M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY
STUDENTS SEMINAR 2023-24
LIST OF SEMINARS FOR ODD SEMESTERS

Sl. No	Class	Name of the Student	Seminar Topic	Staff In charge
1	B.Sc- I Sem	Miss. Haseena Awati	Range, Standard Deviation	UAH
		Miss. Tasmiya Makandar	Uses of $N_1V_1=N_2V_2$ Formula	UAH
2	B.Sc- III Sem	Miss.Mallika	Langmuir Adsorption Isotherm	ASB
		Miss. Ambika Poojari	Determination of Cu by calorimetric method	ASB
3	B.Sc- III Sem(OEC)	Miss. Shashikala Awati	Water Pollutanrs and their sources	UAH
4	B.Sc- V Sem P-I	Miss. Shashirekha Lingareddi	Valence Bond Theory	CSK
		Miss.Pooja Ballolli	Gibbs Helmholtz Equation	ASB
	B.Sc- V Sem P-II	Miss. Shahin Naikodi	Abrasives	CSK
		Miss.Netravati Rathod	Complexometric titraions	ASB

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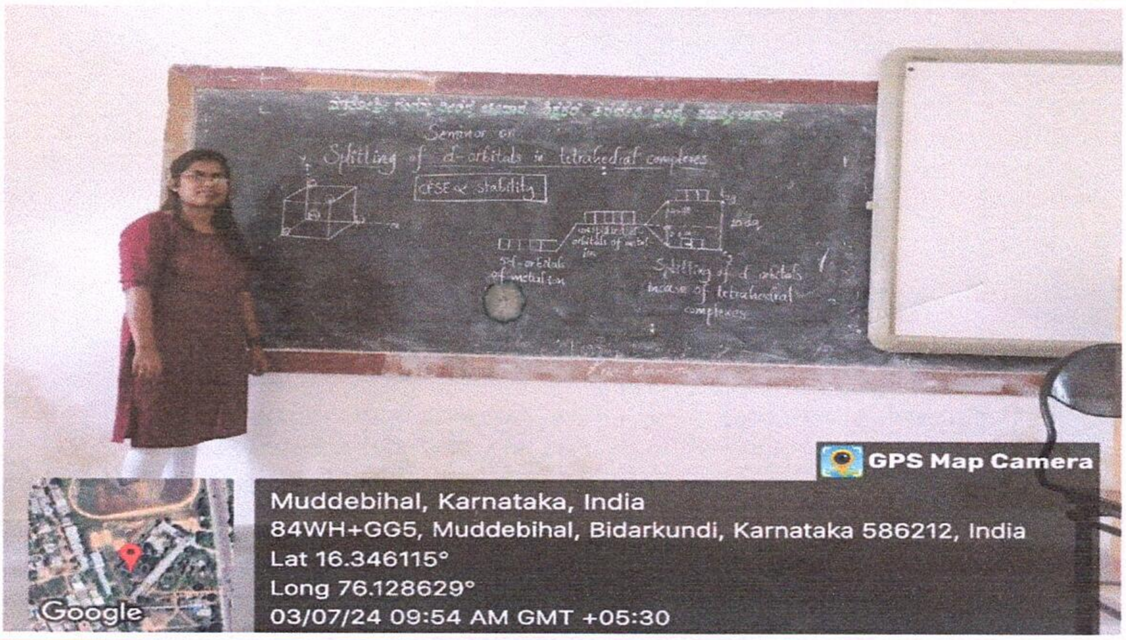
DEPARTMENT OF CHEMISTRY

