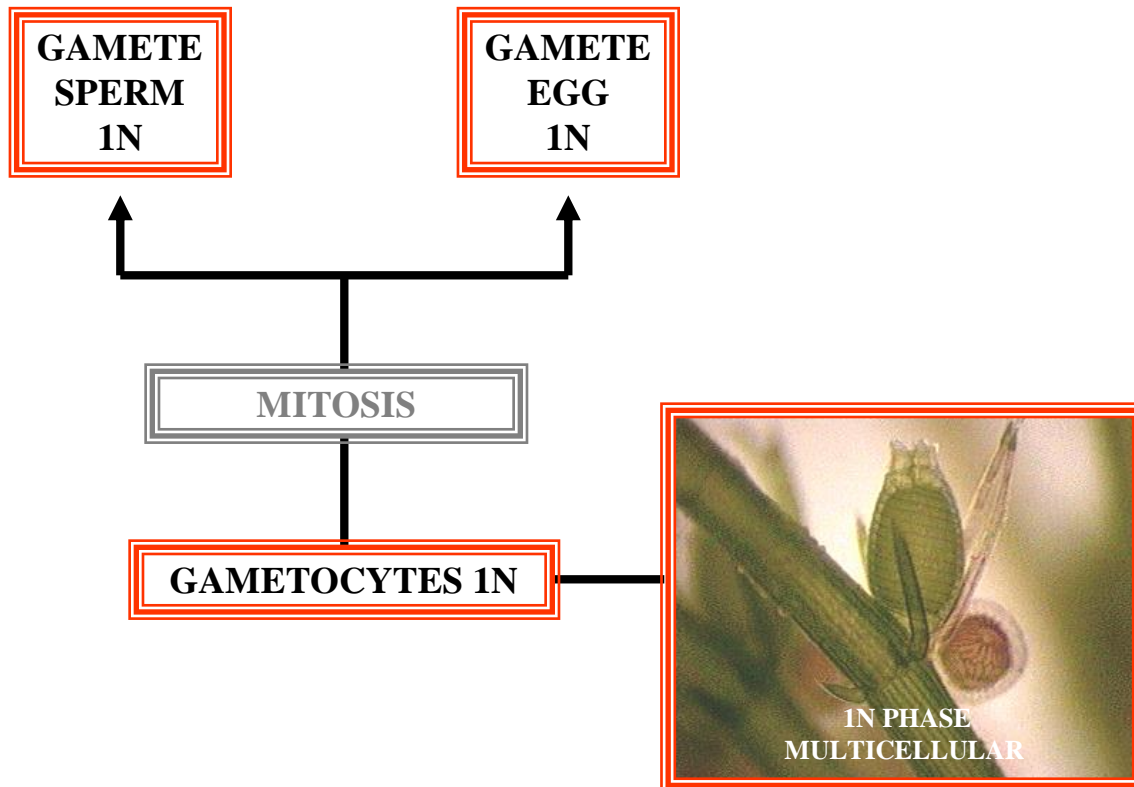


# CHARA

## ZYGOTIC LIFE CYCLE

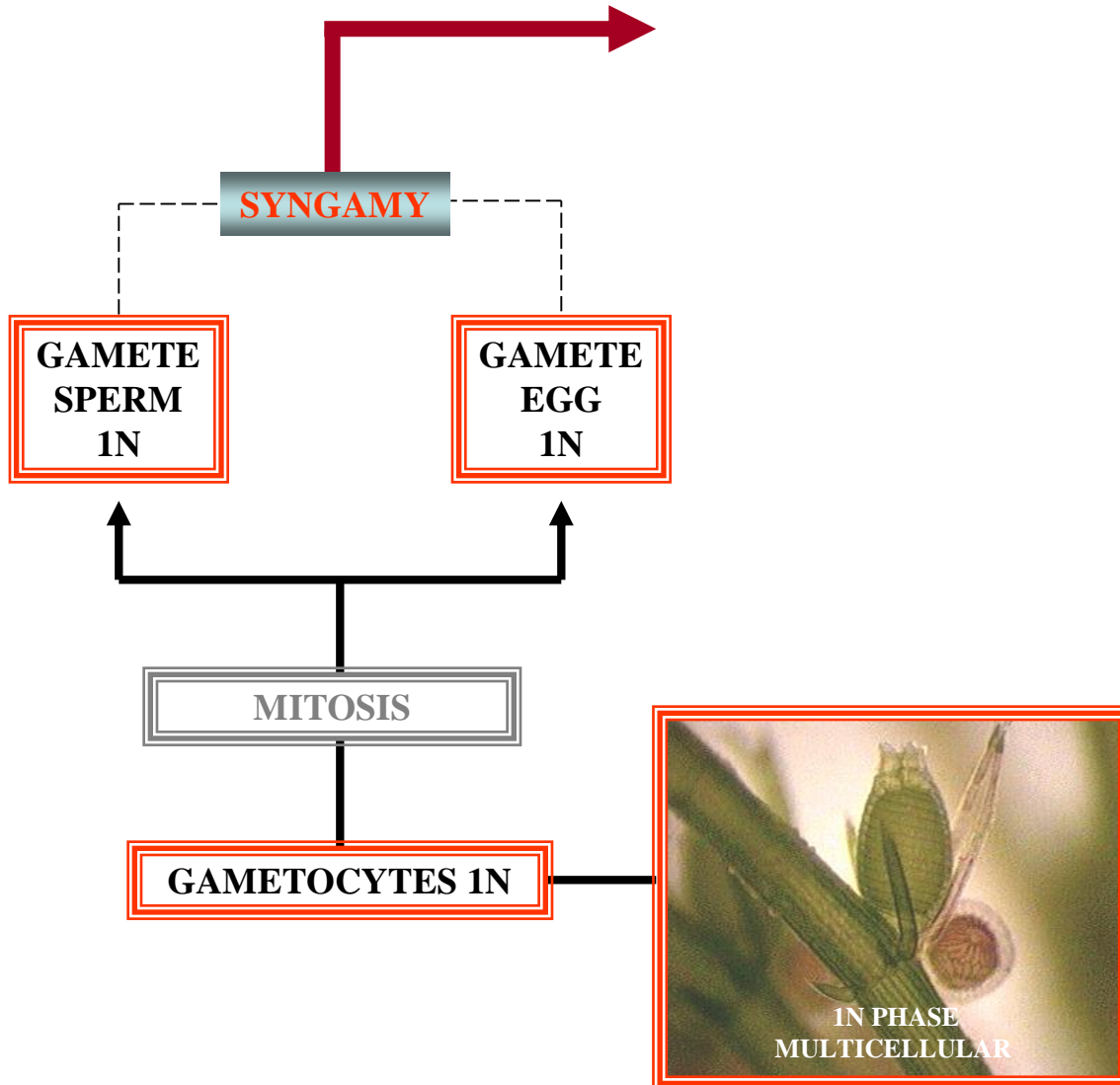


# *CHARA* ZYGOTIC LIFE CYCLE



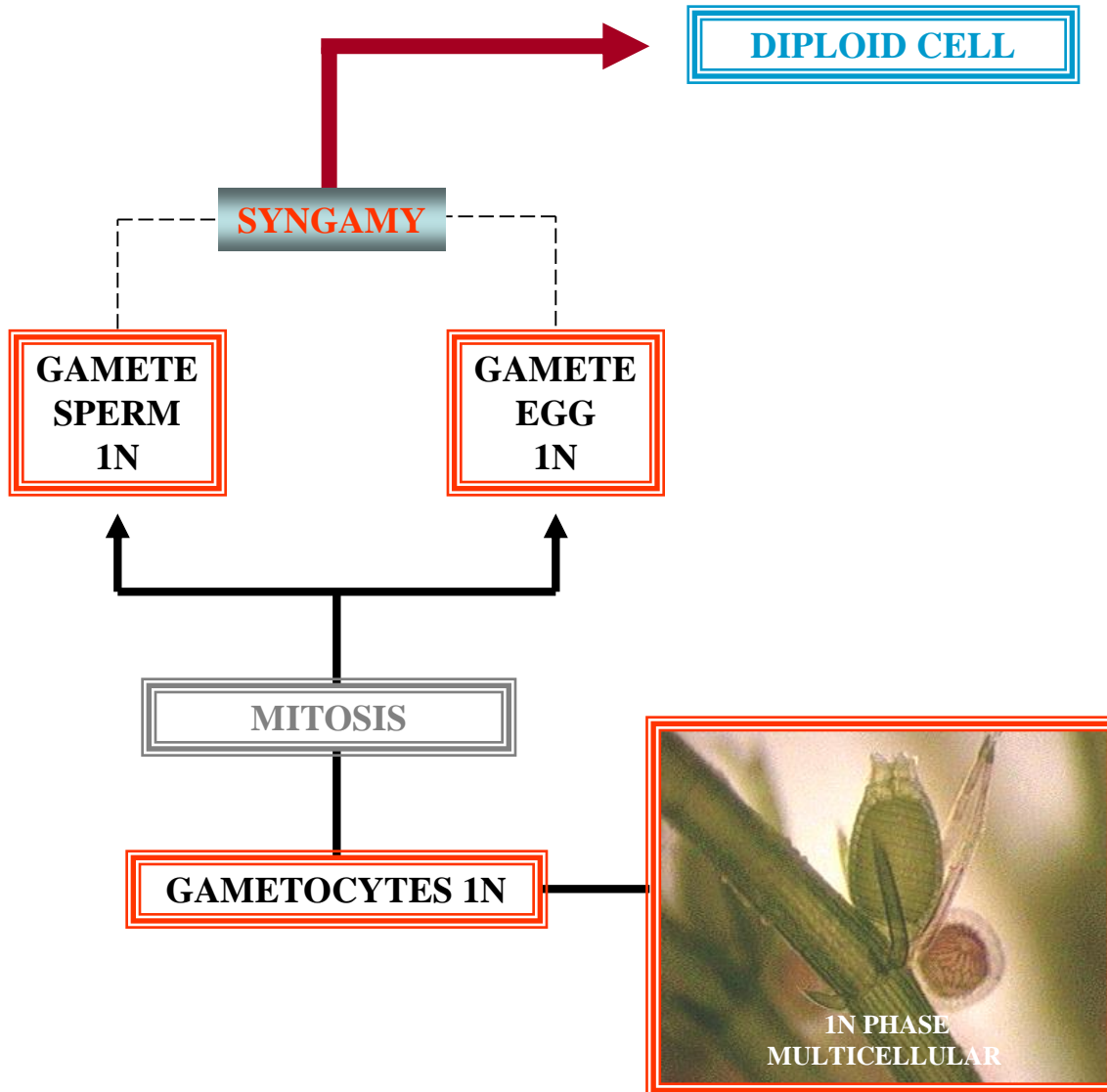
# CHARA

## ZYGOTIC LIFE CYCLE



# CHARA

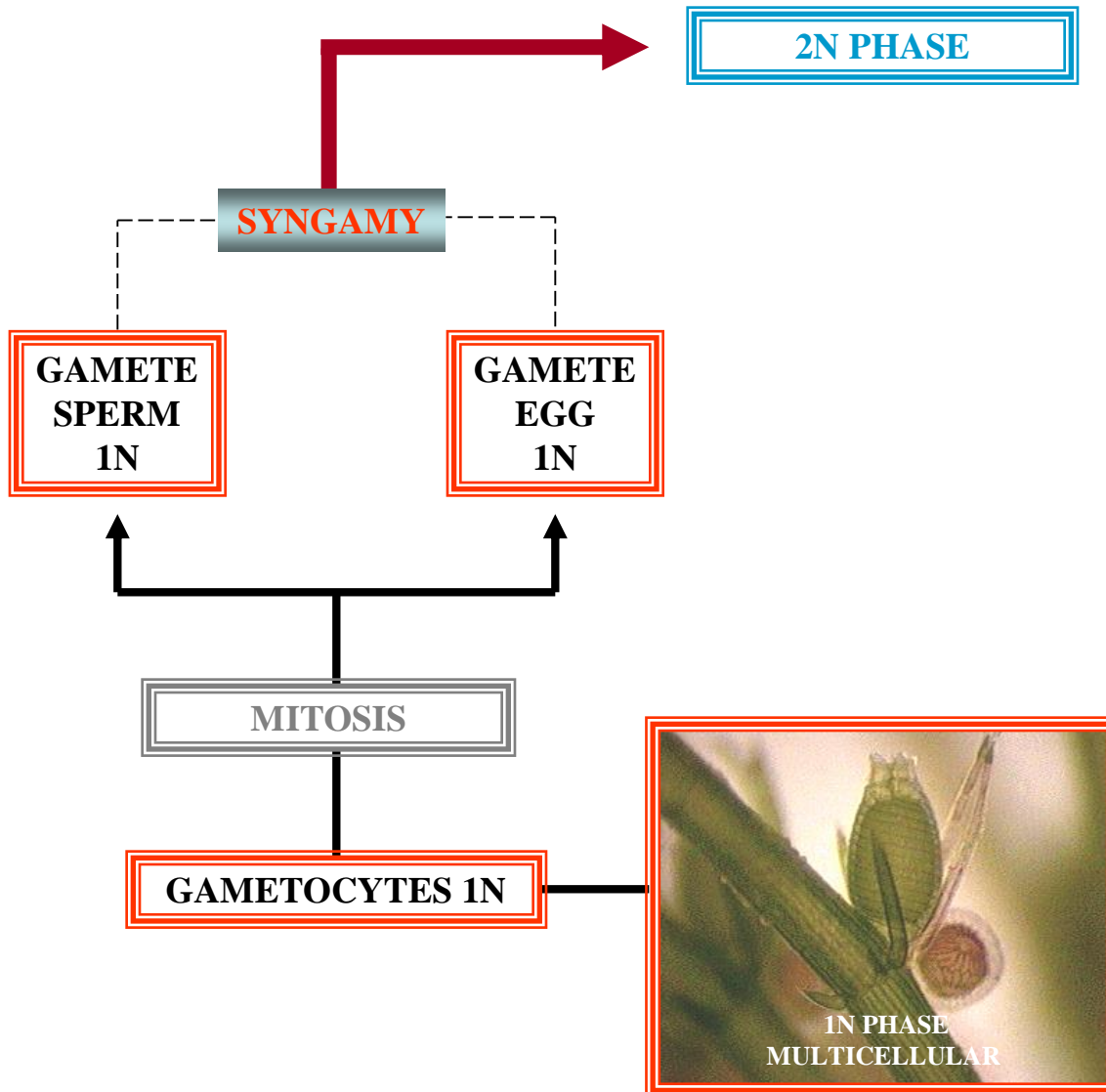
## ZYGOTIC LIFE CYCLE





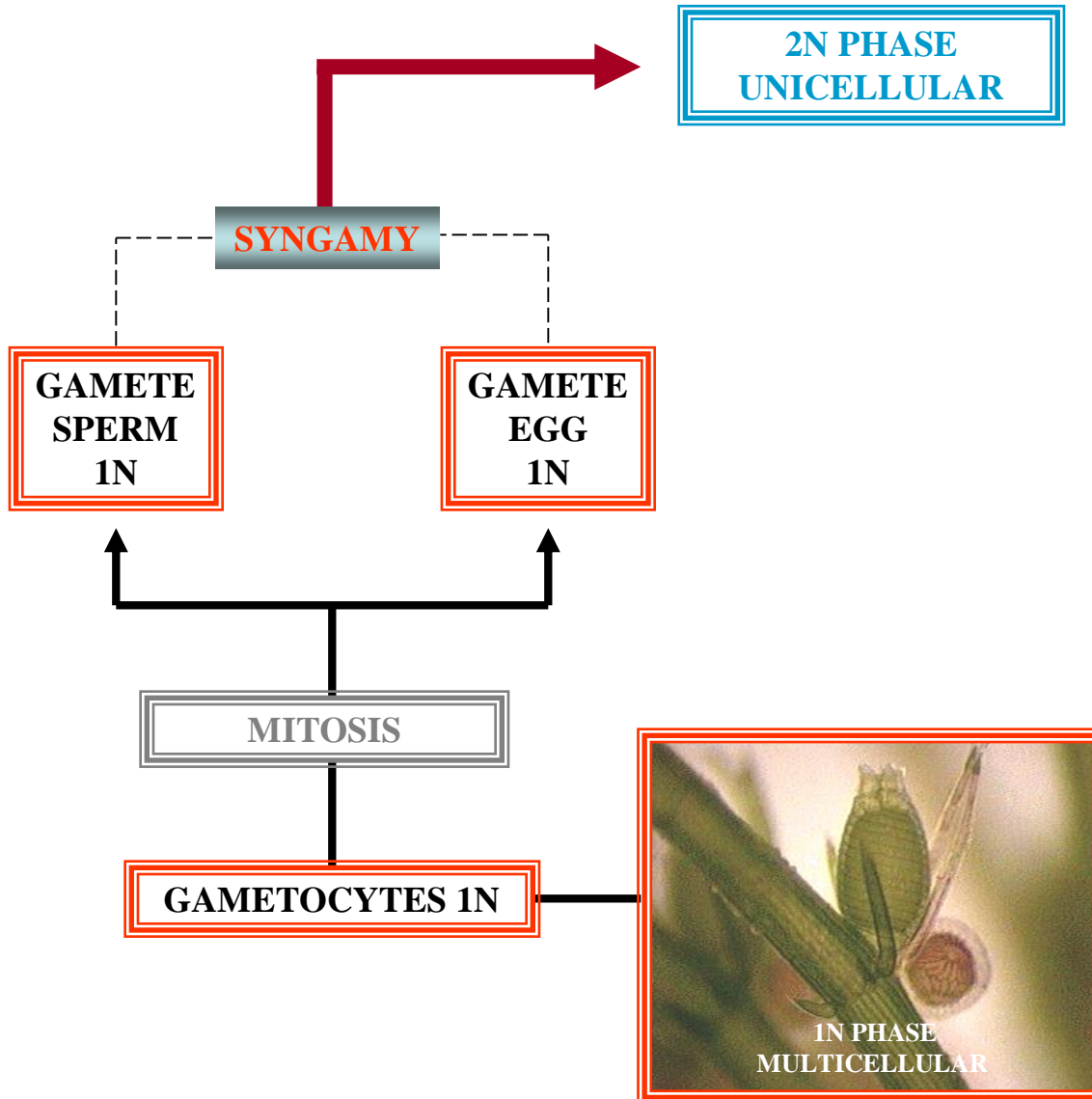
