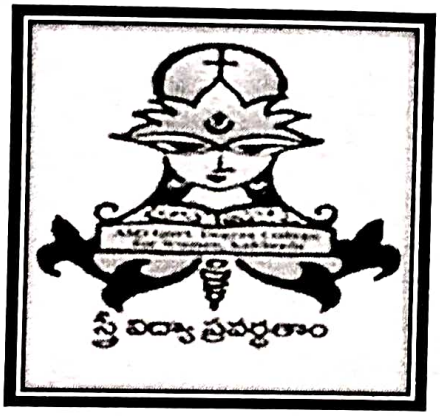
ASD GOVT. DEGREE COLLEGE FOR WOMEN (A)

(Re- Accredited by NAAC with B Grade)
Jagannaickpur, Kakinada, East Godavari, AP – 533002

DEPARTMENT OF ZOOLOGY &AQUACULTURE TECHNOLOGY

2020-2021



Bridge Course

TOPIC: PREVIOUS KNOWLEDGE IN ZOOLOGY

A.S.D GOVT. DEGREE COLLEGE FOR WOMEN (A)

(Re- Accredited by NAAC with 'B' Grade)

Jagannaickpur, Kakinada - 533002, East Godavari, AP.

Bridge Course Register 2020-2021

Date	**19/02/2021 to 27/02/2021**
Conducted through (DRC/JKC/NCC/NSS/Department)	**Department of Zoology**
Nature of Activity (Seminar/Workshop/ Extn. Lecturer etc.)	**Bridge Course**
Title of the Activity	**Previous knowledge in Zoology**
Name of the Department/Committee	**Department of Zoology**
Details of Resource Persons (Name. Designation etc.)	**U. SATYANARAYANA G/F in Zoology** **B. SONIA G/F in Zoology**
No. of Students Participated	**57**
Brief Report on the Activity	**Students can recollect their previous knowledge about zoology and able to understand the present concepts in under graduate level.**
Name of the Lecturers who Planned & Conducted the Activity	**U. SATYANARAYANA G/F in Zoology** **B. SONIA, G/F in Zoology**
Signature of the in Charge	**Dr K. Aruna, Lecturer in Microbiology**
Signature of the Principal	
Remarks	

S.No	Roll No	Name of the student	Signature of Students
1	2036142	Kamadi Gnana nageswari	K.Gnana Nageswari
2	2036143	S. Hema durga devi	S.Hema durga devi
3	2036144	D. Neelima	D. Neelima
4	2036145	S. Pavani	S.Pavani
5	2036148	P. Anitha	P. Anitha
6	2036149	P. chunalika	P. Chunalika
7	2036151	G. Krishna veni	G. Krishnaveni
8	2036152	K. Kusuma	K. Kusuma
9	2036155	D. Pujitha	D Pujitha
10	2036157	P. sandya rani	P. sandhya Rani
11	2036158	G. satyaveni	G. Satyaveni
12	2036159	M. Suvarna latha	M. Suvarna Latha
13	2036160	G. Swathi	G Swathi
14	2038191	K. Ramya	K. Ramya
15	2038194	O. Guna Sri	O. Gunasri
16	2038197	Ch. Swathi Sree	Ch. Swathi Sree
17	2038198	G. varalakshmi	G. Varalaxmi
18	2038199	K. V. Durga Bhavana	K. V. DBhavana.
19	2038202	P. Chandini devi	P. Chandini devi
20	2038207	B. Kamala	B. Kamala
21	2038208	P. Kusuma	P. kusuma
22	2038210	K. Malleswari	K. Malleswari
23	2038211	P. Manasa	P. Manasa
24	2038212	P. Meghana	P. Meghana
25	2038213	P. Nagalakshmi	P. Nagalaxmi
26	2038216	G. Sandhya rani	G. Sandhya Rani
27	2038219	A. Tejasri	A. Tejasri
28	2038220	K. V. S. Swarupa rani	K. V. S swarupa rani
29	2033042	B. venkata Sai Satya.	B. Venkata Sai Satya
30	2033074	P. Kasturi	P. Kasturi

31	2033075	G. Durga naga Bhanumathi	G. Bhanumathi
32	2033076	E. Anusha.	E. Anusha
33	2033077	M. Sri lekha	M. Srilekha
34	2033078	R. uma satya Tejaswini	R. U.S Tejaswini
35	2033079	K. Satya sai lakshmi	K. Satya Sai lakshmi
36	2033080	S. Subbalakshmi	S. Subba Laxmi
37	2033082	N. Jyothi	N. Jyothi
38	2033083	Ch. Devi	Ch. Devi
39	2033084	D. Suseela.	D. Suseela.
40	2033085	G. Haneesha.	G. Haneesha
41	2033090	Y. pravallika.	Y. Pravallika
42	2033096	K. veera Sunitha.	K. Veera Suneetha
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Basics of Zoology