SEMINAR
ON
SPLITTING OF D- ORBITALS IN TETRAHEDRAL FIELD



NAME : **SHASHIREKHA R.L**

REG NO : **U15NU21S0055**

CLASS : **B.Sc VI SEM**

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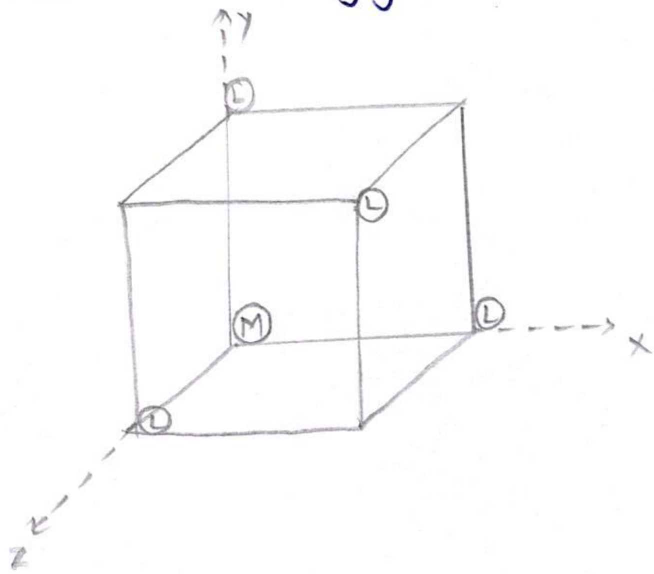
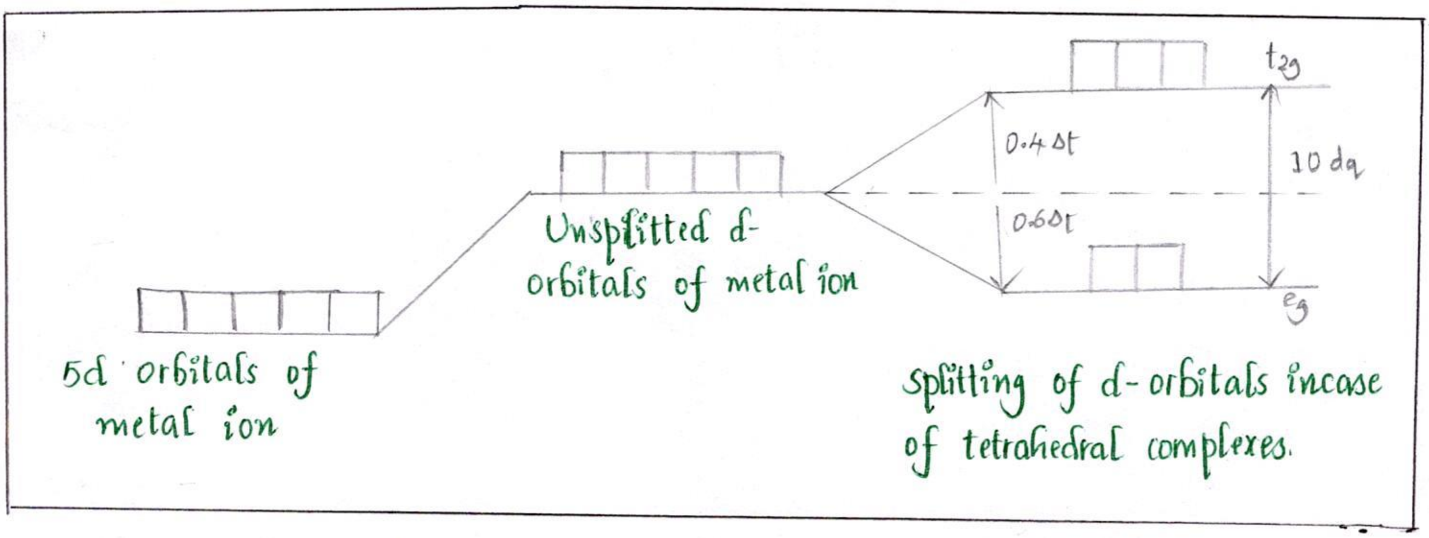
SPLITINING OF d-ORBITALS IN TETRAHEDRAL FEILD

In tetrahedral field 4 ligands are occupying alternate corners of a cube as in the fig.



