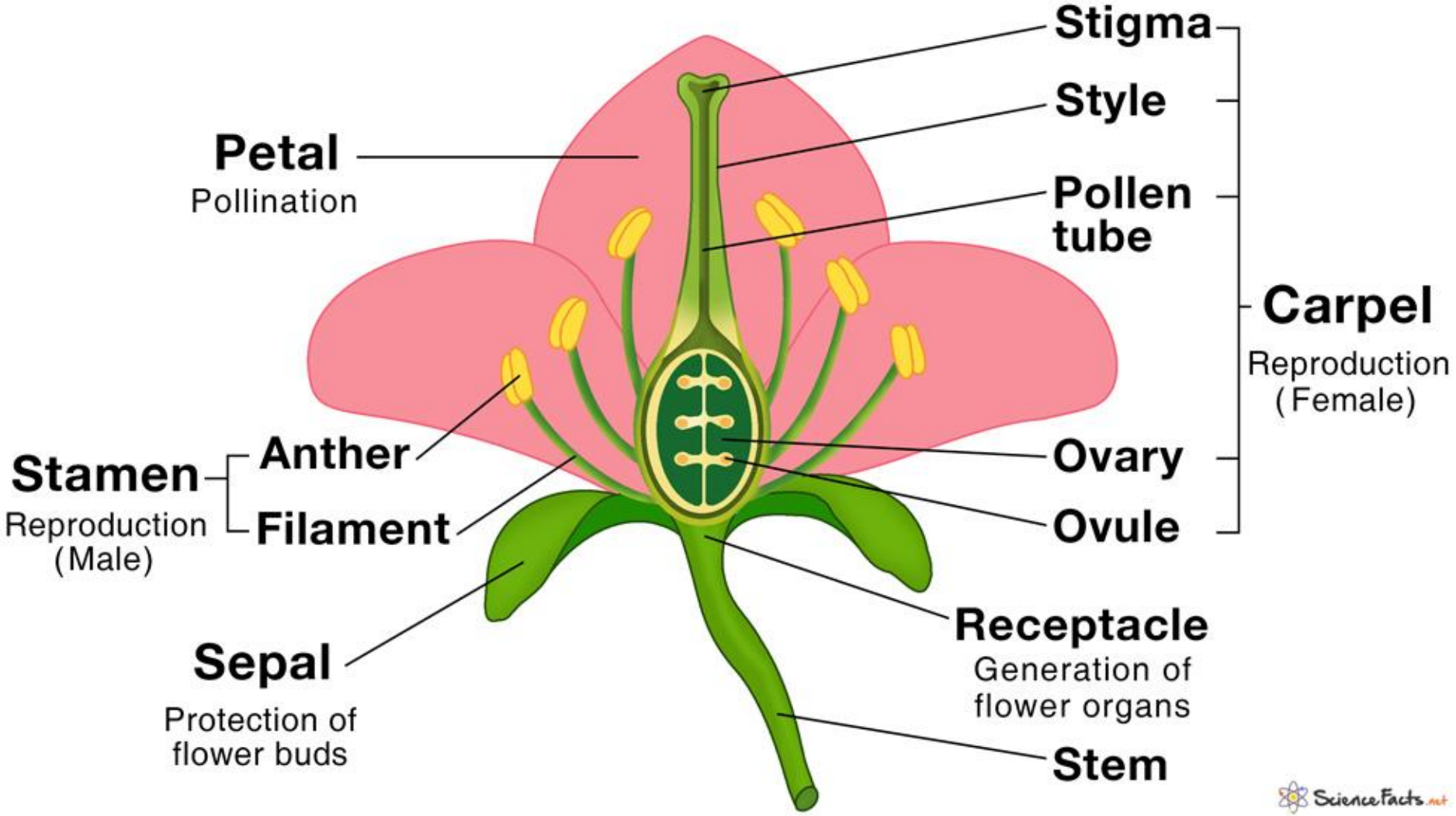
Thematic block: The generative organs of the herbaceous plants.

Lesson 4.1. Morphology of the flower and inflorescence.

The flower is a modified shortened shoot adapted to produce spores for asexual reproduction us well us gametes for the sexual process that results in seeds and fruit.

Parts of a Flower



$\overline{(5)}$

A floral formula consists of five symbols indicating from left to right:

Floral Symmetry: * - Actinomorphic; ↑- zygomorphic; ϟ – Asymmetry flower

Number of Tepal – P
Number of Sepals - Ca
Number of Petals - Co
Number of Stamens – A
Number of Carpels – G