# CHARA

## ZYGOTIC LIFE CYCLE



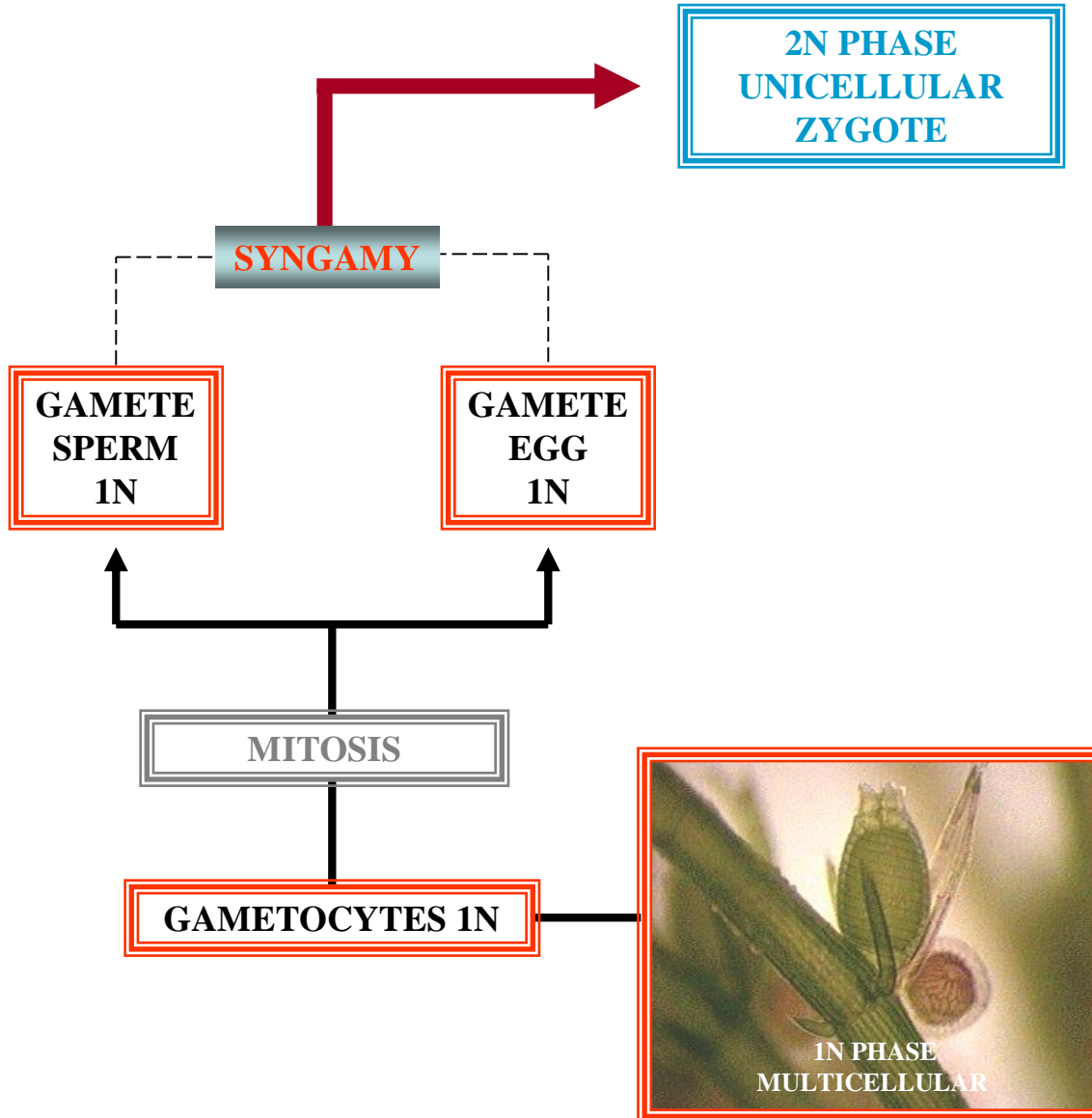
# CHARA

## ZYGOTIC LIFE CYCLE



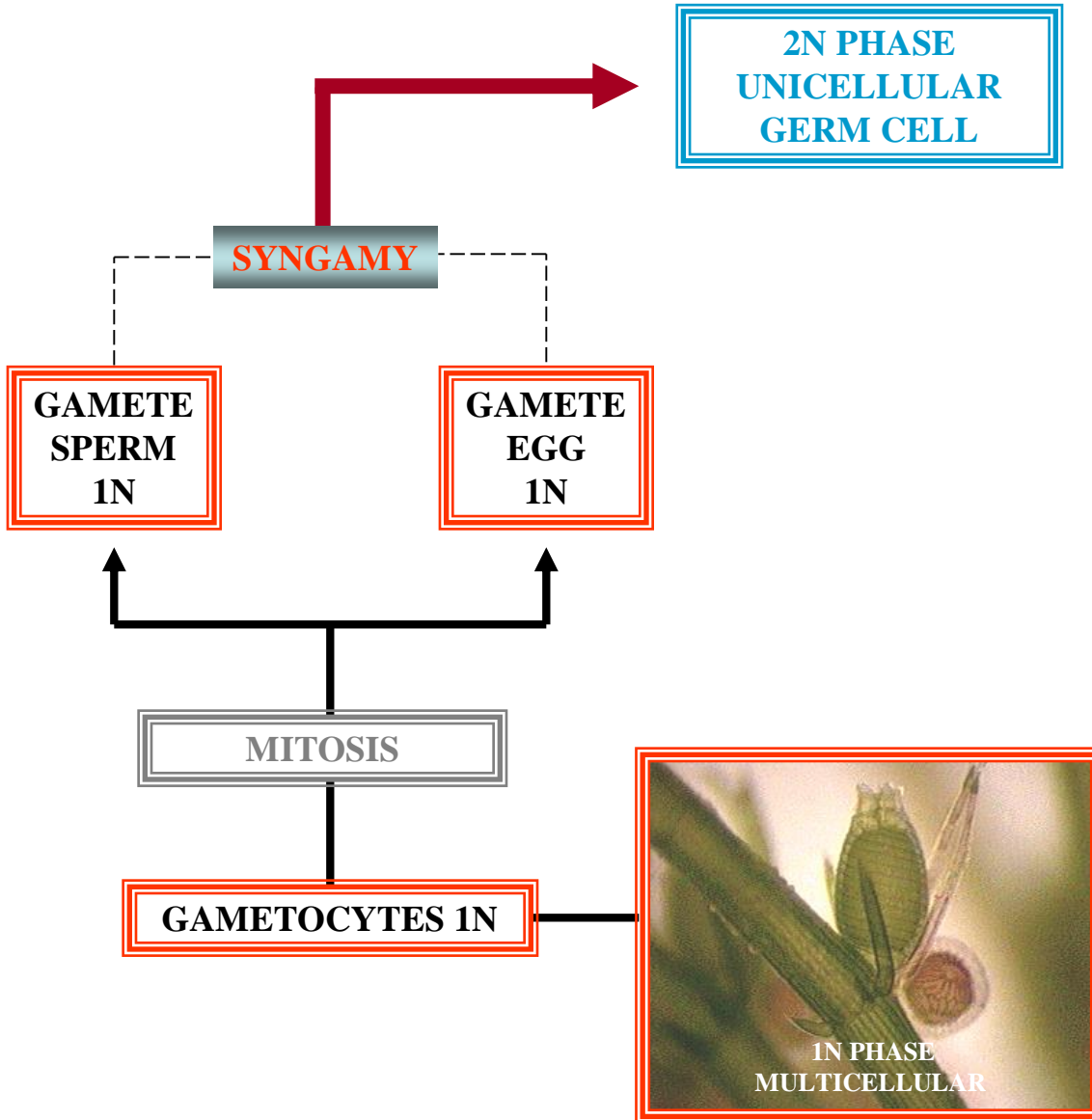
# CHARA

## ZYGOTIC LIFE CYCLE



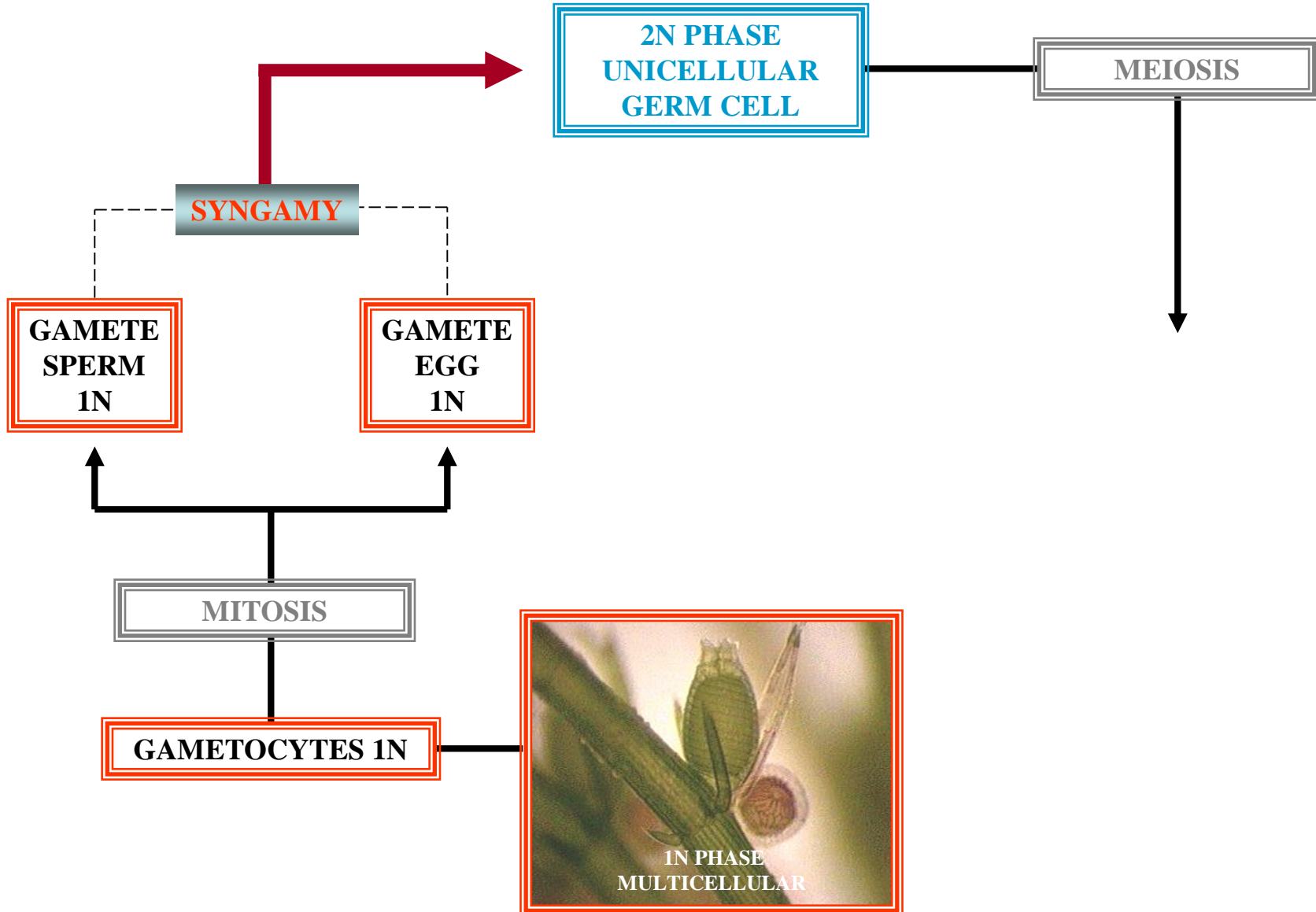
# CHARA

## ZYGOTIC LIFE CYCLE



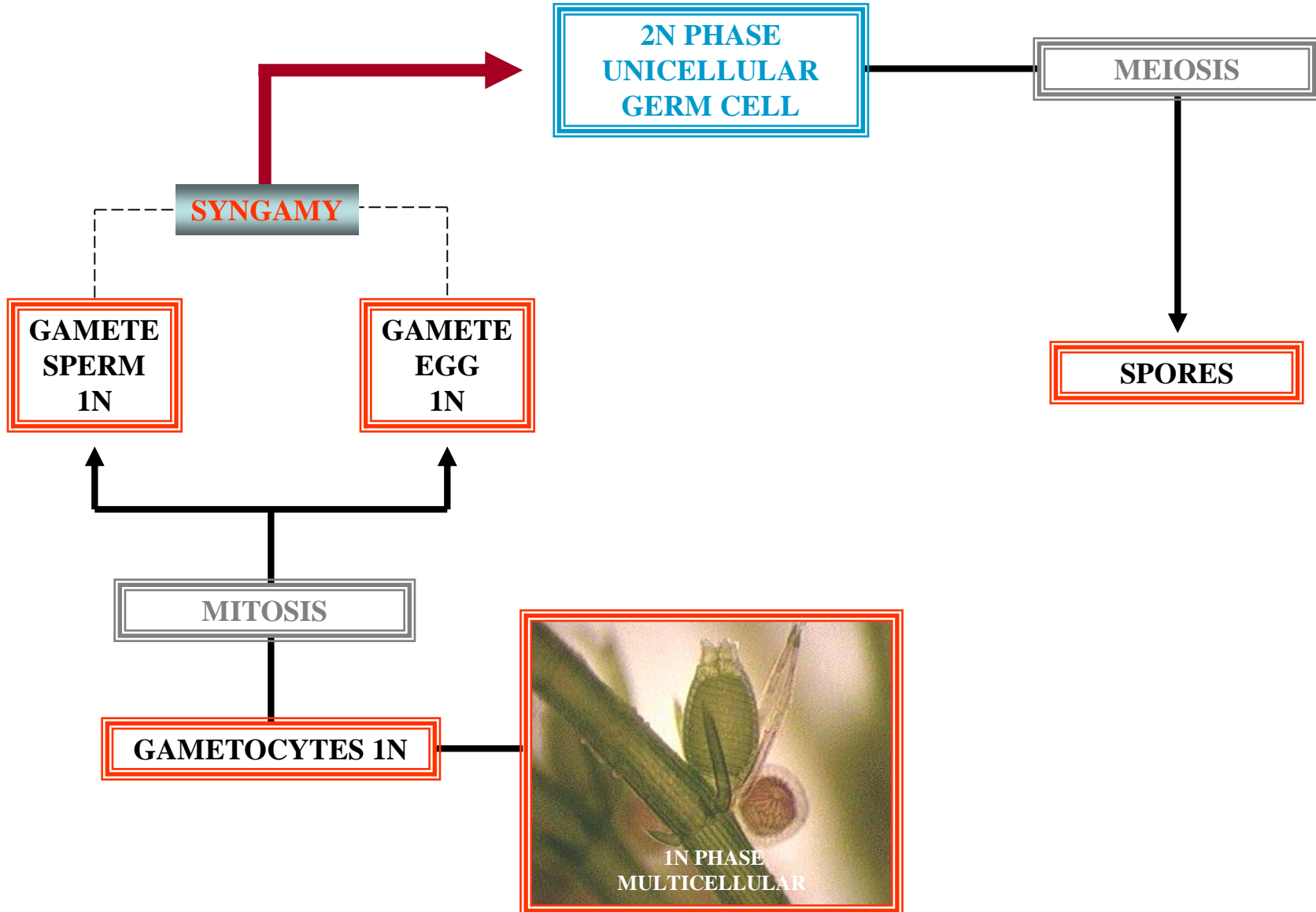
# CHARA

## ZYGOTIC LIFE CYCLE



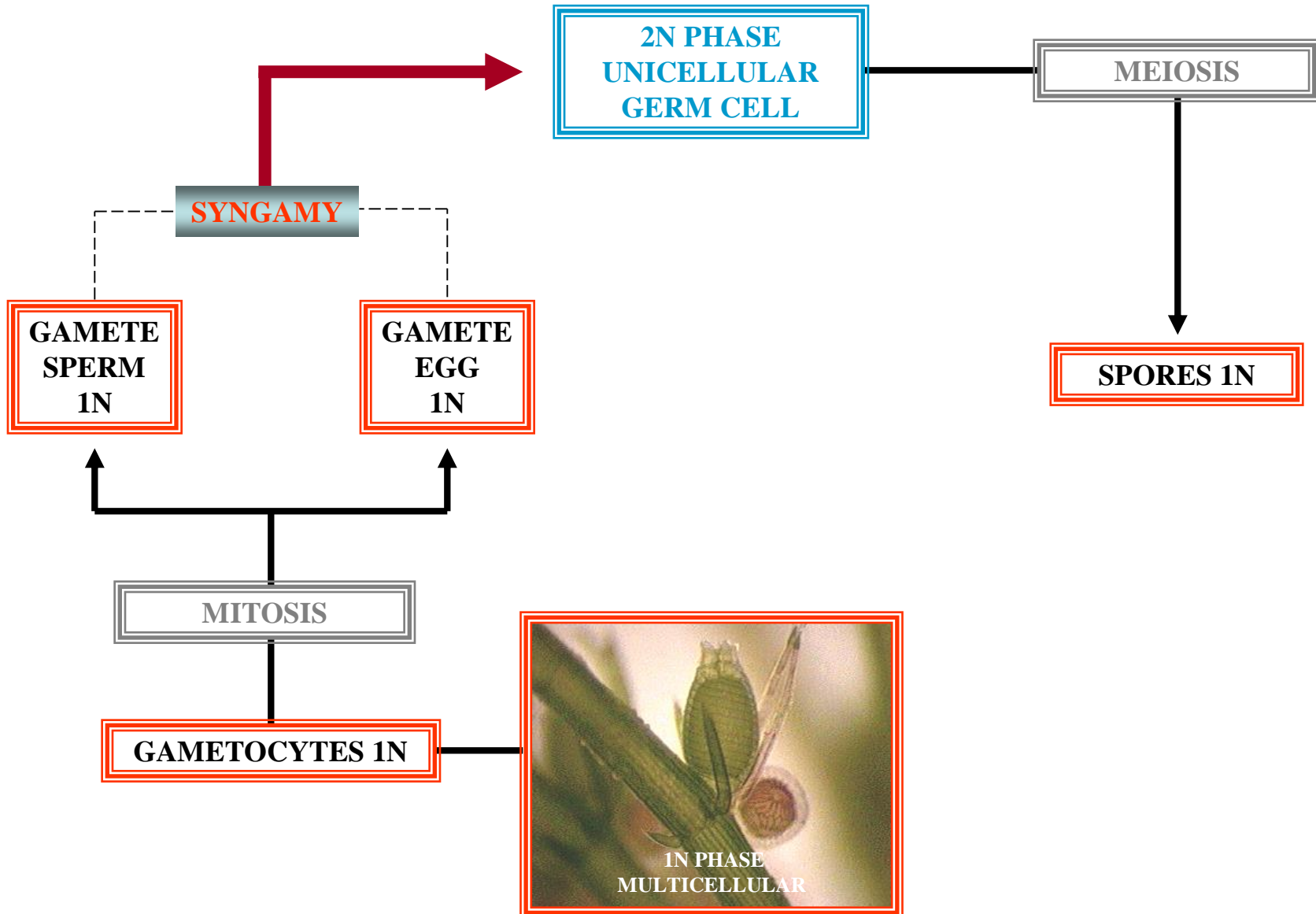