The e_g orbitals ($d_{x^2-y^2}$, d_{z^2}) are oriented along x, y, z axis & t_{2g} orbitals are (d_{xy}, d_{yz}, d_{xz}) situated in b/w x, y, z axis the direction of approach of the ligands doesn't coinside exactly with either of e_g orbitals or t_{2g} orbitals but t_{2g} orbitals are nearly to the direction of ligands than the e_g orbitals. Therefore, the approach of ligands rises the energy of t_{2g} orbitals more than e_g orbitals. Thus, the t_{2g} orbitals are now of higher energy & e_g orbitals are of lower energy.

The energy difference b/w t_{2g} & e_g orbitals for tetrahedral field is shown in fig.



The magnitude of crystal field splitting in tetrahedral complexes is denoted by Δ_t where t stands for tetrahedral.

Crystal field stabilization energy (CFSE):

It is the gain in energy achieved by preferential filling up of orbitals by electrons. Greater the crystal field stabilization energy of the complex greater is its stability.

$$CFSE \propto stability$$

In case of tetrahedral complexes CFSE is calculated using the formula.

$$0.6\,(n \times e_g) - 0.4\,(n \times t_{2g})$$

Calculation of CFSE in tetrahedral field

No of $e^{\ominus}$	Electronic configuration	$e^{\ominus}$ in e_g & t_{2g}	CFSE
d^1	[		] [↑|]	$e_g^1\ t_{2g}^0$	$0.6\ \Delta_t$
d^2	[		] [↑|↑]	$e_g^2\ t_{2g}^0$	$1.2\ \Delta_t$
d^3	[↑|	] [↑|↑]	$e_g^2\ t_{2g}^1$	$0.8\ \Delta_t$
d^4	[↑|↑|] [↑|↑]	$e_g^2\ t_{2g}^2$	$0.4\ \Delta_t$
d^5	[↑|↑|↑] [↑|↑]	$e_g^2\ t_{2g}^3$	$0\ \Delta_t$
d^6	[↑|↑|↑] [↑↓|↑]	$e_g^3\ t_{2g}^3$	$0.6\ \Delta_t$
d^7	[↑|↑|↑] [↑↓|↑↓]	$e_g^4\ t_{2g}^3$	$1.2\ \Delta_t$
d^8	[↑↓|↑|↑] [↑↓|↑↓]	$e_g^4\ t_{2g}^4$	$0.8\ \Delta_t$
d^9	[↑↓|↑↓|↑] [↑↓|↑↓]	$e_g^4\ t_{2g}^5$	$0.4\ \Delta_t$
d^{10}	[↑↓|↑↓|↑↓] [↑↓|↑↓]	$e_g^4\ t_{2g}^6$	$0\ \Delta_t$

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SEMINAR FOR B.Sc. THIRD SEMESTER STUDENTS YEAR 2023-24

Sl. No	Reg. No	Name of the students	Topic
01	U15NU22S0004	Shivaleela Kankal	M.S. Swaminathan
02	U15NU22S0005	Ganesh Muradi	Anatomy of Dicot root and Monocot root
03	U15NU22S0016	Soumya Hangaragi	Development of dicot embryo
04	U15NU22S0027	Nasarin G. Diddimani	Plant senescence
05	U15NU22S0028	Prajwal Pattepurmath	Anatomy of Dicot leaf and monocot leaf
06	U15NU22S0029	Chaitra Nadagouda	K.C. Mehta
07	U15NU22S0030	Bibiuzma A. Mudnal	B.G.L. Swamy
08	U15NU22S0031	Akshata Bhovi	Development of female gametophyte
09	U15NU22S0035	Vidyashree Ambiger	Root apical meristem
10	U15NU22S0039	Shaheensaba K Mulla	Development of Monocot embryo
11	U15NU22S0040	Deepa Vaddodagi	Types of female gametophyte
12	U15NU22S0043	Sneha Aski	Pollen embryosac
13	U15NU22S0044	Shashikala S. Awati	Prof. Panchanan Maheshwari
14	U15NU22S0049	Zaveriya A Momin	Dictyostelium