Zoology (/zoʊˈɒlədʒi/)[note 1] is the branch of biology that studies the animal kingdom, including the structure, embryology, evolution, classification, habits, and distribution of all animals, both living and extinct, and how they interact with their ecosystems. The term is derived from Ancient Greek ζῷον, *zōion* ('animal'), and λόγος, *logos* ('knowledge', 'study').[1]

Although humans have always been interested in the natural history of the animals they saw around them, and made use of this knowledge to domesticate certain species, the formal study of zoology can be said to have originated with Aristotle. He viewed animals as living organisms, studied their structure and development, and considered their adaptations to their surroundings and the function of their parts. The Greek physician Galen studied human anatomy and was one of the greatest surgeons of the ancient world, but after the fall of the Western Roman Empire and the onset of the Early Middle Ages, the Greek tradition of medicine and scientific study went into decline in Western Europe, although it continued in the medieval Islamic world. Modern zoology has its origins during the Renaissance and early modern period, with Carl Linnaeus, Antonie van Leeuwenhoek, Robert Hooke, Charles Darwin, Gregor Mendel and many others.

The study of animals has largely moved on to deal with form and function, adaptations, relationships between groups, behaviour and ecology. Zoology has increasingly been subdivided into disciplines such as classification, physiology, biochemistry and evolution. With the discovery of the structure of DNA by Francis Crick and James Watson in 1953, the realm of molecular biology opened up, leading to advances in cell biology, developmental biology and molecular genetics.

Zoology is the branch of science dealing with animals. A species can be defined as the largest group of organisms in which any two individuals of the appropriate sex can produce fertile offspring; about 1.5 million species of animal have been described and it has been estimated that as many as 8 million animal species may exist.[19] An early necessity was to identify the organisms and group them according to their characteristics, differences and relationships, and this is the field of the taxonomist. Originally it was thought that species were immutable, but with the arrival of Darwin's theory of evolution, the field of cladistics came into being, studying the relationships between the different groups or clades. Systematics is the study of the diversification of living forms, the evolutionary history of a group is known as its phylogeny, and the relationship between the clades can be shown diagrammatically in a cladogram.[20]

Although someone who made a scientific study of animals would historically have described themselves as a zoologist, the term has come to refer to those who deal with individual animals, with others describing themselves more specifically as physiologists, ethologists, evolutionary biologists, ecologists, pharmacologists, endocrinologists or parasitologists.[21]

Branches of zoology

Although the study of animal life is ancient, its scientific incarnation is relatively modern. This mirrors the transition from natural history to biology at the start of the 19th century. Since Hunter and Cuvier, comparative anatomical study has been associated with morphography, shaping the modern areas of zoological investigation: anatomy, physiology, histology, embryology, teratology and ethology.[22] Modern zoology first arose in German and British universities. In Britain, Thomas Henry Huxley was a prominent figure. His ideas were centered on the morphology of animals. Many consider him the greatest comparative anatomist of the latter half of the 19th century. Similar to Hunter, his courses were composed of lectures and laboratory practical classes in contrast to the previous format of lectures only.

Classification

Scientific classification in zoology, is a method by which zoologists group and categorize organisms by biological type, such as genus or species. Biological classification is a form of scientific taxonomy. Modern biological classification has its root in the work of Carl Linnaeus, who grouped species according to shared physical characteristics. These groupings have since been revised to improve consistency with the Darwinian principle of common descent. Molecular phylogenetics, which uses nucleic acid sequence as data, has driven many recent revisions and is likely to continue to do so. Biological classification belongs to the science of zoological systematics.

Many scientists now consider the five-kingdom system outdated. Modern alternative classification systems generally start with the three-domain system: Archaea (originally Archaebacteria); Bacteria (originally Eubacteria); Eukaryota (including protists, fungi, plants, and animals)[24] These domains reflect whether the cells have nuclei or not, as well as differences in the chemical composition of the cell exteriors.[24]

Further, each kingdom is broken down recursively until each species is separately classified. The order is: Domain; kingdom; phylum; class; order; family; genus; species. The scientific name of an organism is generated from its genus and species. For example, humans are listed as *Homo sapiens*. *Homo* is the genus, and *sapiens* the specific epithet, both of them combined make up the species name. When writing the scientific name of an organism, it is proper to capitalize the first letter in the genus and put all of the specific epithet in lowercase. Additionally, the entire term may be italicized or underlined.[25]

The dominant classification system is called the Linnaean taxonomy. It includes ranks and binomial nomenclature. The classification, taxonomy, and nomenclature of zoological organisms is administered by the International Code of Zoological Nomenclature. A merging draft, BioCode, was published in 1997 in an attempt to standardize nomenclature, but has yet to be formally adopted.[26]