↑$Ca_{(5)}Co_{(2+1+2)}A_{10}\underline{G_1}$

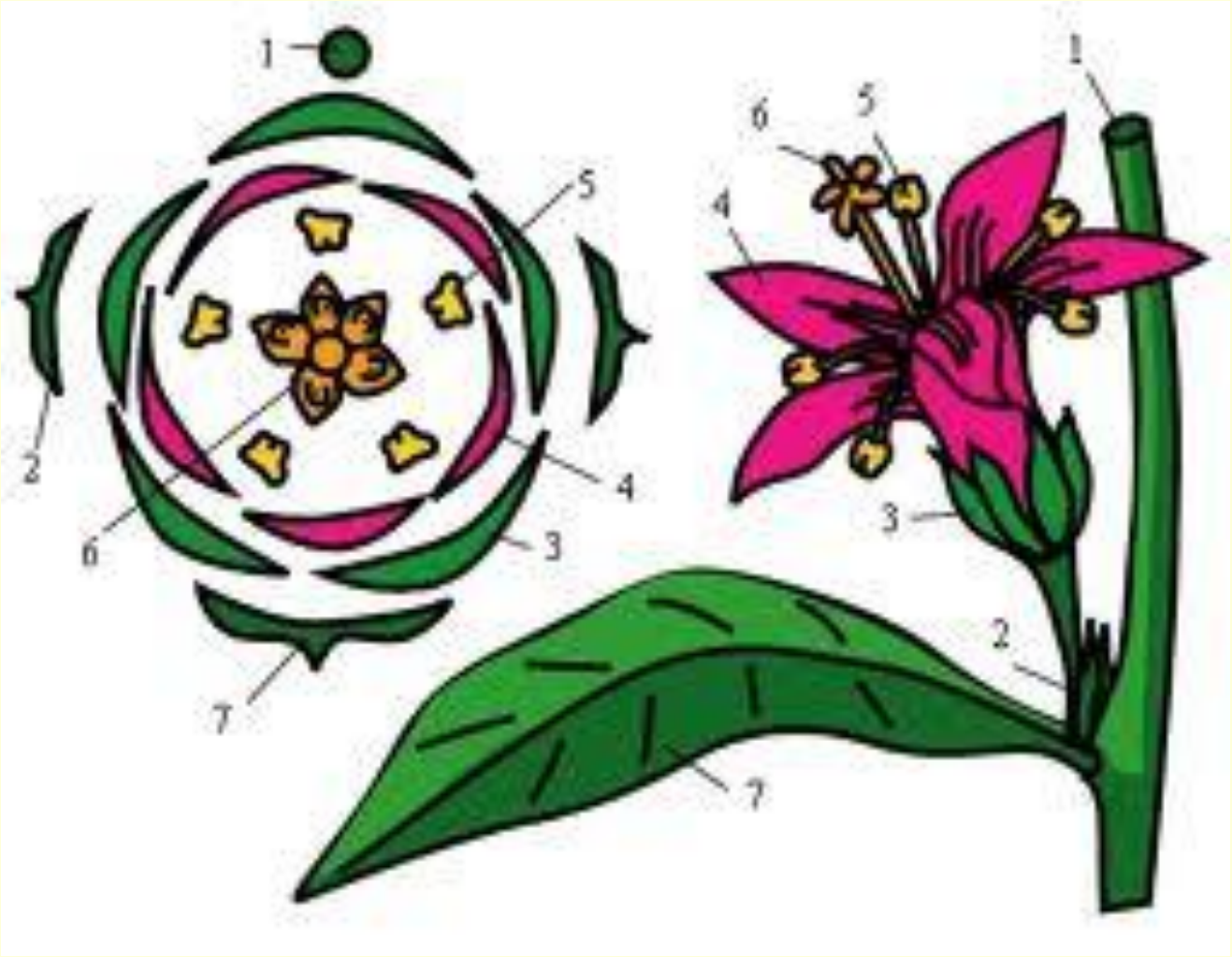
$*Ca_{(5)}Co_5A_\infty G_{(3)}$ –

$*Ca_{(5)}Co_5A_\infty \underline{G_\infty}$

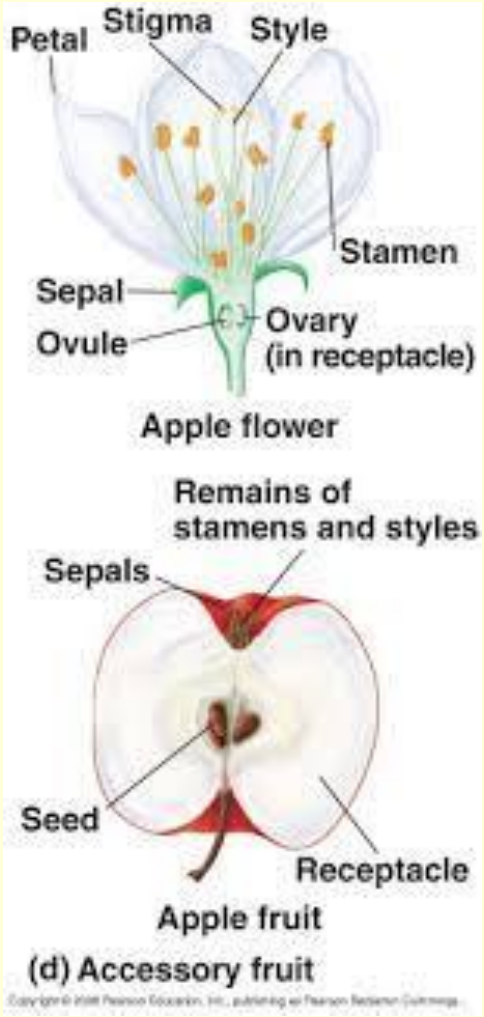
The number of members of each part of the flower is indicated by numbers in the subscript. The parts of the flower are described according to their arrangement from the outside to the inside of the flower. If an organ type is arranged in more whorls, the outermost is denoted first, and the whorls are separated by "+". If the organ number is large or fluctuating, is denoted as "∞". In the case of fusion of parts of the flower, the fused parts are taken in parentheses.