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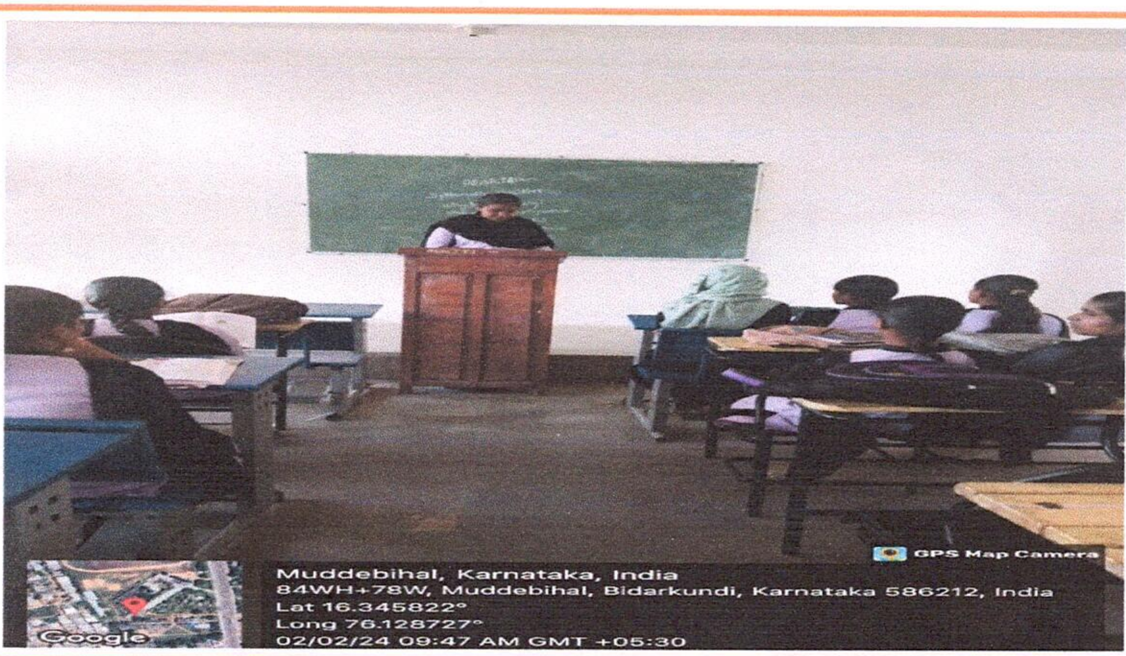
DEPARTMENT OF BOTANY

SEMINAR
ON
PINECILIUM



NAME	:	**JYOTI PATTAR**
REG NO	:	**U15NU23S0088**
CLASS	:	**B.Sc I SEM**

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-: peniccillium :-

Systematic position :-

Kingdom : fungi
phylum : Ascomycotina
order : Eurotiales
family : Trichomaceae
Genus : penicillium