# CHARA

## ZYGOTIC LIFE CYCLE



# CHARA

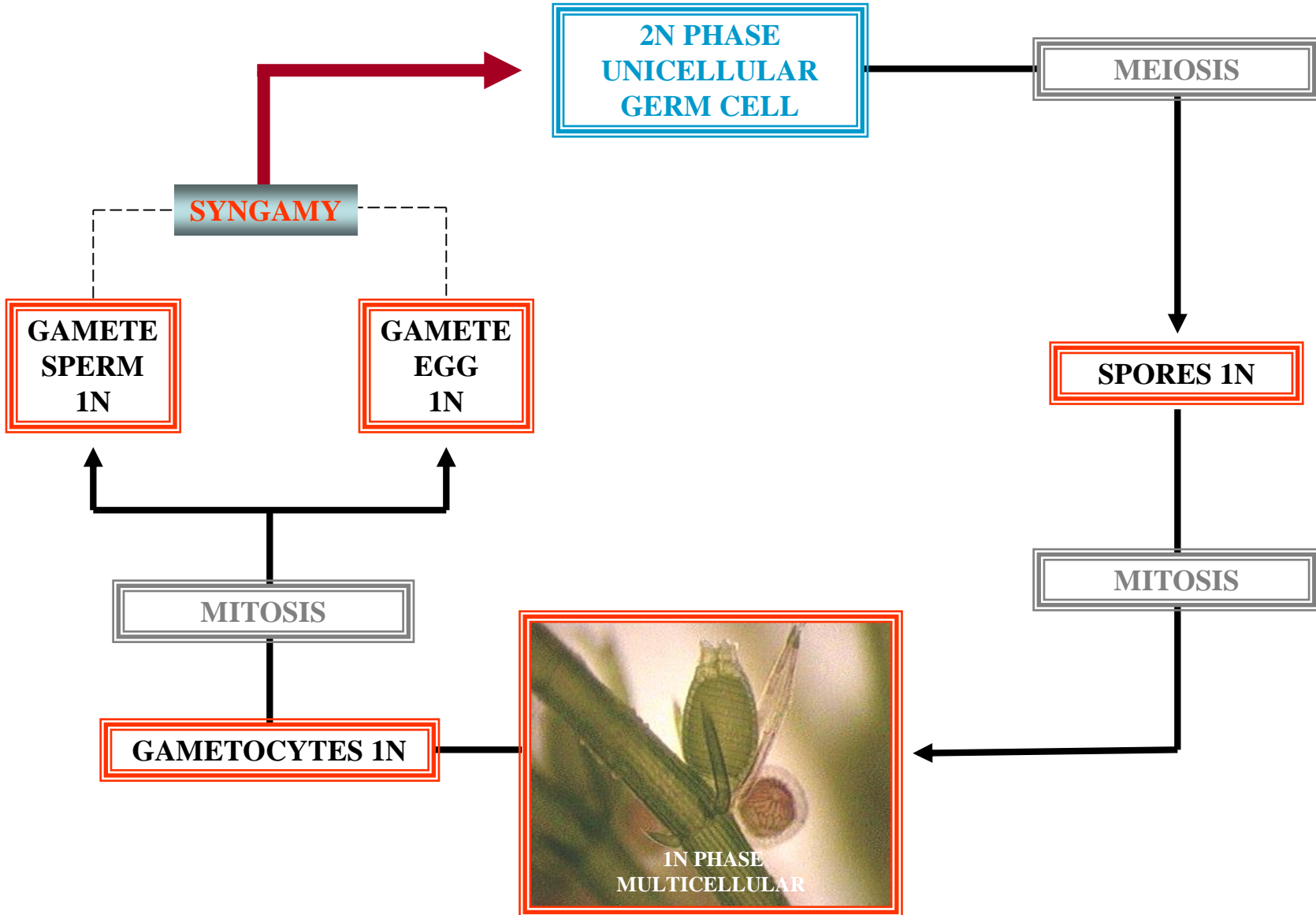
## ZYGOTIC LIFE CYCLE





# CHARA

## ZYGOTIC LIFE CYCLE





**GAMETIC  
LIFE CYCLE  
VS  
ZYGOTIC  
LIFE CYCLE  
SUMMARY**

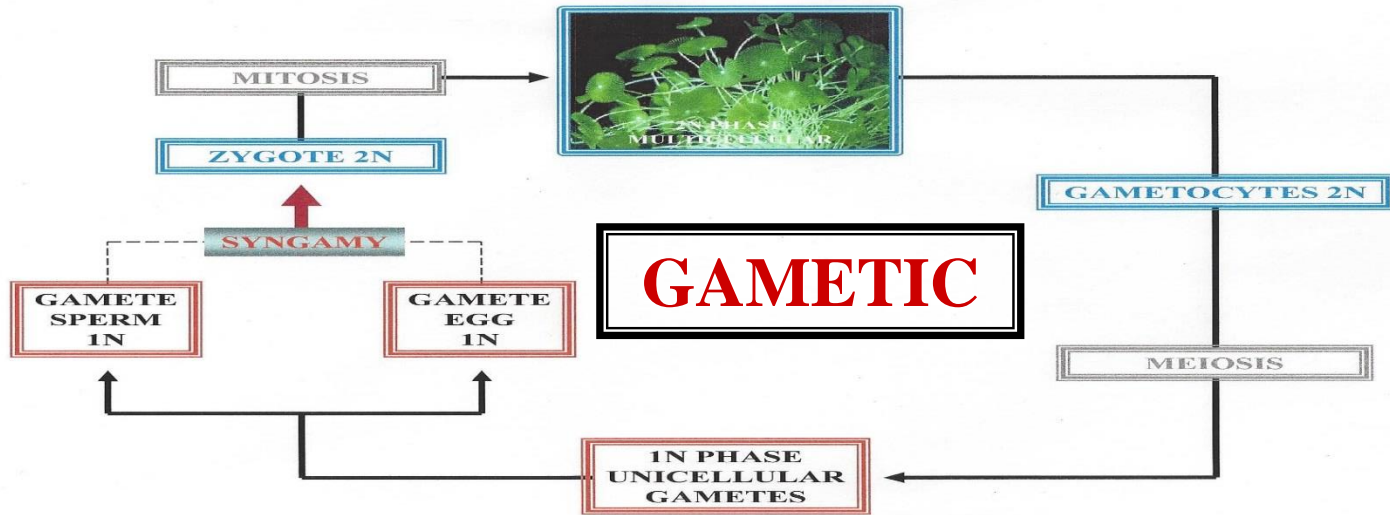


**QUESTION**

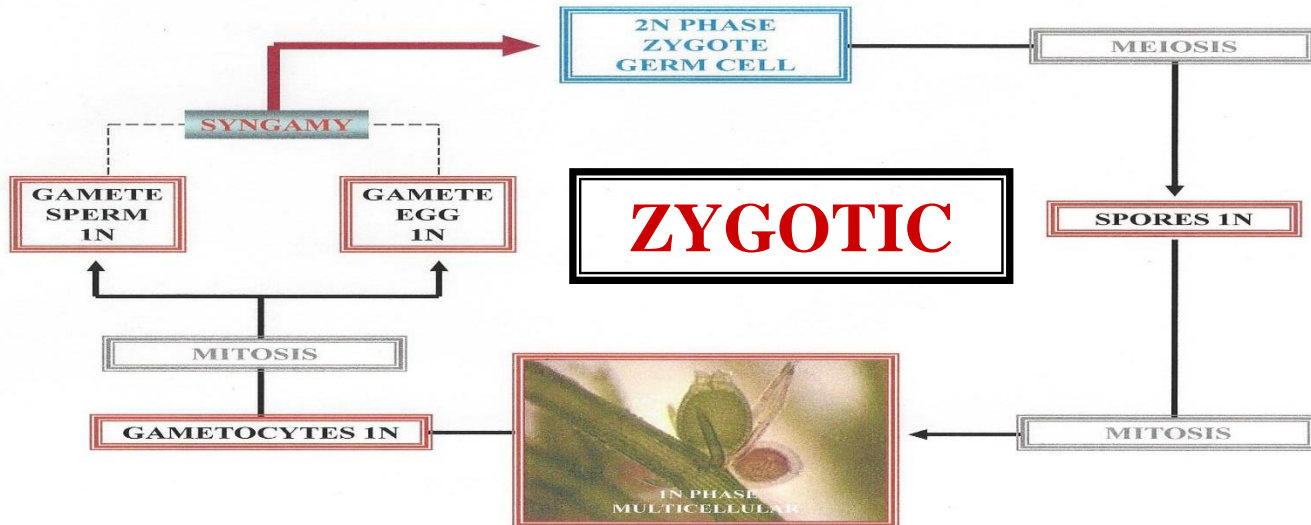
**WHICH LIFE CYCLE  
IS THE  
MULTICELLULAR  
PHASE DIPLOID?**