Vertebrate and invertebrate zoology

Vertebrate zoology is the biological discipline that consists of the study of vertebrate animals, that is animals with a backbone, such as fish, amphibians, reptiles, birds and mammals. The various taxonomically oriented disciplines such as mammalogy, biological anthropology, herpetology, ornithology, and ichthyology seek to identify and classify species and study the structures and mechanisms specific to those groups. The rest of the animal kingdom is dealt with by invertebrate zoology, a vast and very diverse group of animals that includes sponges, echinoderms, tunicates, worms, molluses, arthropods and many other phyla, but single-celled organisms or protists are not usually included.[27]

Structural zoology

Cell biology studies the structural and physiological properties of cells, including their behavior, interactions, and environment. This is done on both the microscopic and molecular levels for single-celled organisms such as bacteria as well as the specialized cells in multicellular organisms such as humans. Understanding the structure and function of cells is fundamental to all of the biological sciences. The similarities and differences between cell types are particularly relevant to molecular biology.

Anatomy considers the forms of macroscopic structures such as organs and organ systems.[28] It focuses on how organs and organ systems work together in the bodies of humans and animals, in addition to how they work independently. Anatomy and cell biology are two studies that are closely related, and can be categorized under "structural" studies. Comparative anatomy is the study of similarities and differences in the anatomy of different groups. It is closely related to evolutionary biology and phylogeny (the evolution of species).[29]

Physiology

Animal anatomical engraving from *Handbuch der Anatomie der Tiere für Künstler.*

Physiology studies the mechanical, physical, and biochemical processes of living organisms by attempting to understand how all of the structures function as a whole. The theme of "structure to function" is central to biology. Physiological studies have traditionally been divided into plant physiology and animal physiology, but some principles of physiology are universal, no matter what particular organism is being studied. For example, what is learned about the physiology of yeast cells can also apply to human cells. The field of animal physiology extends the tools and methods of human physiology to non-human species. Physiology studies how, for example, the nervous, immune, endocrine, respiratory, and circulatory systems function and interact.[30]

Developmental biology

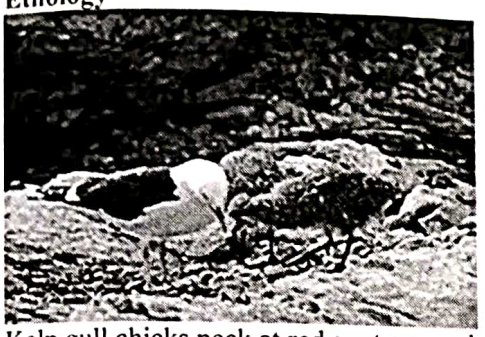
Developmental biology is the study of the processes by which animals and plants reproduce and grow. The discipline includes the study of embryonic development, cellular differentiation, regeneration, asexual and sexual reproduction, metamorphosis, and the growth and differentiation of stem cells in the adult organism.[31] Development of both animals and plants is further considered in the articles on evolution, population genetics, heredity, genetic variability, Mendelian inheritance, and reproduction.

Evolutionary biology

Evolutionary biology is the subfield of biology that studies the evolutionary processes (natural selection, common descent, speciation) that produced the diversity of life on Earth. Evolutionary research is concerned with the origin and descent of species, as well as their change over time, and includes scientists from many taxonomically oriented disciplines. For example, it generally involves scientists who have special training

in particular organisms such as mammalogy, ornithology, herpetology, or entomology, but use those organisms as systems to answer general questions about evolution.[32]
Evolutionary biology is partly based on paleontology, which uses the fossil record to answer questions about the mode and tempo of evolution,[33] and partly on the developments in areas such as population genetics[34] and evolutionary theory. Following the development of DNA fingerprinting techniques in the late 20th century, the application of these techniques in zoology has increased the understanding of animal populations.[35] In the 1980s, developmental biology re-entered evolutionary biology from its initial exclusion from the modern synthesis through the study of evolutionary developmental biology. Related fields often considered part of evolutionary biology are phylogenetics, systematics, and taxonomy.[36]

Ethology



Kelp gull chicks peck at red spot on mother's beak to stimulate the regurgitating reflex.