occurence :-

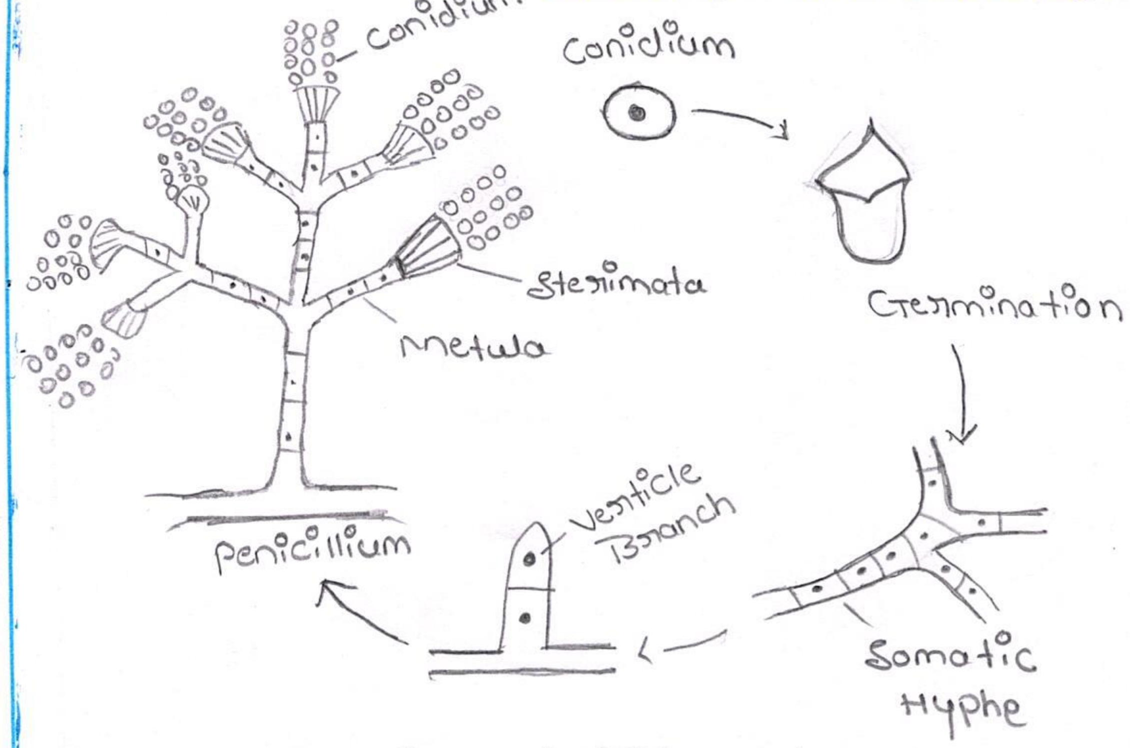
penicillium is a saprophytic fungus they are commanly known as blue moulds or green moulds, species of this genus are abudant Everywhere. living on various organic substrat like the decaying fruits vegetables bread. meats. jullies an great variety of moist plant and animals substancess.

Reproduction :

1] vegatative Reproduction
2] A sexual Reproduction
3] sexual Reproduction

ASexual Reproduction :-

The ASexual Reproduction takes place by means of conidia or conidiaspores which are developed on the conidiosphores The condiasphores are mostly branched septed and consists of multinucleated cells on the terminal End of of the branches of condiospores the bottle like Sterigmata are produced. the Sterigmata are uninucleated and bear the uninucleated conidia. Each conidium is Smooth. uninucleated and green.