**QUESTION**

# ACETABULARIA GAMETIC LIFE CYCLE

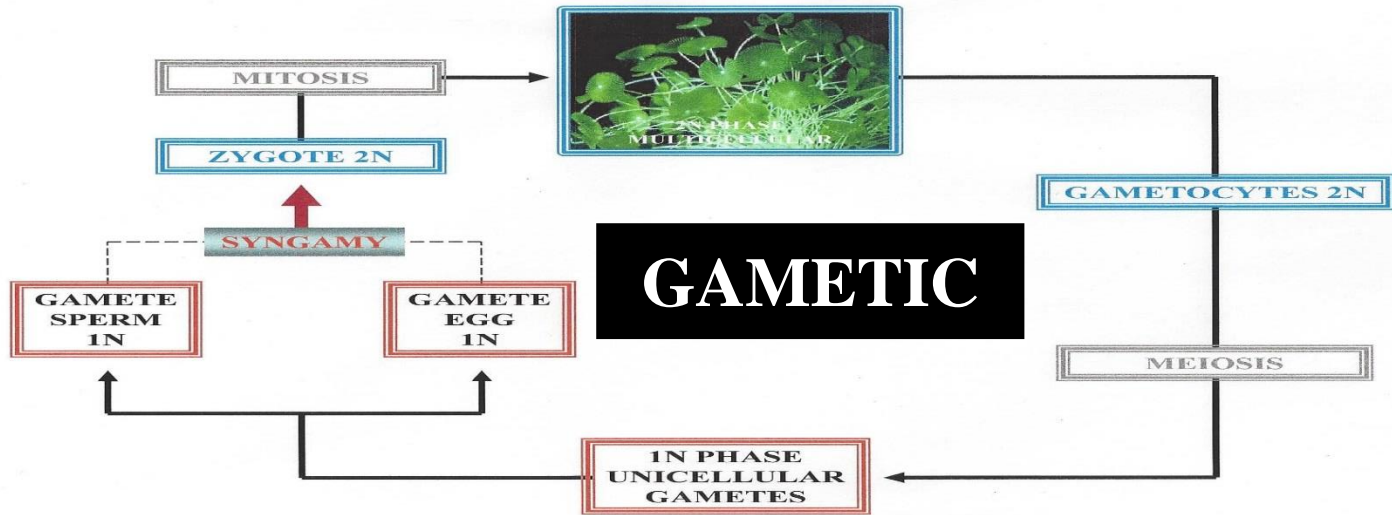


# CHARA ZYGOTIC LIFE CYCLE

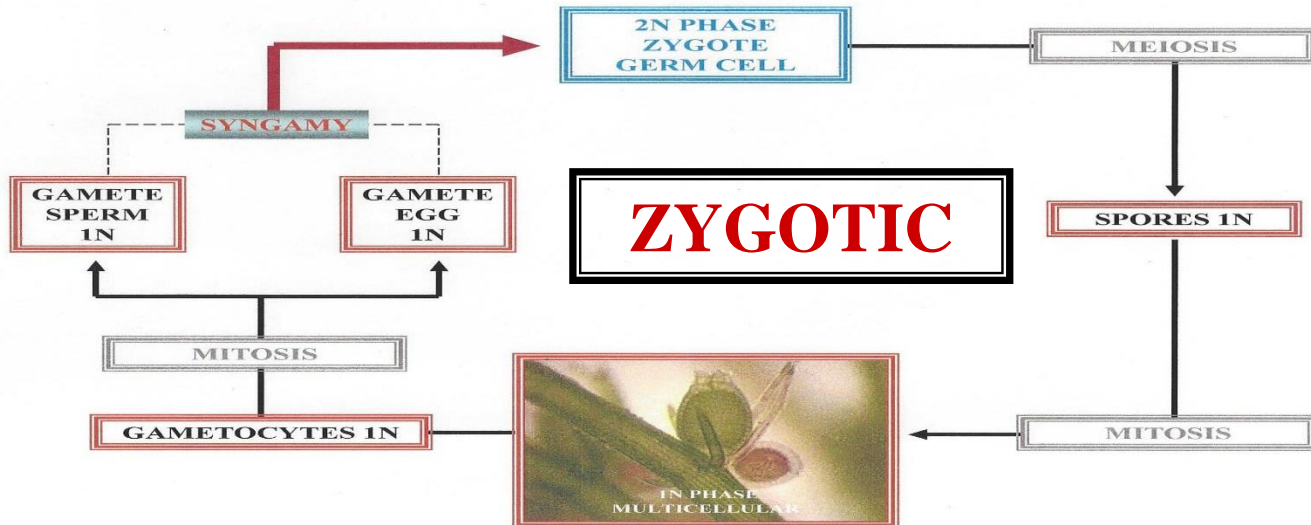




# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE



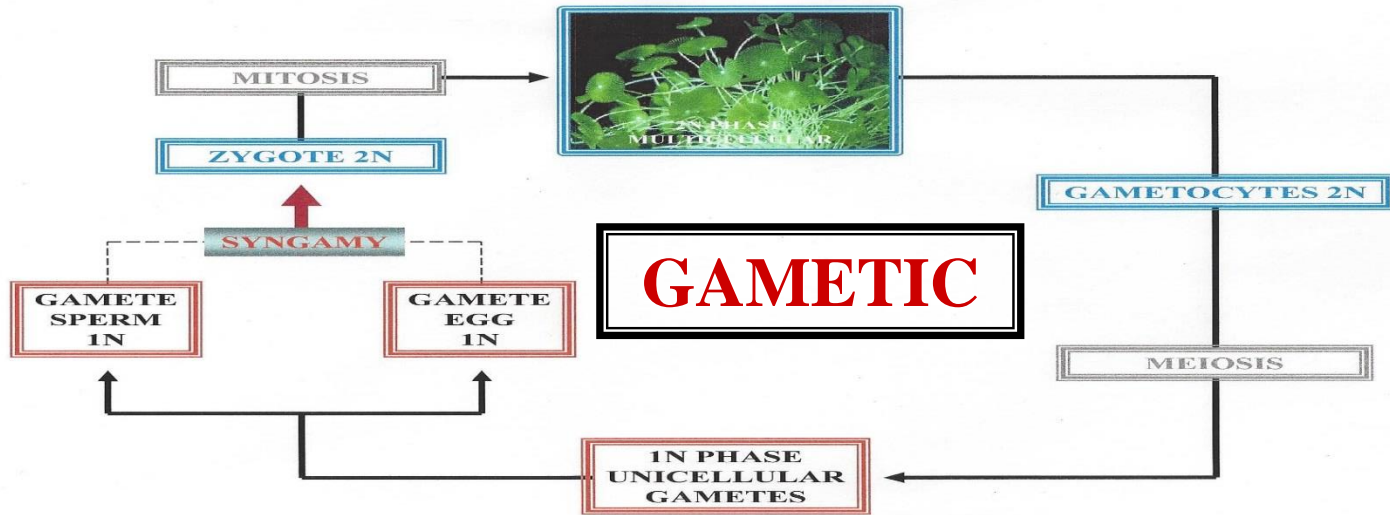


**QUESTION**

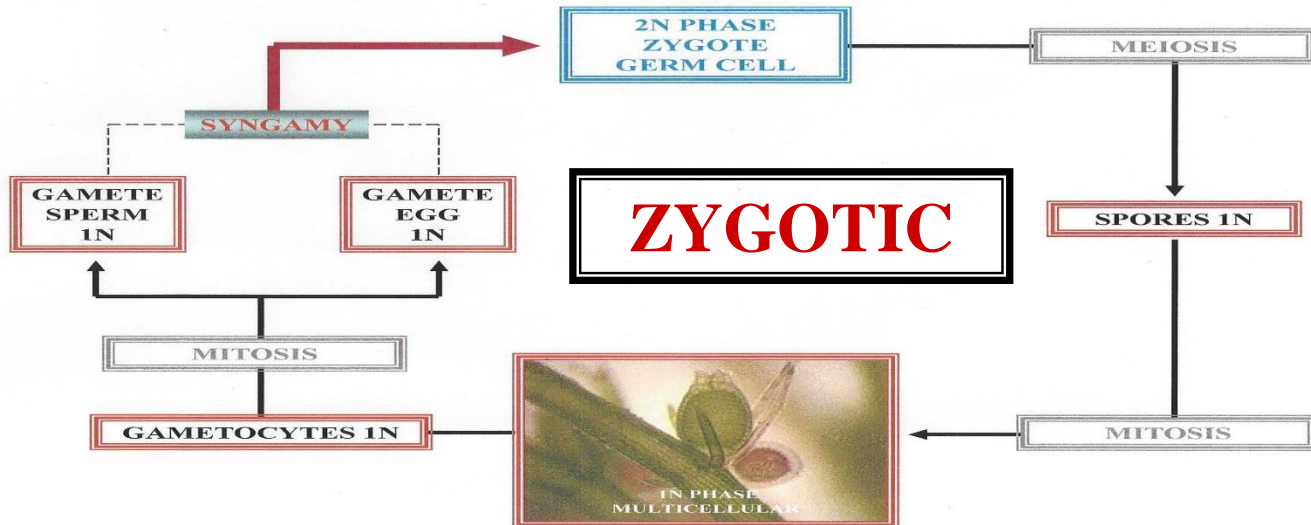
**WHICH LIFE CYCLE  
IS THE  
MULTICELLULAR  
PHASE HAPLOID?**

**QUESTION**

# ACETABULARIA GAMETIC LIFE CYCLE



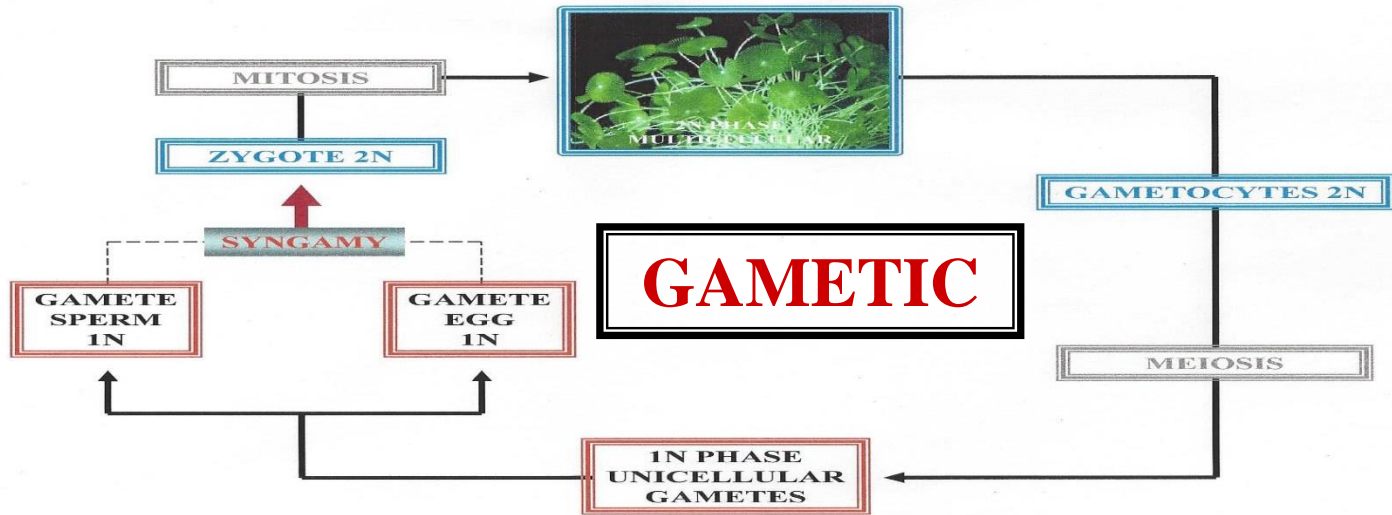
# CHARA ZYGOTIC LIFE CYCLE



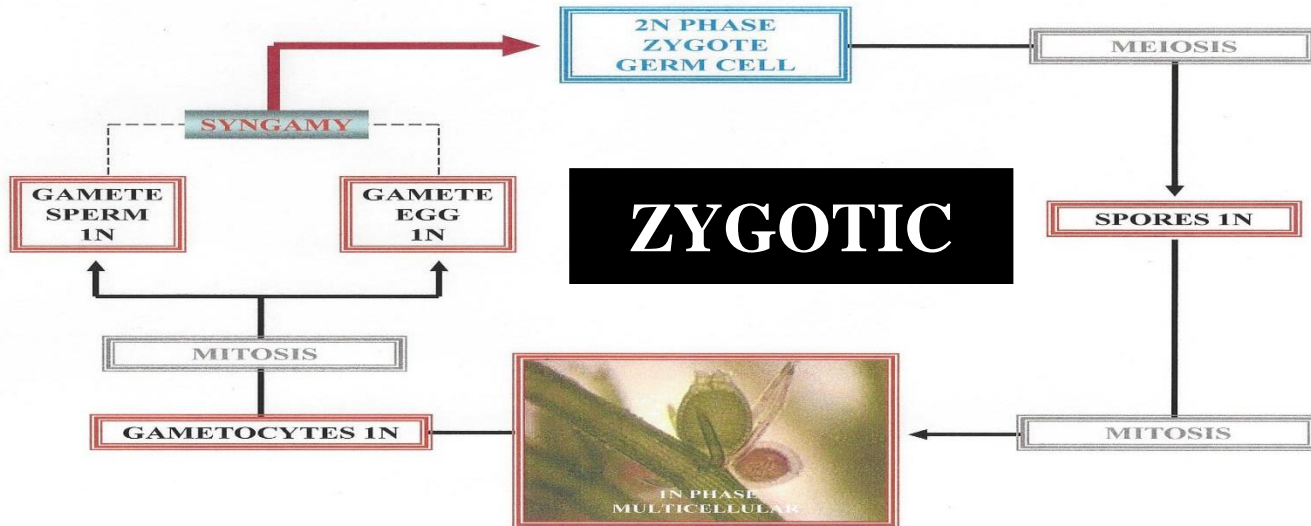




# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE



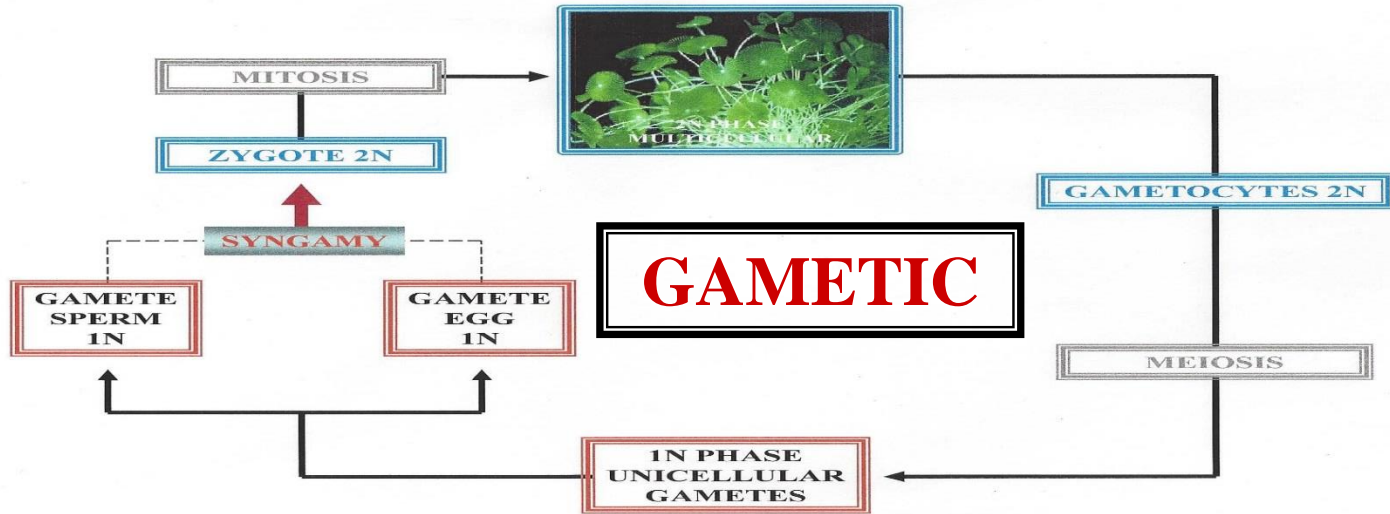


# QUESTION

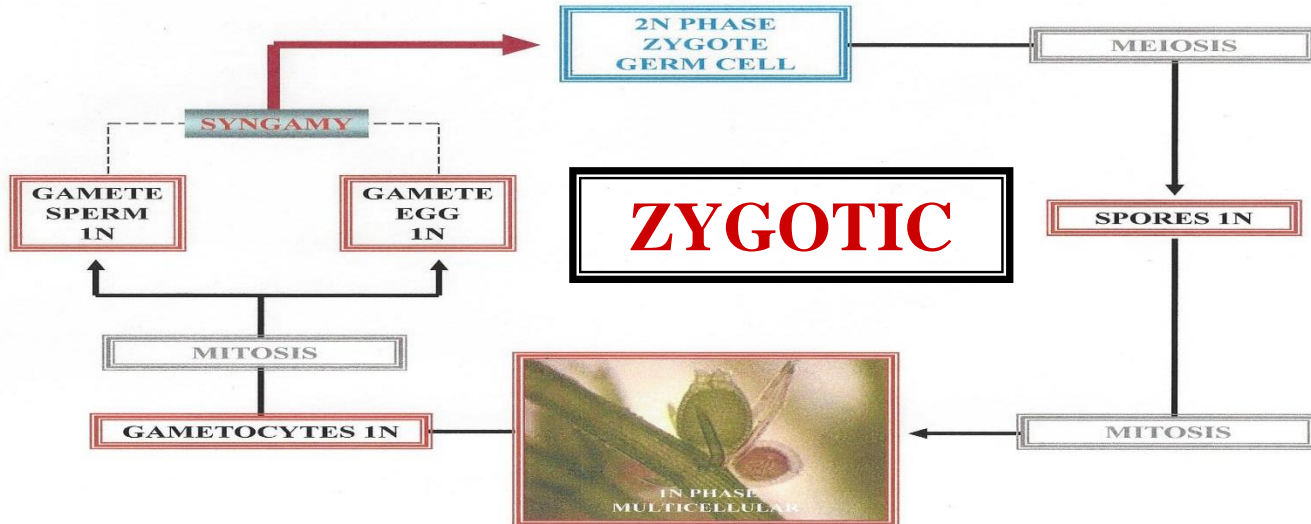
WHICH LIFE CYCLE  
ARE THE GAMETES  
DERIVED BY  
MEIOSIS?