When describing the gynoecium, the formula should reflect the number of carpels that formed it, as well as the position of the ovary. The position of the ova-ry is indicated by a line above the numerical index of the gynoecium if it is lower, under the numerical index - if it is upper.

It sometimes becomes very lucid if the ground plan of a flower be represented in the form of a floral diagram, in a floral diagram the position of the inflorescence axis or stem is shown by a dot or a small circle while the sepals, petals and stamens are put in concentric circles (or spirals when the floral phyllotaxy is spiral), the gynoecium being put at the centre.

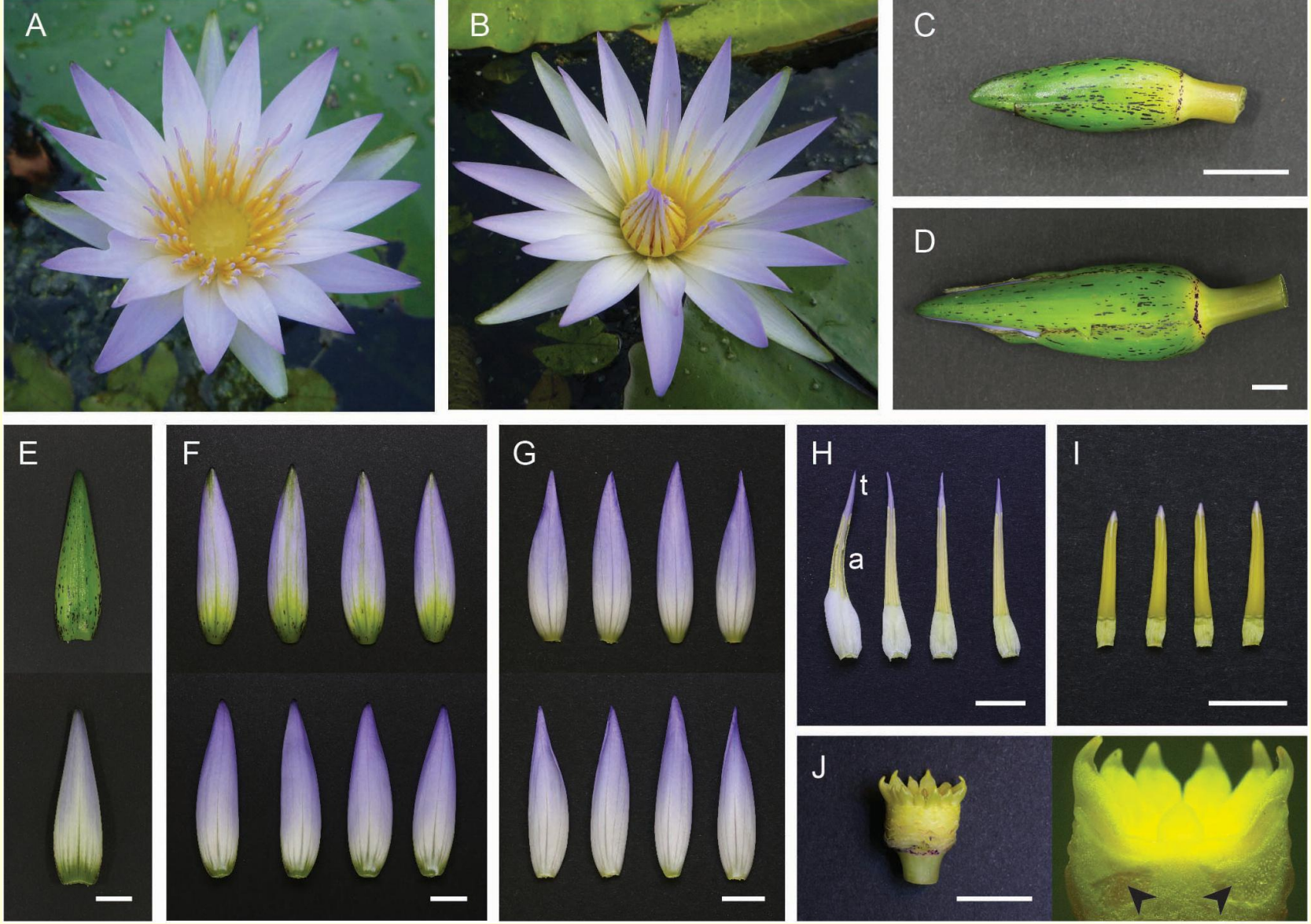


Task 1. Flower morphology.