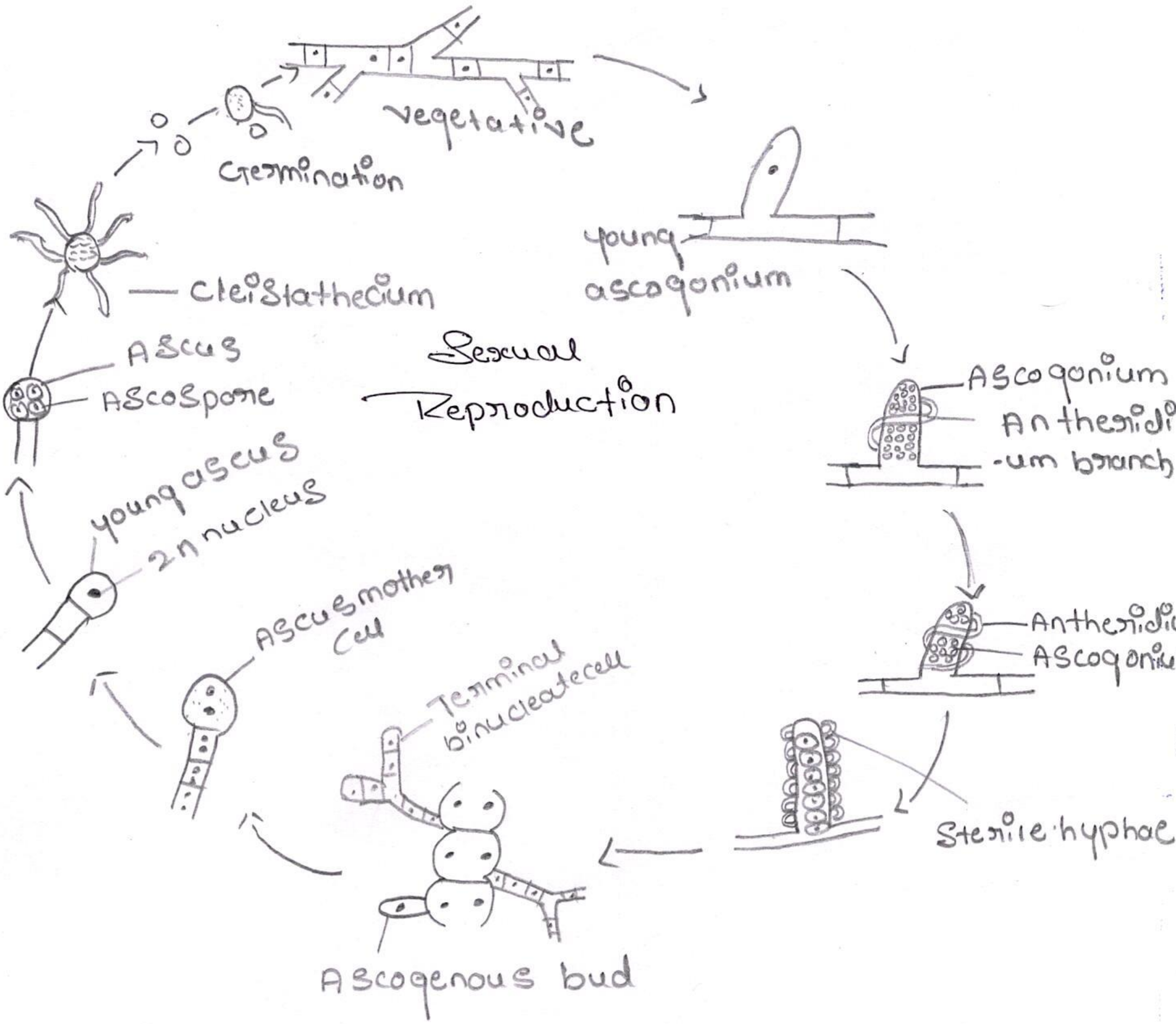


A Sexual Reproduction

vegetative Reproduction :

in pencillium vegatative Reproduction takes place by frangmentation of mycelium. The mycelium breaks up into Small hyphae during mechanical distrubances, then Each hypha grows into a new mycelium.

Sexual Reproduction :-



Sexual Reproduction :-

* The Sexual Stages are not known for most Species of penicillium and multiplication these Species occurs mainly by conidia

* The Structure of the Sex organs and the manner in which ascogenous hyphae bear asci very from a species to species.

* in Some Species the Sexually production take place by functional male and female gametangia (Antherida and Ascogina)

* But in Some Species the Antheradia are functionless while ascogia are functional.

* Ascogonium

Asi. Arises as an Erect long and tubular branch from any cells of the uninucleate mycelium. The young ascognium is uninucleate at the beginning as it Elongates. it single nucleus divide to form about 32 to 64 nuclei asci are globose or pear-shaped found stuttered with in the ascocarp. Each ascus contain four to six fair.