# QUESTION

# ACETABULARIA GAMETIC LIFE CYCLE

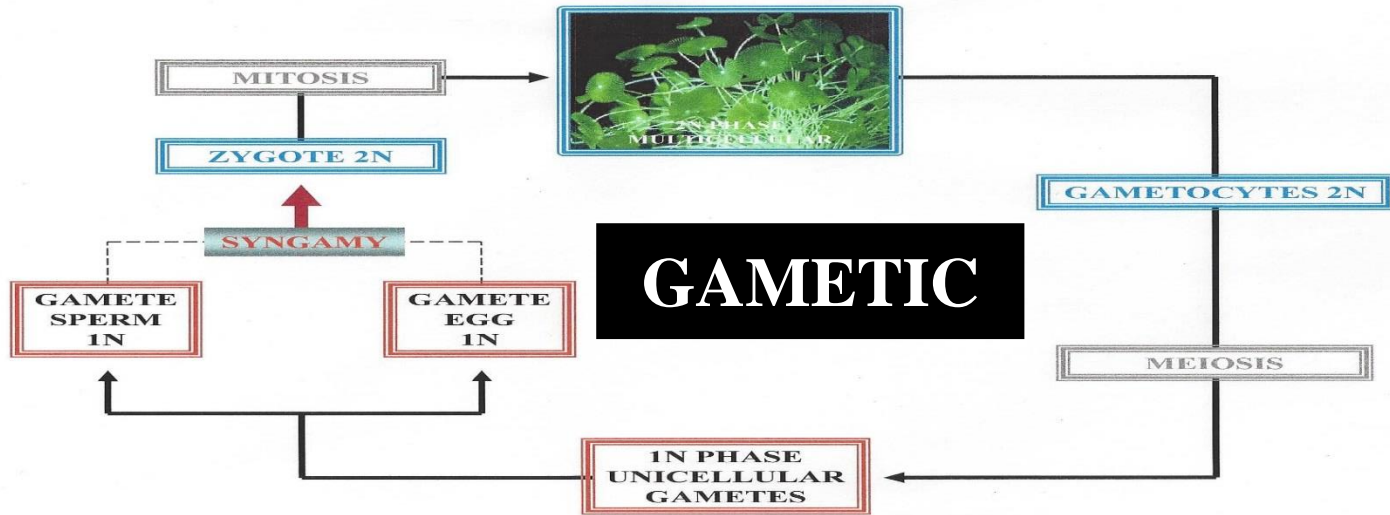


# CHARA ZYGOTIC LIFE CYCLE

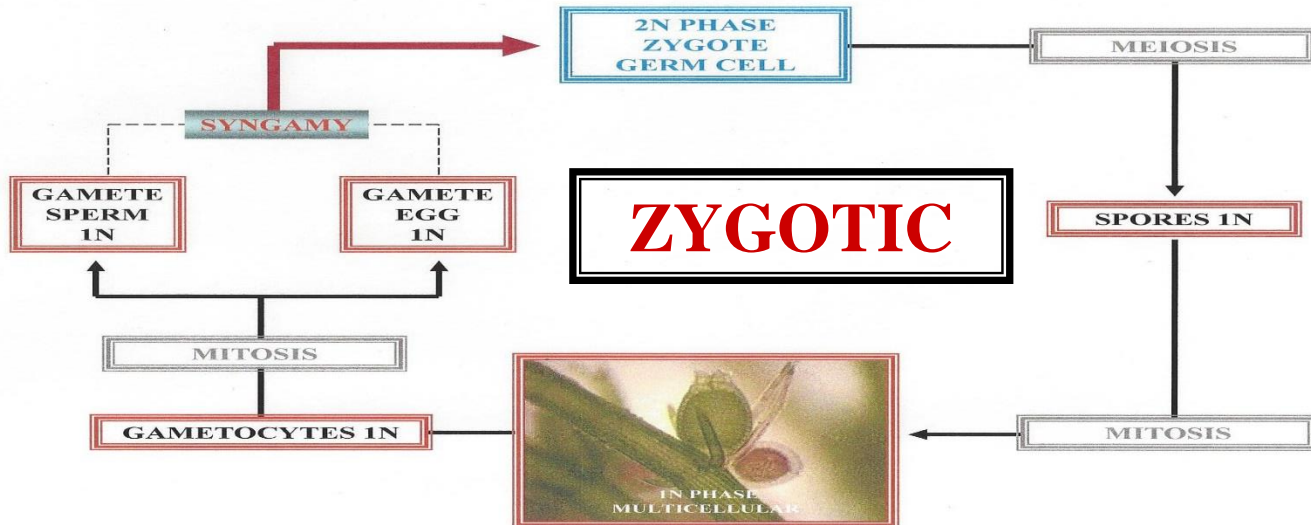




# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE





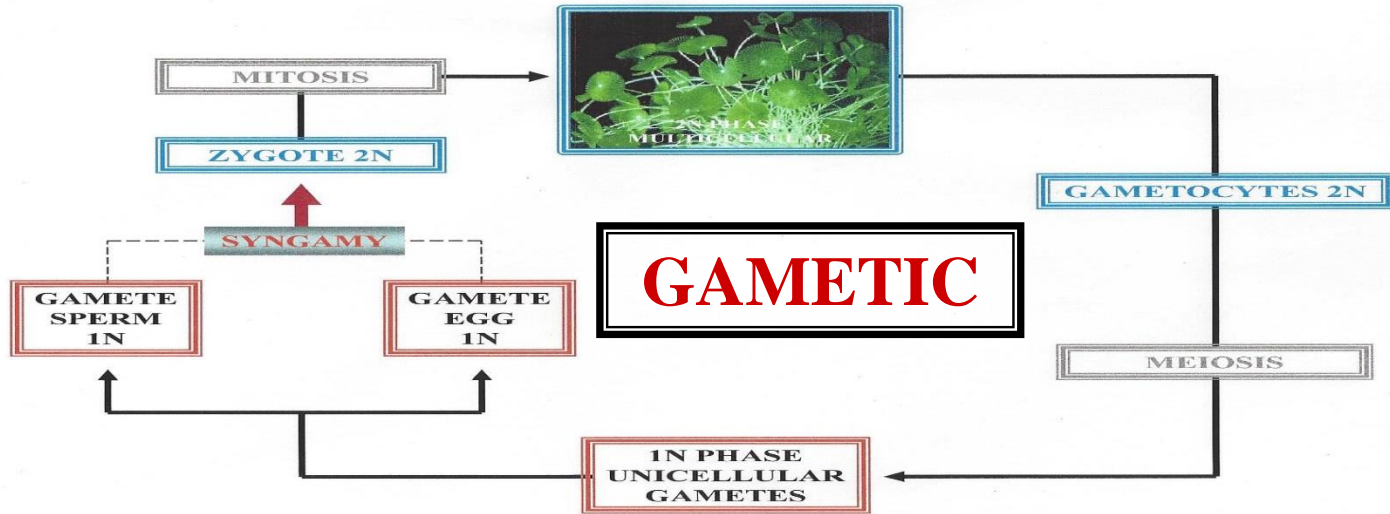
# QUESTION

WHICH LIFE CYCLE  
ARE THE GAMETES  
DERIVED BY  
MITOSIS?