Malus domestica

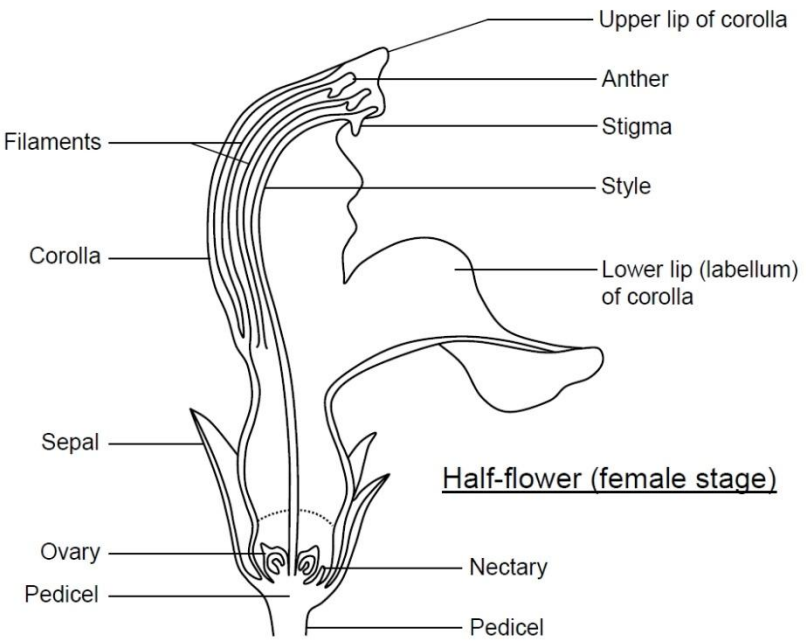
Geranium pratense



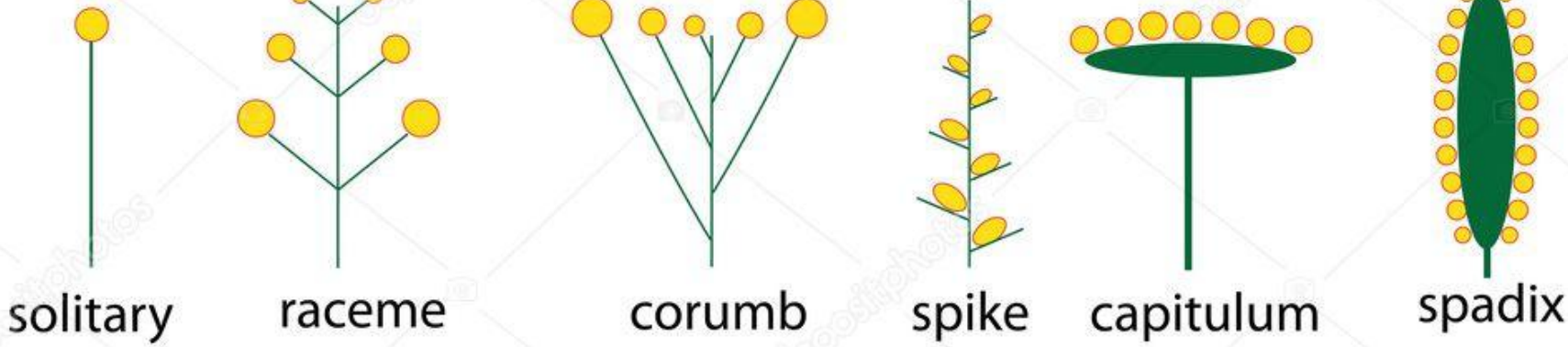
Nymphaea caerulea