Ethology is the scientific and objective study of animal behavior under natural conditions,[37] as opposed to behaviorism, which focuses on behavioral response studies in a laboratory setting. Ethologists have been particularly concerned with the evolution of behavior and the understanding of behavior in terms of the theory of natural selection. In one sense, the first modern ethologist was Charles Darwin, whose book, *The Expression of the Emotions in Man and Animals,* influenced many future ethologists.[38]
A subfield of ethology is behavioral ecology which attempts to answer Nikolaas Tinbergen's four questions with regard to animal behavior: what are the proximate causes of the behavior, the developmental history of the organism, the survival value and phylogeny of the behavior?[39] Another area of study is animal cognition, which uses laboratory experiments and carefully controlled field studies to investigate an animal's intelligence and learning.[40]

Biogeography

Biogeography studies the spatial distribution of organisms on the Earth,[41] focusing on topics like dispersal and migration, plate tectonics, climate change, and cladistics. It is an integrative field of study, uniting concepts and information from evolutionary biology, taxonomy, ecology, physical geography, geology, paleontology and climatology.[42] The origin of this field of study is widely accredited to Alfred Russel Wallace, a British biologist who had some of his work jointly published with Charles Darwin.[43]

Molecular biology

Molecular biology studies the common genetic and developmental mechanisms of animals and plants, attempting to answer the questions regarding the mechanisms of genetic inheritance and the structure of the gene. In 1953, James Watson and Francis Crick described the structure of DNA and the interactions within the molecule, and this publication jump-started research into molecular biology and increased interest in the subject.[44] While researchers practice techniques specific to molecular biology, it is common to combine these with methods from genetics and biochemistry. Much of molecular biology is quantitative, and recently a significant amount of work has been done using computer science techniques such as bioinformatics and computational biology. Molecular genetics, the study of gene structure and function, has been among the most prominent sub-fields of molecular biology since the early 2000s. Other branches of biology are informed by molecular biology, by either directly studying the interactions of molecules in their own right such as in cell biology and developmental biology, or indirectly, where molecular techniques are used to infer historical attributes of populations or species, as in fields in evolutionary biology such as population genetics and phylogenetics. There is also a long tradition of studying biomolecules "from the ground up", or molecularly, in biophysics.[45]

S.No	Roll No	Student Name	Attendance 11/12/2020	22/12/20	23/12/20	24/12/20	25/12/20	26/12/20
1	2036142	K. Gnana Nageswari	P	P	P	P	P	A
2	2036143	S. Hema Durga Devi	P	P	P	P	P	P
3	2036144	D. Neelima	P	P	A	P	P	W
4	2036145	S. Pavani	P	A	P	P	P	P
5	2036148	P. Chunallika	P	P	P	P	A	P
6	2036149	P. Anitha	P	P	P	P	P	P
7	2036151	G. Krishna Veni	P	P	P	P	P	P
8	2036152	K. Kusuma	A	P	P	P	P	P
9	2036155	D. Pujitha	P	P	A	P	P	P
10	2036157	P. Sandhya Rani	P	A	P	P	P	P
11	2036158	G. Satya Veni	P	A	P	A	P	P
12	2036159	M. Suvarna Latha	P	P	P	P	A	P
13	2036160	G. Swathi	P	P	P	P	P	A
14	2038101	K. Ramya	P	P	A	P	P	P
15	2038104	O. Guna Sri	P	P	P	P	P	P
16	2038107	Ch. Swathi Sree	P	P	P	P	P	P
17	2038198	G. Vara Lakshmi	P	P	P	P	P	P
18	2038199	K. V. Durga Bhavani	P	P	P	P	P	P
19	2038202	P. Chandini Devi	P	P	P	P	P	P
20	2038208	B. Kasaatma	P	P	P	P	A	A
21	2038210	R. ~~Kusuma~~ Malleswari	P	P	A	P	P	P

S.No	Roll No	Student Name	Attendance					
			1st class	2nd class	3rd class	4th class	5th class	6th class
22	2038207	B. Kamala	A	P	P	P	P	P
23	2038211	P. Manoja	P	P	P	P	P	P
24	2038212	P. Meghana	P	P	P	P	A	P
25	2038213	P. Naga Lakshmi	P	P	P	P	P	P
26	2038216	G. Sandhya Rani	P	P	P	P	P	A
27	2038219	A. Tejasvi	P	P	A	P	P	P
28	2038220	K.V.S. Swaroopa Rani	P	A	P	P	P	P
29	2033072	B. Venkata Sai Satya	P	P	P	P	P	P
30	2033074	P. kasthuri	P	P	P	P	P	P
31	2033075	G. Durga Naga Bhanumathi	P	P	P	P	P	P
32	2033076	E. Anusha	P	P	P	P	P	P
33	2033077	M. Sri lekha	P	A	P	P	P	P
34	2033078	R. Uma Satya Tejaswini	A	P	A	P	P	P
35	2033079	K. Satya Sai Lakshmi	P	P	P	A	P	P
36	2033080	S. Subba Lakshmi	P	P	P	P	P	P
37	2033082	N. Jyothi	P	P	P	P	P	P
38	2033083	Ch. Devi	P	P	P	P	P	A
39	2033084	D. Suseela	P	P	A	P	P	P
40	2033085	G. Haneesha	P	P	P	P	A	P
41	2033090	Y. pravallika	P	P	P	P	P	P
42	2033096	K. Veera Sunitha	P	P	P	P	P	P
43								