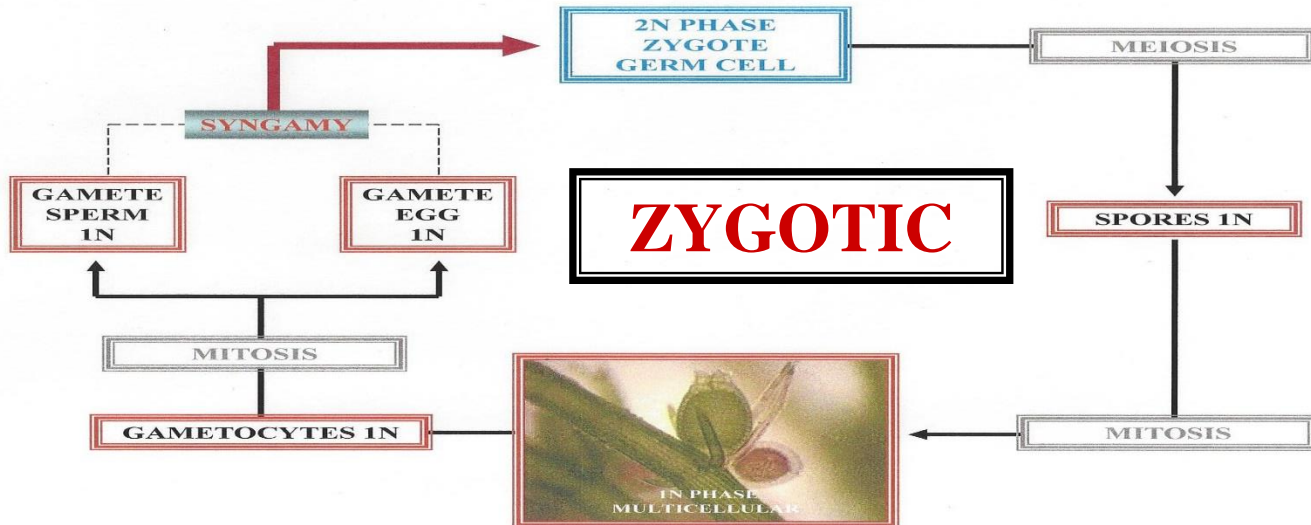
# QUESTION



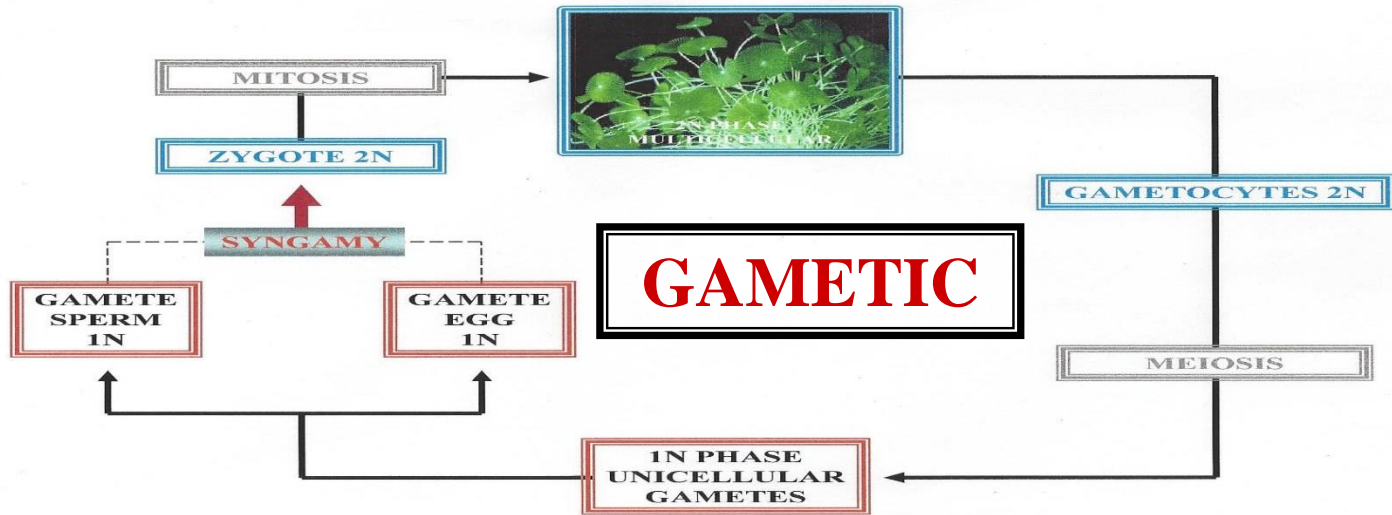
# ACETABULARIA GAMETIC LIFE CYCLE



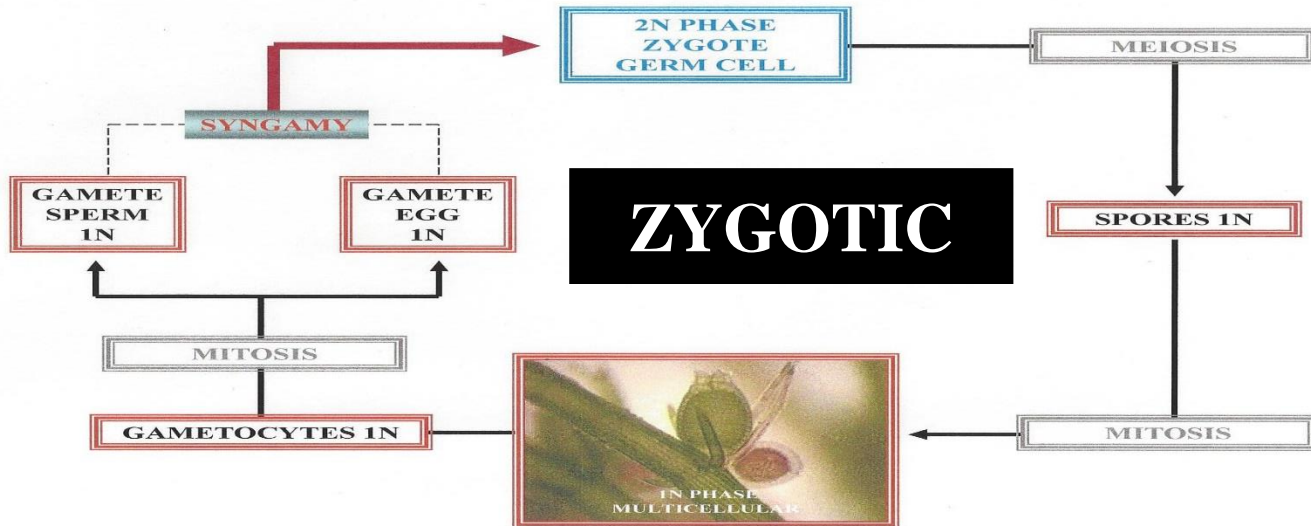
# CHARA ZYGOTIC LIFE CYCLE



# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE





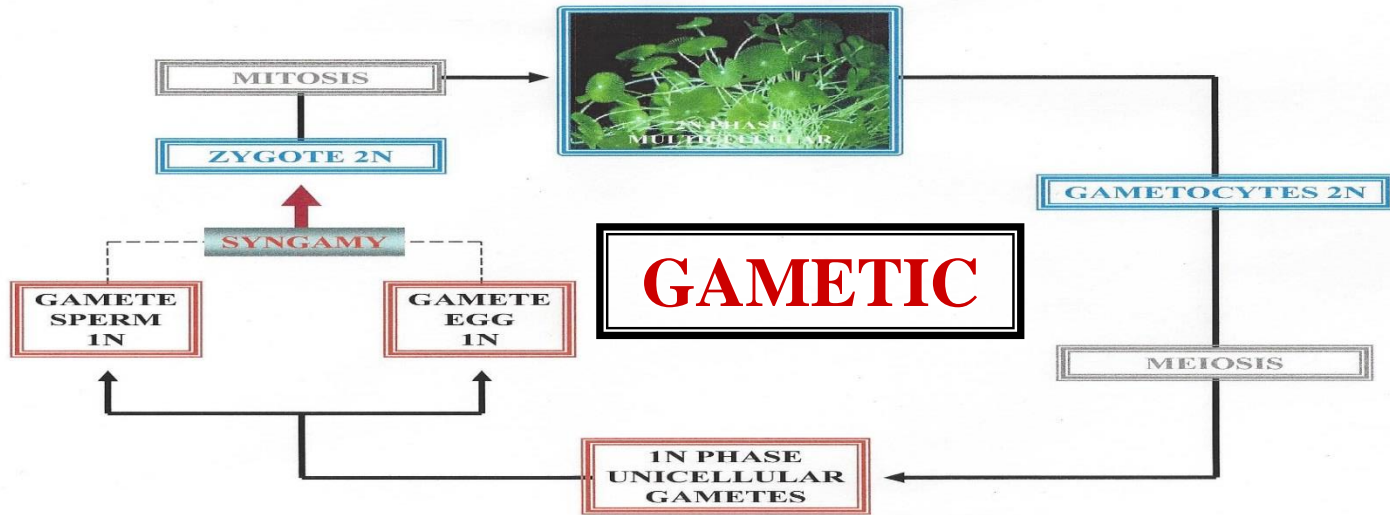


# QUESTION

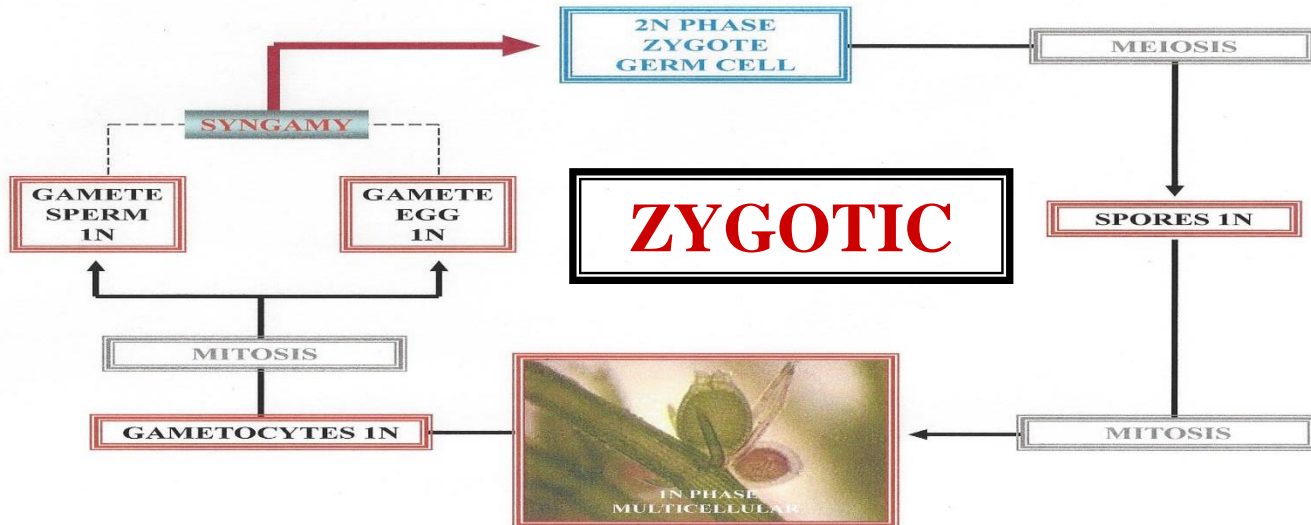
WHICH LIFE CYCLE  
ARE THE GAMETES  