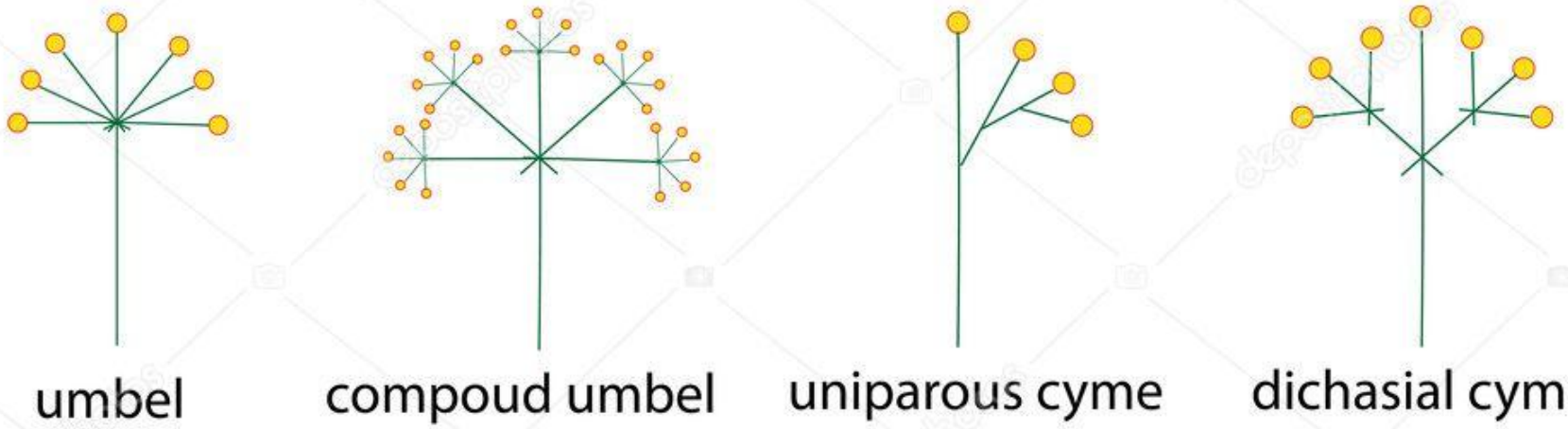
Lilium hybridum

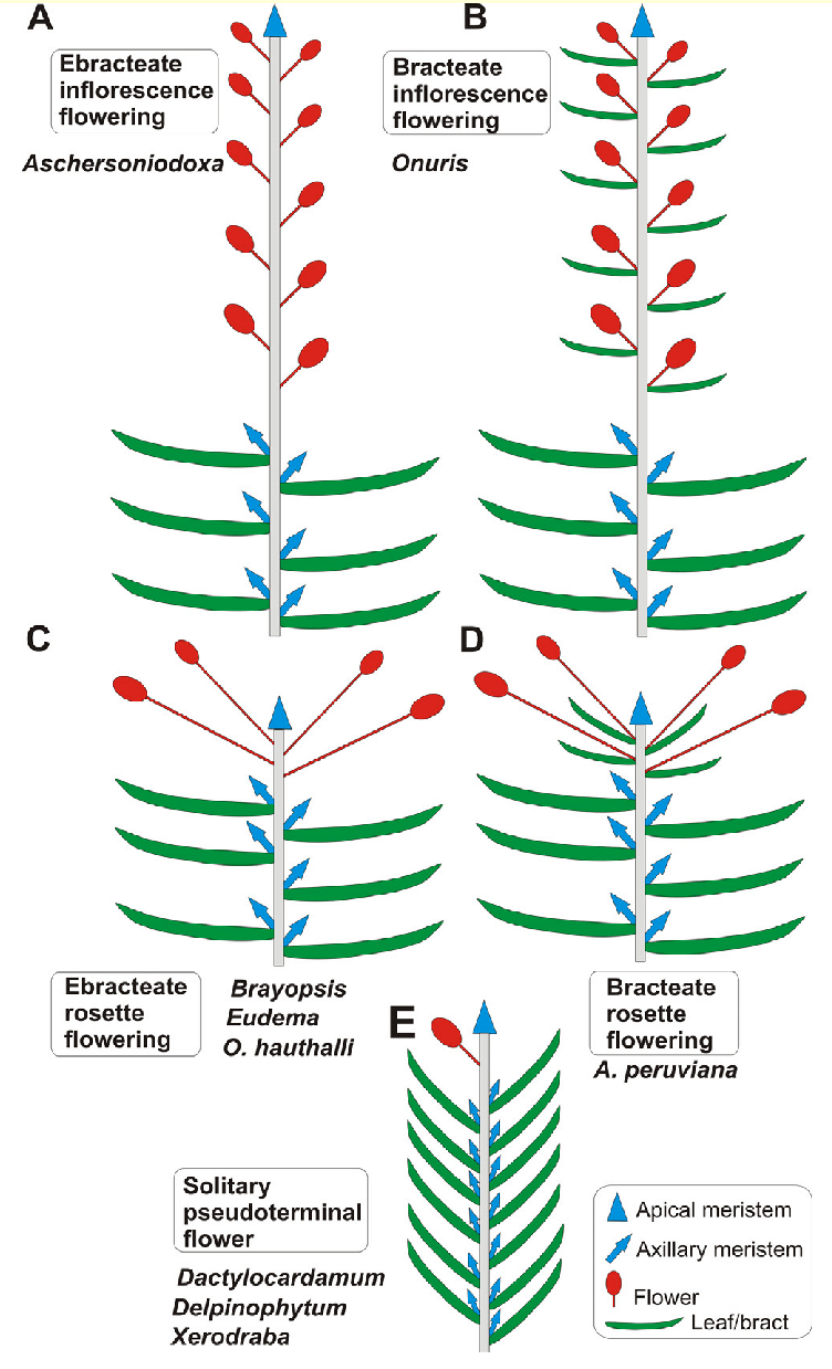
White Deadnettle (*Lamium album*)