* Ascospores :-

The ascopores are wheel-like structure as the Ascocarp is mature the Ascospores are Released by the decay of the wall of the Ascocarp. on Reaching a suitable substratum Each ascospores- germinates by green tube into a new mycelium.

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SEMINAR FOR B.Sc. FIFTH SEMESTER STUDENTS YEAR 2023-24

Sl.No	Reg. No	Name of the Students	Topic name
1	U15NU21S0024	Manjula Lakkannavar	Monophyly. Paraphyly. polyphyly
2	U15NU21S0032	Muskan Mujavar	Primitive and advanced Homology and Analogy
3	U15NU21S0035	Sangeeta	Parallism v/s convergence
4	U15NU21S0065	Vinuta	Co-evolution of angiosperm and animals
5	U15NU21S0086	Rajayabegum R	Clade and phylogenetic tree related terms
6	U15NU21S0093	Bhagyashree k	Cladogram

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DEPARTMENT OF BOTANY

SEMINAR
ON
COEVOLUTION OF ANGIOSPERMS AND ANIMALS

NAME : VINUTA

REG NO : U15NU21S0065

COURSE : BSC

SEMESTER : V SEM

SUBJECT : BOTANY

YEAR : 2023-2024

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Co-evolution of Angiosperms & Animals
On the origin of Species (1859)
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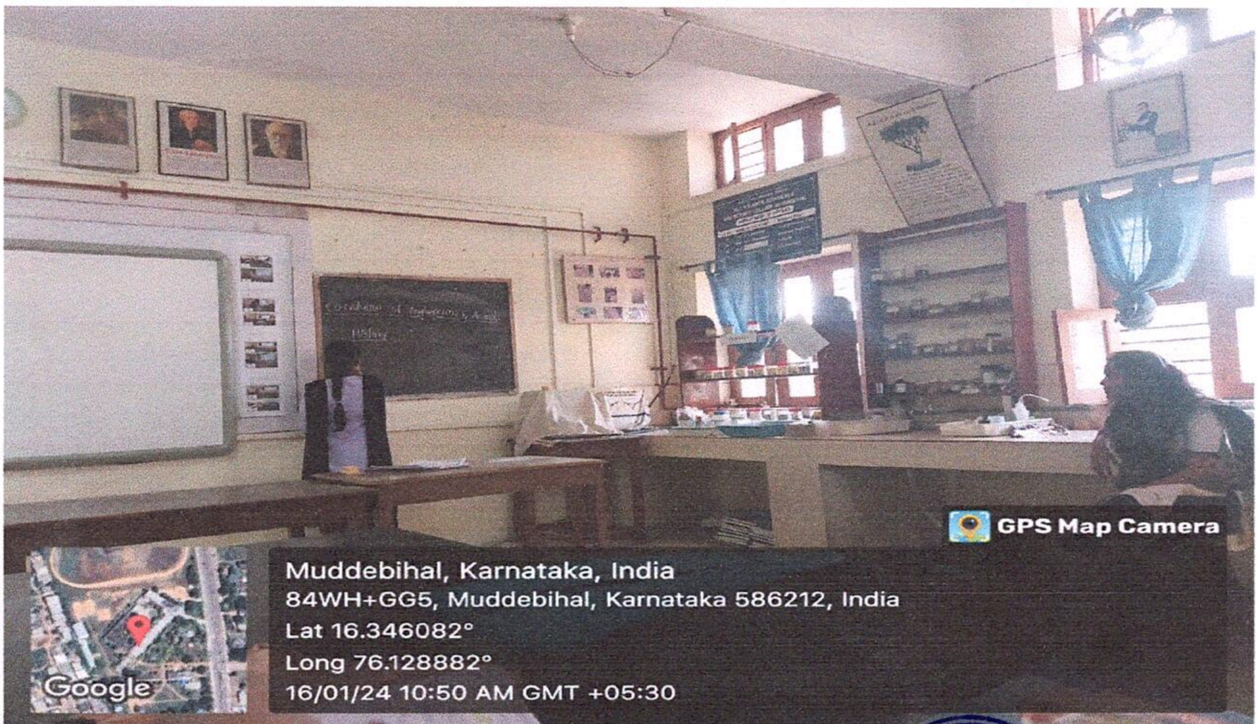
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Co-evolution of angiosperms and animals.