THE ONLY  
HAPLOID CELLS?

# QUESTION

# ACETABULARIA GAMETIC LIFE CYCLE

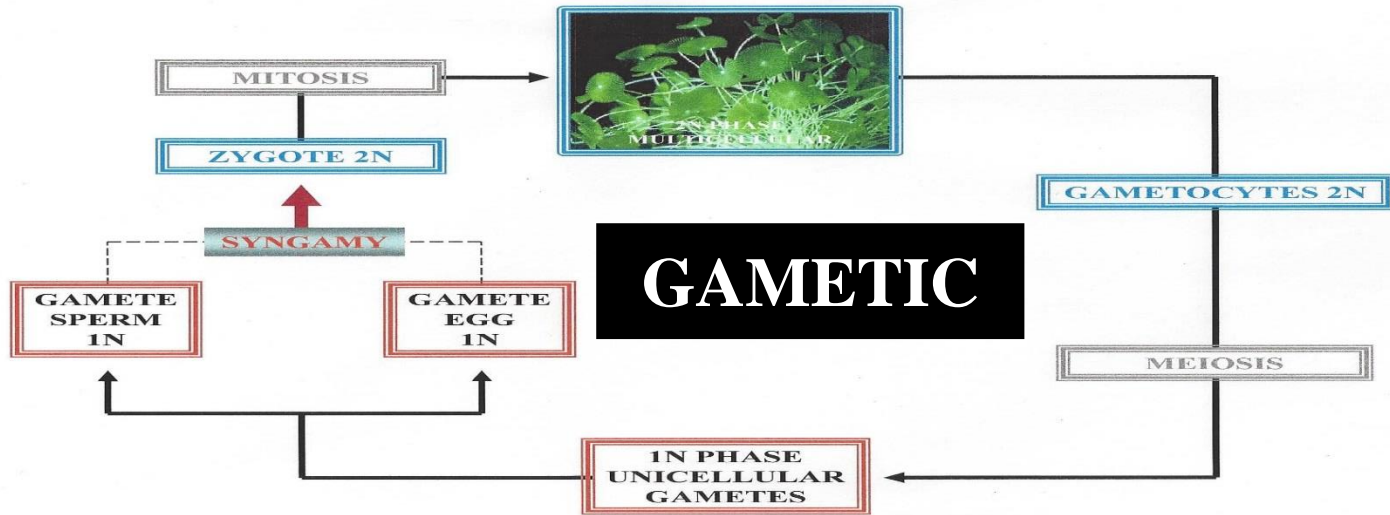


# CHARA ZYGOTIC LIFE CYCLE

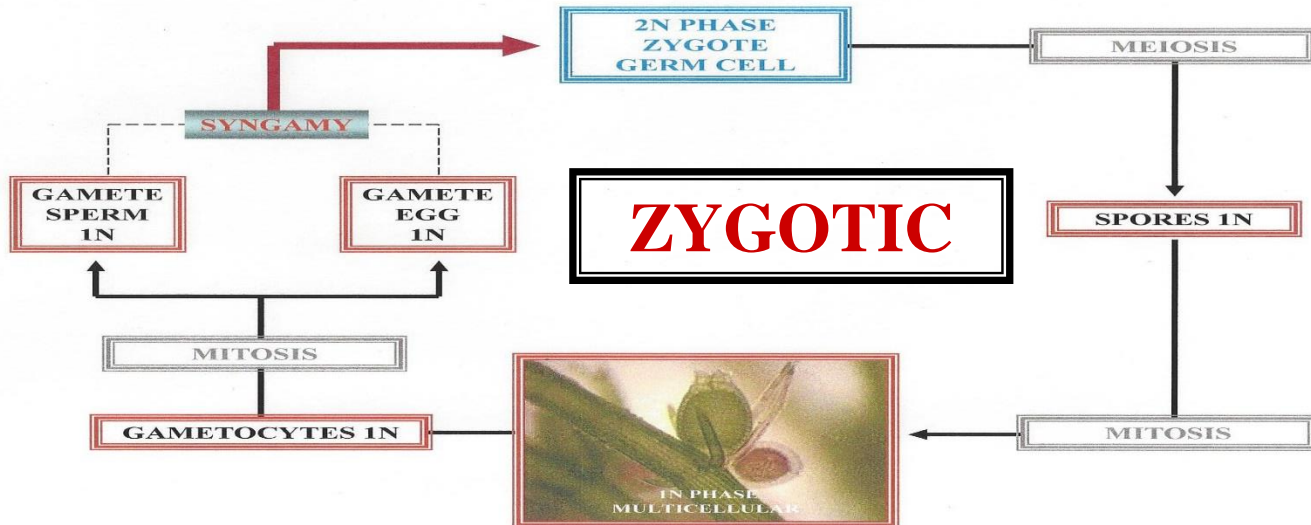




# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE



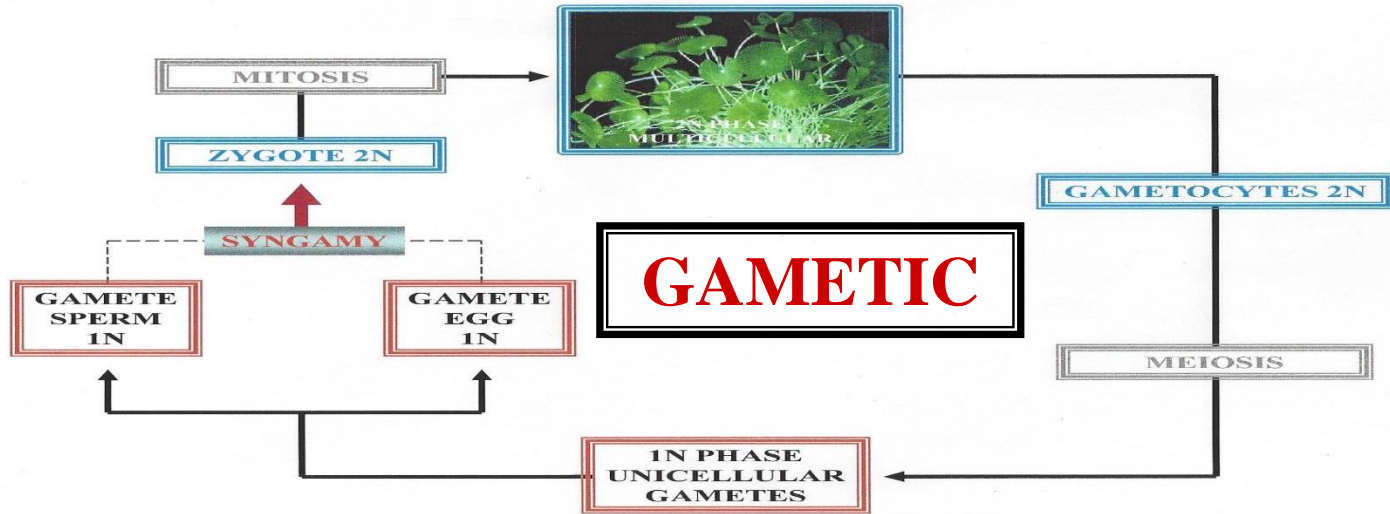


# QUESTION

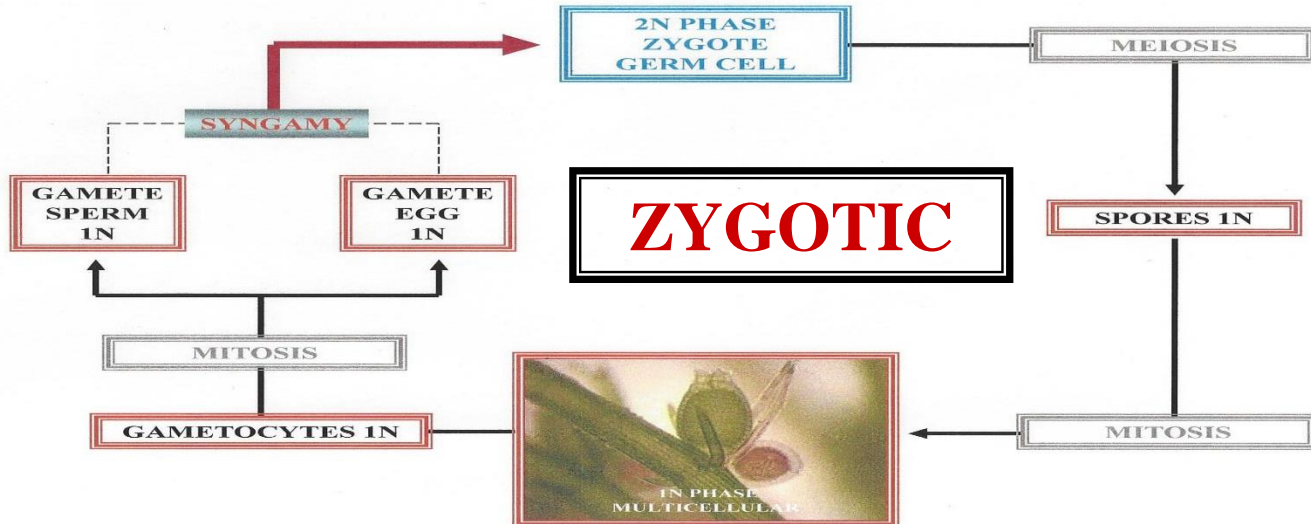
WHICH LIFE CYCLE  
IS THE ZYGOTE  
THE ONLY  
DIPLOID CELL?