Types of inflorescence



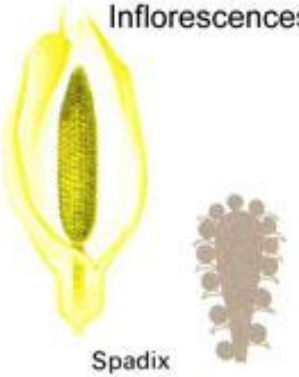




Leafy inflorescences

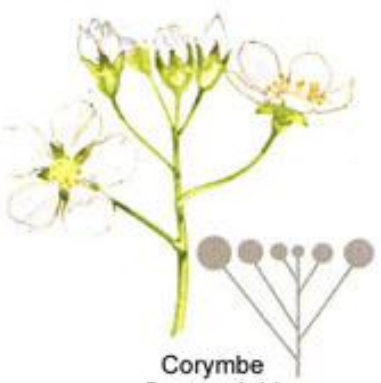
Inflorescences racémeuses

Epi
Plantago sp



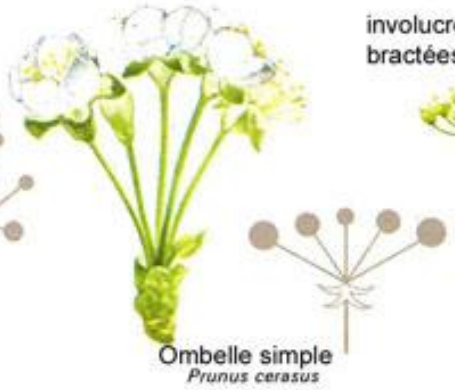
Spadix
Arum sp

Raceme
Convallaria majalis

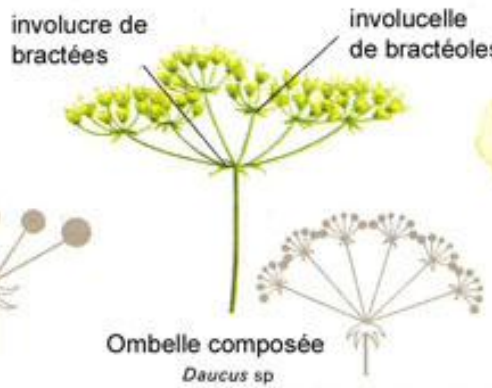


Corymbe
Prunus mahaleb

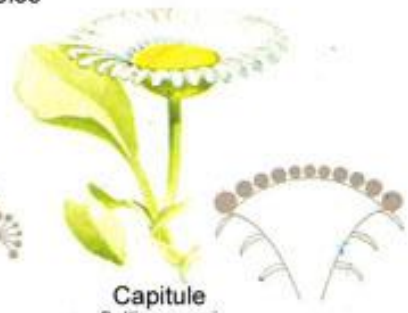
Panicule
Hordeum vulgare



Ombelle simple
Prunus cerasus



Ombelle composée
Daucus sp



Capitule
Bellis perennis

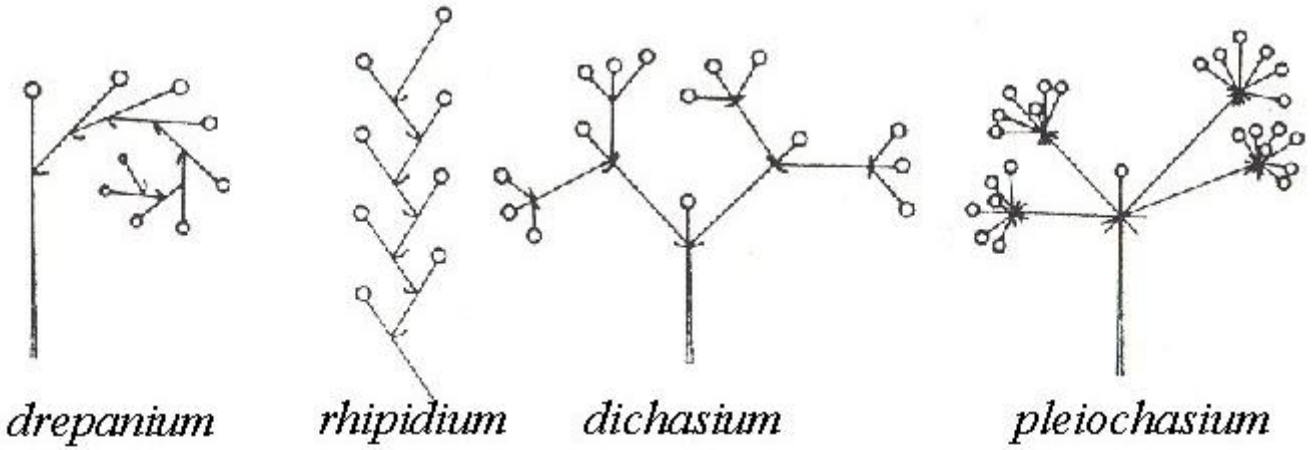
Inflorescences mixtes

Châton
Corylus avellana

Thyrse
Aesculus hippocastanum

Verticillaster
Mentha sp

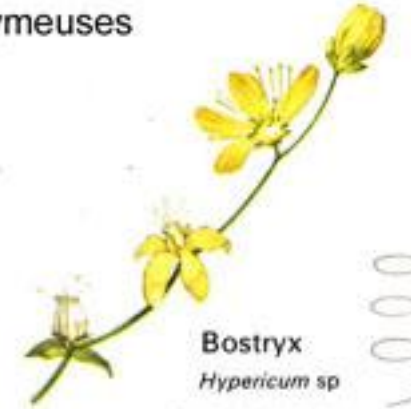
INFLORESCENTIAE CYMOSAE –



drepanium *rhipidium* *dichasium* *pleiochasium*

Inflorescences cymeuses

Simple
Iris sp



Bostryx
Hypericum sp

MONOCHASIA

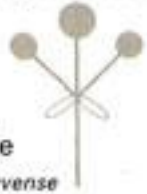
Drepanium
Juncus bufonius

Cincinnus
Strelitzia reginae

Rhipidium
Iris sp

DICHASIA

pédicelle
bractée
pédoncule



