HENDERSON'S DICTIONARY OF BIOLOGY

Sixteenth Edition

Edited by
Eleanor Lawrence

Over 22,000 entries

ALWAYS LEARNING

PEARSON

HENDERSON'S
DICTIONARY OF BIOLOGY

ethology *n.* study of the behaviour of animals in their natural habitats. *a.* **ethological**.

ethylene *n.* C_2H_4, a gas produced by plants in minute amounts and which has various developmental effects as a plant hormone, including regulation of fruit ripening. It acts at specific ethylene receptors in the plant cell membrane.

ethylenediaminetetraacetate EDTA *q.v.*

etiolation *n.* the appearance of plants grown in the dark, having no chlorophyll, chloroplasts not developing, internodes being greatly elongated so the plant is tall and spindly, and having small, rudimentary leaves. *a.* **etiolated**.

etiolin protochlorophyll *q.v.*

etiological *alt.* spelling of aetiological.

etiology *alt.* spelling of aetiology.

etioplast *n.* (1) chloroplast formed in the absence of light, found in etiolated leaves. It lacks thylakoid membranes and chlorophyll, and will develop into a functional chloroplast on illumination; (2) chloroplast precursor.

-etum in ecology, suffix used to indicate a plant community dominated by a particular species, e.g. a callunetum, a community dominated by heather (*Calluna vulgaris*).

euapogamy *n.* development of a diploid sporophyte from one or more cells of the gametophyte without fusion of gametes. For haploid apogamy, *see* meiotic apogamy.

Euascomycetae *n.* large class of ascomycete fungi including the black moulds, blue moulds, powdery mildews, discomycetes, tar spots, morels and truffles, in which the asci are enclosed in an ascocarp.

euaster *n.* aster in which rays meet at a common centre.

Eubacteria Bacteria *q.v.*

eucarpic *a.* having the fruiting body arising from only part of the thallus, while the rest of the thallus continues to carry out its somatic functions, *appl.* fungi. *cf.* holocarpic, monocentric.

Eucarya *alt.* spelling of Eukarya.

eucaryote, eucaryotic *alt.* spellings of eukaryote, eukaryotic.

eucentric pericentric *q.v.*

eucephalous *a.* with well-developed head, *appl.* certain insect larvae.

euchroic *a.* having normal pigmentation.

euchromatin *n.* chromatin that is in a structural state such that the DNA can be transcribed. *alt.* active chromatin. *a.* **euchromatic**. *cf.* heterochromatin.

Eucommiales *n.* order of dicot trees comprising a single family Eucommiaceae with one genus *Eucommia*.

eucone *a.* having crystalline cones fully developed in each ommatidium, *appl.* compound eyes.

eudominant *n.* a dominant species that is more or less restricted to a particular climax vegetation.

eudoxome *n.* free-swimming stage of a siphonophore lacking the nectocalyx.

eugamic *a. appl.* mature period rather than youthful or senescent.

eugenic *a. pert.* or able to increase the fitness of a race or breed.

eugenics *n.* a pseudoscientific philosophy at its height in Europe and the United States in the early 20th century which aimed to 'improve' the genetic quality of the human population, and which eventually led to abuses such as compulsory sterilization of those deemed 'unfit' and persecution of racial minorities.

euglenoid *a.* (1) *pert.* Euglenophyta *q.v.*; (2) *appl.* movement, resulting from a change in shape, as in *Euglena*.

Euglenophyta, euglenoids *n., n.plu.* phylum of mainly unicellular freshwater flagellate protists typified by *Euglena*, which have no rigid cell wall and store food as fat or the polysaccharide paramylon. They have a single locomotory undulipodium and a smaller pre-emergent flagellum. Most, but not all, are photosynthetic. In older botanical classifications they are treated as a division of the algae. In zoological classifications they are included in the Mastigophora.

eugonic *a.* (1) prolific; (2) growing profusely, *appl.* bacterial colonies.

euhaline *a.* (1) *appl.* seawater or water of comparable salinity, i.e. *ca.* 35 parts per thousand of sodium chloride (salt); (2) living only in saline waters.

euhyponeuston *n.* organisms living in the top 5 cm of water for the whole of their lives.

Eukarya *n.* one of the three domains or superkingdoms into which all living organisms are classified, the other two being the Bacteria and the Archaea. The Eukarya includes all organisms with cells possessing a membrane-bounded nucleus in which the DNA is complexed with histones and organized into chromosomes. Eukaryotic cells also have an extensive cytoskeleton of protein filaments and tubules, and many cellular functions are sequestered in membrane-bounded organelles in the cytoplasm, such as mitochondria, chloroplasts, endoplasmic reticulum and Golgi apparatus. The eukaryotes comprise protozoans, algae, fungi, slime moulds, plants and animals. *a.* **eukaryotic**. *see* Appendices 1–4.

eukaryote *n*. a member of the Eukarya *q.v.*

eukaryotic cell any cell from a member of the Eukarya *q.v.*

eulamellibranch *a*. *appl*. gills of bivalve molluscs whose filaments are attached to adjacent ones by bridges of tissue.

Euler–Lotka equation an equation used to compute the intrinsic rate of increase, *r*, of a population using survivorship and fertility data, where l_x is the probability of females surviving from birth to the beginning of age class *x*, and m_x is the number of offspring per female in class *x*.

eumelanin *n*. black melanin.

eumerism *n*. an aggregation of like parts.

eumeristem *n*. meristem composed of isodiametric thin-walled cells with dense cytoplasm and large nuclei.

eumerogenesis *n*. segmentation in which the units are similar for at least some time.

eumetazoa *n*. the multicellular animals excluding the sponges.

eumitosis *n*. typical mitosis, as occurs in the cells of most multicellular plants and animals.

euphausiid *n*. member of the order Euphausiacea, small, usually luminescent shrimplike crustaceans forming an important part of the marine plankton.