# QUESTION

# ACETABULARIA GAMETIC LIFE CYCLE

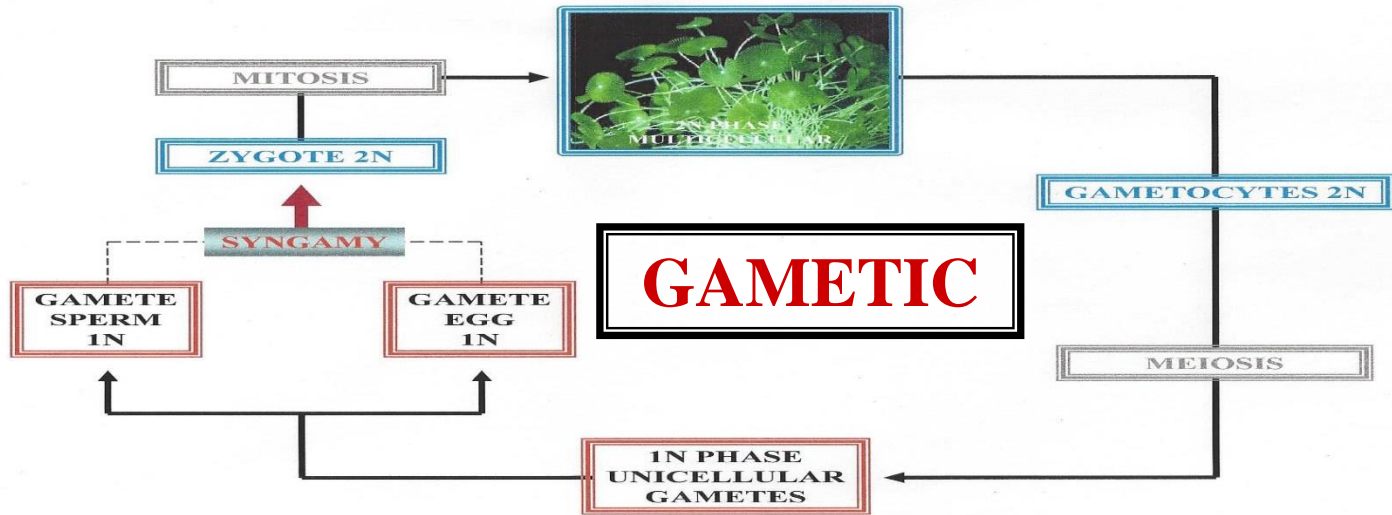


# CHARA ZYGOTIC LIFE CYCLE

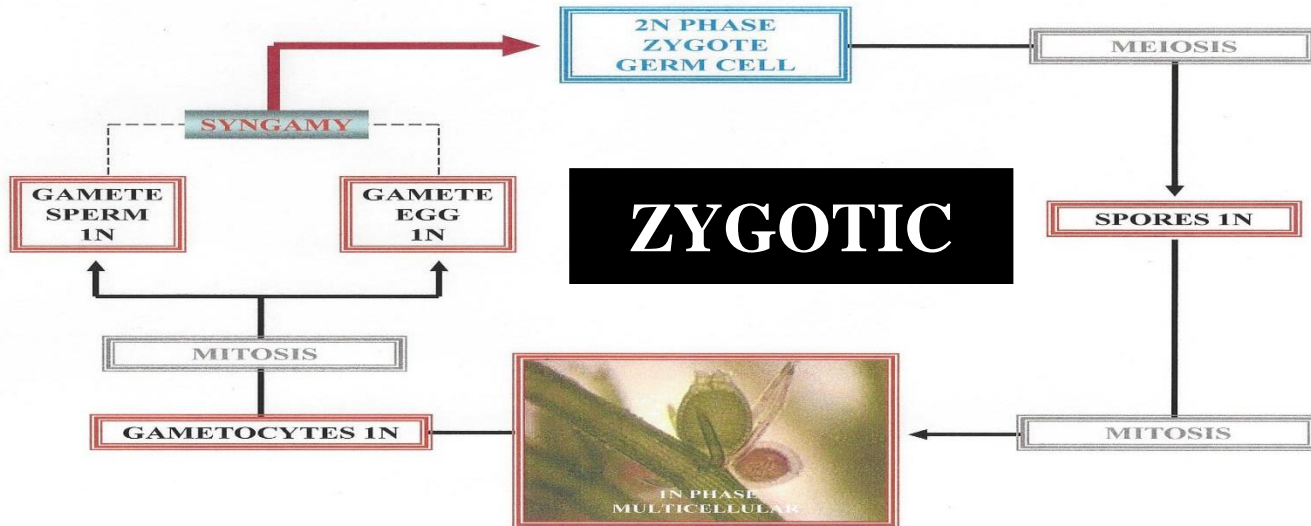




# ACETABULARIA GAMETIC LIFE CYCLE



# CHARA ZYGOTIC LIFE CYCLE





# QUESTION

GAMETIC LIFE CYCLE  
AND

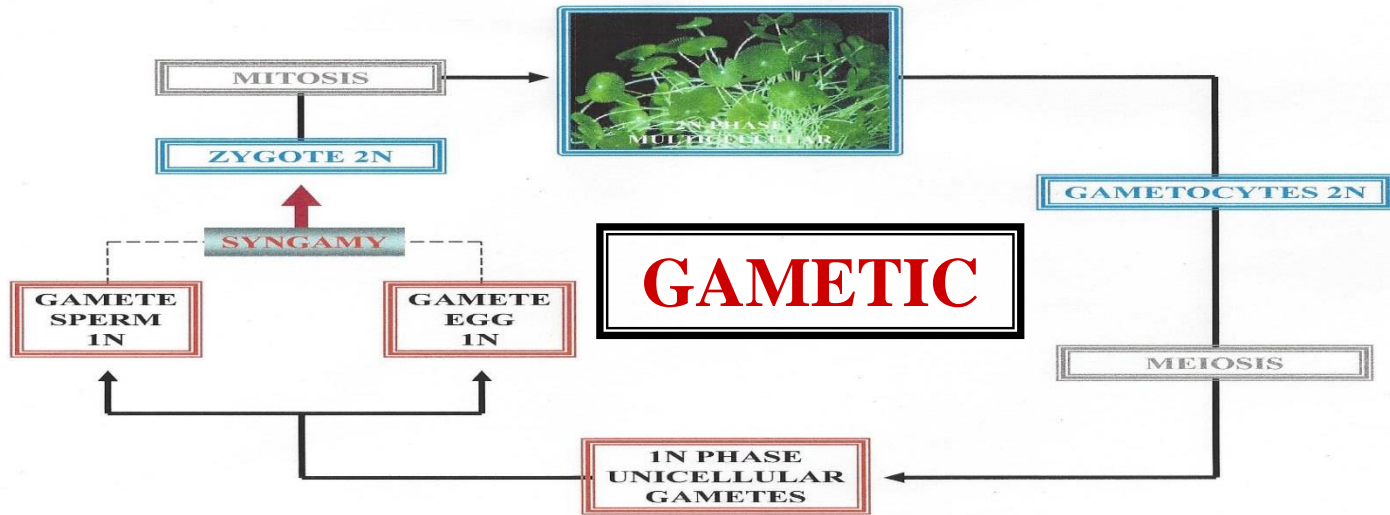
ZYGOTIC LIFE CYCLE  
ARE WHAT WITH RESPECT  
TO ONE ANOTHER?

# QUESTION

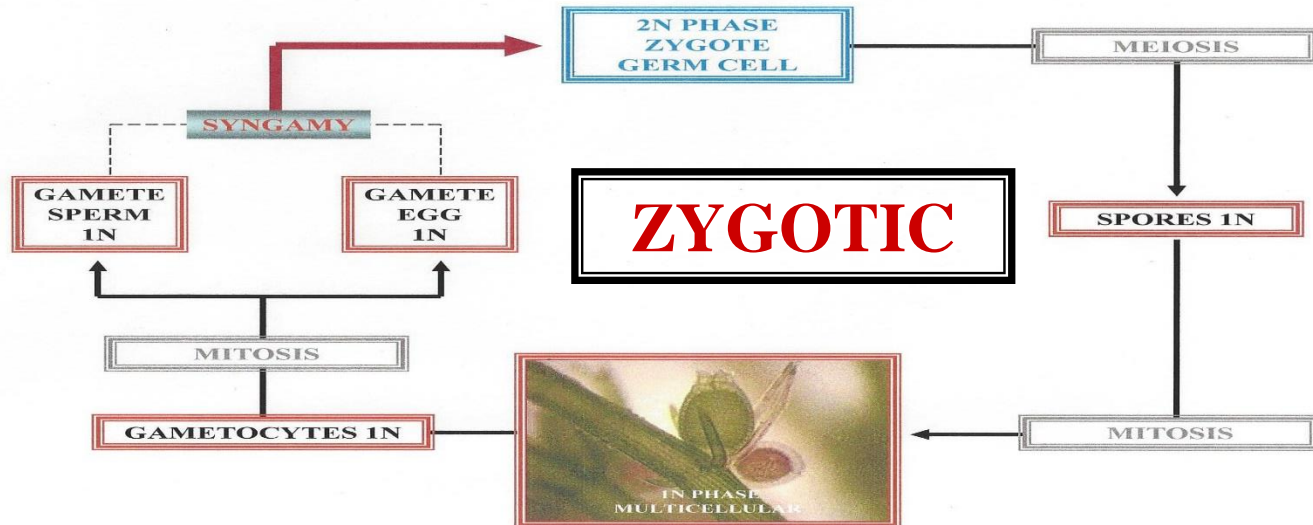




# ACETABULARIA GAMETIC LIFE CYCLE

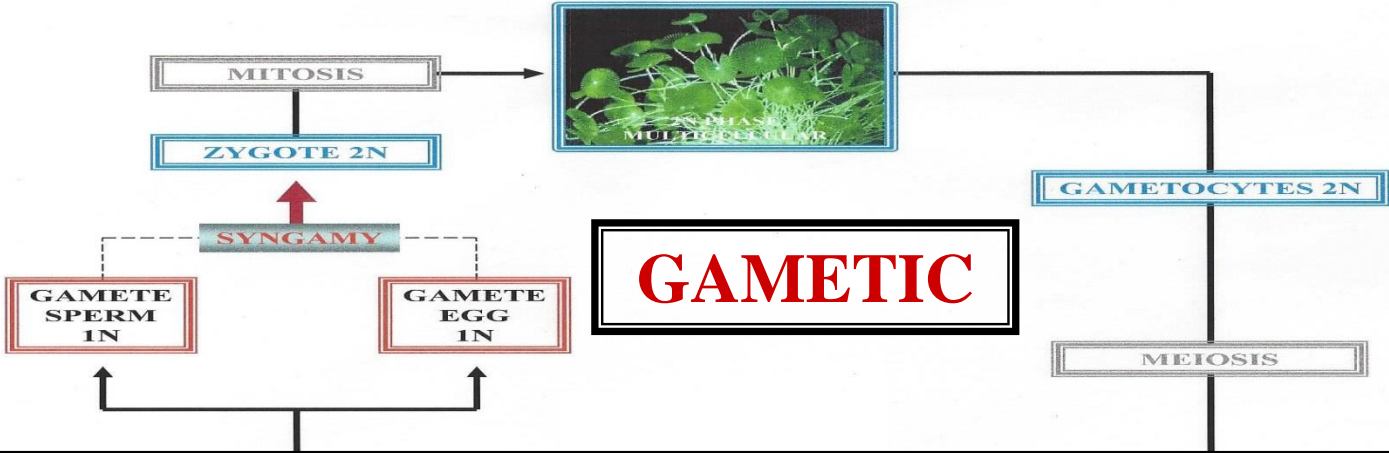


# CHARA ZYGOTIC LIFE CYCLE





# ACETABULARIA GAMETIC LIFE CYCLE



# INVERSE LIFE CYCLES