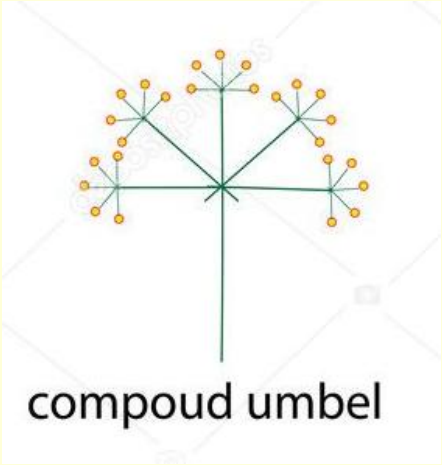
Simple
Cerastium arvense

Composé
Stellaria holostea

Task 2: Identify the types of inflorescences.

Identify the types of all the inflorescences from the given set, using the tables, pictures and the textbook. Schematically sketch the types of certain inflorescences and indicate the names of the plants in which they occur (from the herbarium). Find more examples of plants that you know in which these types of inflorescences occur.

Make out the drawings as follows: a schematic drawing of the inflorescence, its name, a list of plants that have this inflorescence:

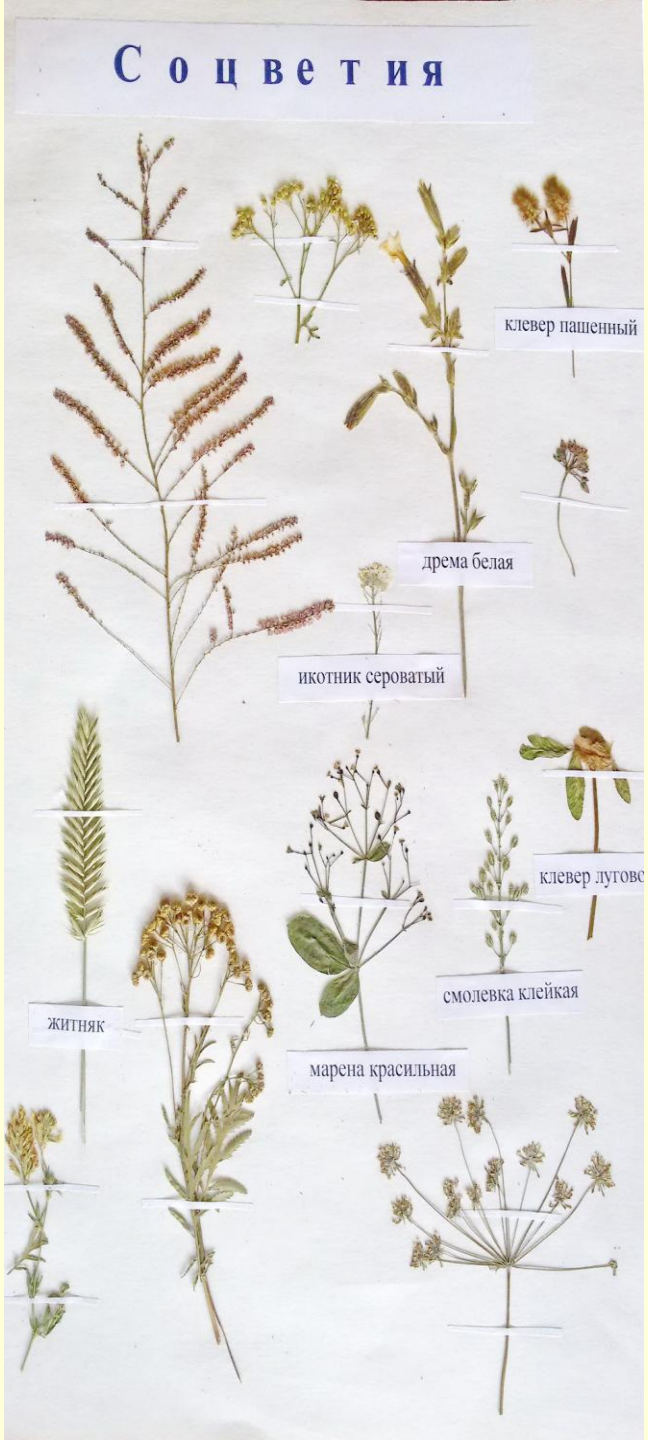


Daucus carota,
Anethum graveolens,
Coriandrum sativum


Соцветия
сирень
черёмуха
пижма
спирея
барбарис обыкновенный
ежа сборная
колокольчик болонский
окопник лекарственный
живокость полевая
клевер
тысячелистник благородный
лук круглый
подмаренник русский
подорожник большой
скерда кровельная
репешок обыкновенный
козлец
шалфей остепненный
пырей
вязель разноцветный
тамарикс