Co-evolution : In the context of evolutionary biology, co-evolution refers to the evolution of at least two species, which occurs in a mutually dependent manner.

* Coevolution was first described in the context of insects & flowering plants, & has since been applied to major evolutionary events, including sexual reproduction, infectious diseases, & ecological communities.

History

* Charles Darwin mentioned evolutionary interactions between flowering plants and insects in On the Origin of Species (1859).
* Although, he did not use the word coevolution, he suggested how plants & insects could evolve through reciprocal evolutionary changes.
* Later studied by naturalists in the late 1800 & in the beginning of 1940 by plant pathologist.
* Daniel H. Janzen showed coevolution between acacias & ants.
* The term 'Co-evolution' was invented by Paul Ehrlich & Peter Raven in 1964 in a famous article : " Butterflies & plants : a

study in coevolution," in which they showed how genua & families of butterflies depended for food on particular phylogenetic groupings of plants.

Co-evolution examples.

1. Predator-Prey coevolution

The predator-prey relationship is one of the most common example of co-evolution. In this respect, there is a selective pressure on the prey to avoid capture & thus, the predator must evolve to become more effective hunters. In this manner, predator-prey co-evolution is analogous to an evolutionary arm race & the development of specific adaptations, especially in prey species, to avoid or discourage predation.

2. Acacia ants and Acacias.

An example of co-evolution that is not characteristic of an arms race, but one which provides a mutual benefit to both a plant species & insect is that of acacia ants & acacia plants. In this relationship, the plant & ants have co-evolved to have a symbiotic relationship in which the ants provide the plant with protection against other potentially damaging insects, as well as other plants which may compete for nutrients & sunlight. In return, the plant provides the ants with shelter & essential nutrients for the ants & their growing larvae.

3. Herbivores & plants

Similar to the predator-prey relationship, another common example of coevolution is the relationship between hebivore species & the plants that they consume.

One example is that of the lodgepole pine seeds, which both red squirrels & crossbills eat in various regions of the Rocky Mountains. Both herbivores have different tactics for extracting the seeds from the lodgepole pine cone; the squirrels will simply gnaw through the pine cone, where as crossbills have specialized mandibles for extracting seeds.

Thus, in the regions where red squirrels are more prevalent, the lodgepole pine cones are denser, contain fewer seeds & have thinner scales to prevent the squirrels from obtaining the seeds. However, in regions where crossbills are more prevalent, the cones are lighter & contain thick scales, so as to prevent the crossbills from accessing the seeds. Thus, the lodgepole pine is concurrently coevolving with both of these herbivores species.

4. Flowering plants and pollinators.

Another example of beneficial coevolution is the relationship between flowering plants & the respective insect & bird species that pollinate them. In this respect flowering plants & pollinators have deueloped co-adaptations that allow flowers to attract pollinators & insects and birds have deueloped specialized adaptati-ons for extracting nectar & pollen from the plants.

⇒ Research indicates that there are atleast three traits that flowering plants evolved to attract pollinators.

1. Distinct visual cuees : Flowering plants have evolved bright colors, stripes, patterns, & colors specific to the pollinator. For example flowering plants seeking to attract insect pollinators are typically blue an ultraviolet, where as red & orange are designed to attract birds.

2. Scent : Flowering plants use scents as a means of instrucling insects as to their location. Since scents become stronger, closer to the plant, the insect is able to hone-in & land on that plant to extract its nectar.