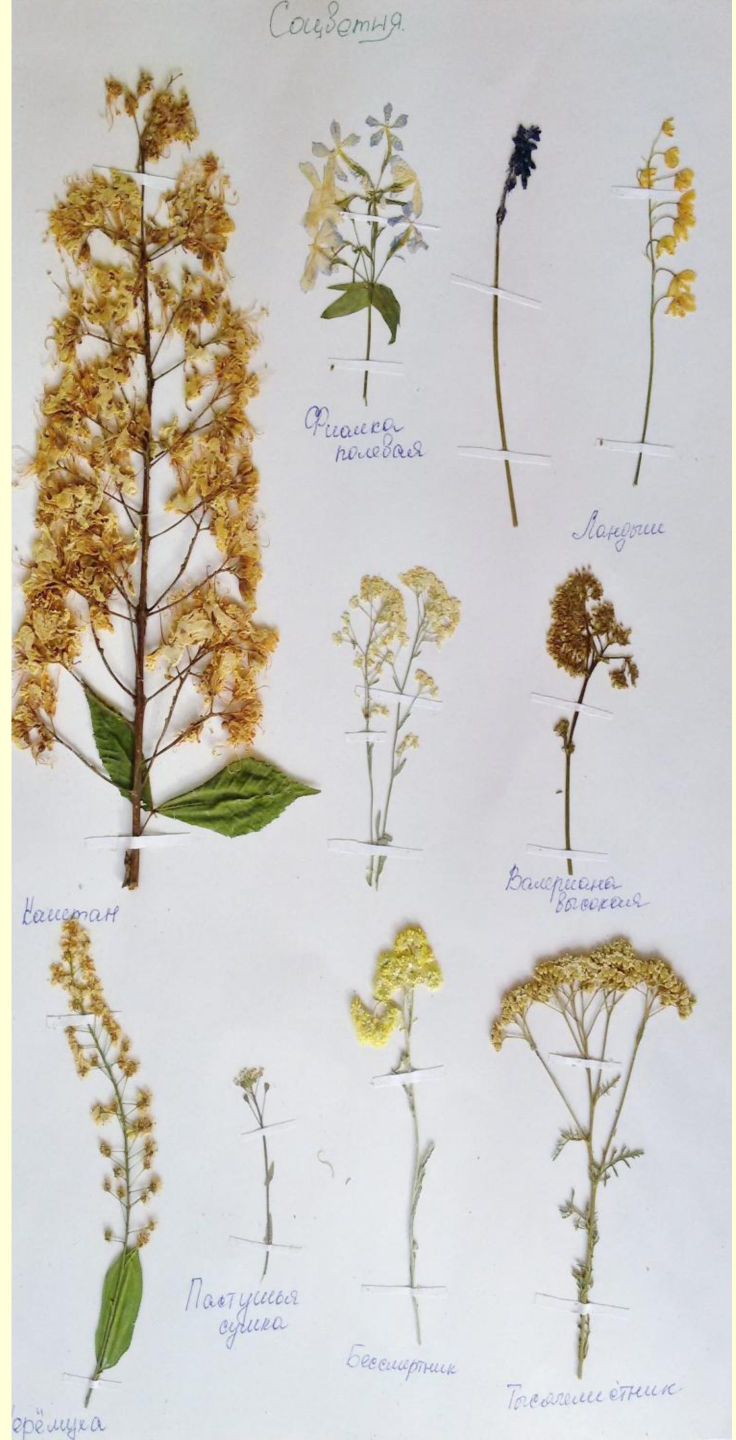

Соцветия
КЛЕВЕР ЛУГОВОЙ
ИКОТНИК СЕРОВАТЫЙ
ЧЕРТОПОЛОХ
ТАМАРИКС
ЦИКОРИЙ
ЛЬНЯНКА
НАГОЛОВАТКА
КЛЕВЕР ПОЛЗУЧИ
ТЫСЯЧЕЛИСТНИК ГЕРБЕРА
СМОЛЕВКА КЛЕЙКАЯ
КЛЕВЕР ПАШЕННЫЙ
ДОННИК
МАРЕНА КРАСИЛЬНАЯ
ЛУК КРУГЛЫЙ
ПОДМАРЕННИК НАСТОЯЩИЙ
ТЫСЯЧЕЛИСТНИК БЛАГОРОДНЫЙ
ДЕВЯСИЛ БРИТАНСКИЙ

Соцветия


клевер пашенный
дрема белая
икотник сероватый
клевер лугово
смолевка клейкая
житняк
марена красильная


Соцветия
Фиалка полевая
Ландыш
Валериана
Пастушья сумка
Бессмертник


Типы соцветий
Вероника колосистая
Клевер пашенный
Смолевка волжская
Котовник венгерский
Паслен черный
Вязель пестрый
Тимьян Палласа
Лапчатка
Кермек
Спирея


Соцветия
Фиалка полевая
Ландыш
Каштан
Валериана высокая
Черёмуха
Пастушья сумка
Бессмертник
Тысячелистник