Euphorbiales *n*. order of dicot trees, shrubs and occasionally herbs, including the families Buxaceae (boxwood), Euphorbiaceae (spurge), Simmondsiaceae (jojoba) and others.

euphotic *a*. (1) well-illuminated, *appl*. zone of surface waters to depth of *ca*. 80–100 m; (2) upper layer of photic zone.

euphotometric *a*. *appl*. leaves oriented to receive maximum diffuse light.

euplankton *n*. the plankton of open water.

euploid *a*. (1) having an exact multiple of the haploid number of chromosomes, e.g. being diploid, triploid, tetraploid, etc., *n*. **euploidy**; (2) *appl*. chromosomal abnormalities that do not disrupt relative gene dosage, *alt*. balanced; (3) *n*. organism having cells with an exact multiple of the haploid number of chromosomes.

eupotamic *a*. thriving both in streams and in their backwaters, *appl*. plankton.

Euptales *n*. order of dicot trees and shrubs comprising the family Eupteleaceae with a single genus *Euptelea*.

European subregion (1) area within the Euro-Siberian floristic region. It consists of the whole of Europe from southern Scandinavia to northern Spain (and excluding the Mediterranean), and east to the Ural mountains; (2) zoogeographical area, a subdivision of the Palaearctic region, consisting of Northern and Western Europe south to the Pyrenees and the southern Alps and east to the Caspian Sea and the Ural Mountains. It also includes Iceland and Greenland.

Euro-Siberian region floristic region within the Boreal kingdom, consisting of the whole of Europe from southern Scandinavia to northern Spain, and Asia between *ca*. 65°N and *ca*. 50°N.

Euryarchaeota *n*. kingdom within the Archaea, defined on the basis of DNA sequence data, which contains the extreme halophiles such as *Halobacterium*, most methanogens, e.g. *Methanobacterium*, *Methanococcus* and *Methanosarcina*, and *Thermoplasma* and *Archaeoglobus*. *cf*. Crenarchaeota.

eurybaric *a*. *appl*. animals adaptable to great differences in altitude or pressure.

eurybathic *a*. having a wide range of vertical distribution.

eurybenthic *a*. *pert*. or living within a wide range of depths in the sea, of organisms that live on the ocean floor.

eurychoric *a*. widely distributed.

euryhaline *a*. *appl*. marine organisms adaptable to a wide range of salinity.

euryhygric *a*. *appl*. organisms adaptable to a wide range of atmospheric humidity.

euryoecious *a*. having a wide range of habitat selection.

euryphotic *a*. adaptable to a wide range of illumination.

Eurypterida, eurypterids *n*., *n.plu*. extinct subclass (or order) of giant (2 m long) predatory fossil aquatic arthropods of the class Merostomata, present in the Ordovician, having a short non-segmented prosoma and a long segmented opisthosoma, and resembling scorpions.

eurythermic *a*. *appl*. organisms adaptable to a wide range of temperature. *alt*. **eurythermous**.

eurytopic *a*. having a wide range of geographical distribution.

euryxerophilous *a*. *appl*. plants adaptable to a wide range of dry conditions within a temperate climate.

eusocial *a*. *appl*. social insects which display cooperative care of the young, reproductive division of labour with more-or-less sterile individuals working on behalf of those engaged in reproduction, and an overlap of at least two generations able to contribute to colony labour. They include all ants, termites, and some bees and wasps.

eusporangiate *a*. *appl*. ferns in which a sporangium develops from several initial cells, which form a sporangium with a wall of more than

one layer of cells (a eusporangium). *cf.* leptosporangiate.

eusporangium *see* eusporangiate.

Eustachian tube canal connecting middle ear and pharynx (throat).

Eustachian valve valve guarding orifice of inferior vena cava in atrium of heart.

eustele *n.* type of stele in which strands of vascular tissue (vascular bundles) surround a central pith and are separated from each other by parenchymatous ground tissue. Present in stems of horsetails and of dicotyledons and some gymnosperms.

Eustigmatophyta *n.* phylum of unicellular yellow-green photosynthetic protists, possessing a distinctive eyespot composed of drops of carotenoid pigments, and usually a single flagellum.

eustomatous *a.* having a distinct mouth or mouth-like opening.

eustroma *n.* in lichens, stroma formed of fungal cells only.

Eutheria, eutherians *n.*, *n.plu.* an infra-class of mammals, including all mammals except the monotremes and marsupials, which are viviparous with an allantoic placenta, and have a long period of gestation, after which the young are born as immature adults. *alt.* placental mammals.

euthycomous *a.* straight-haired.

eutrophic *a. appl.* water bodies rich in plant nutrients and therefore usually highly productive, with very large numbers of plankton, often dominated by cyanobacteria, and often with turbid water in summer. Eutrophic waters suffer frequent algal blooms. Coarse fish (e.g. perch, roach and carp) are dominant. Larger aquatic plants may be absent as the water can become depleted of dissolved oxygen through the decay of large amounts of organic matter. *n.* **eutrophy**. *see* eutrophication.

eutrophication *n.* the enrichment of bodies of fresh water by inorganic plant nutrients (e.g. nitrate, phosphate). It may occur naturally but can also be the result of human activity (cultural eutrophication from fertilizer runoff and sewage discharge) and is particularly evident in slow-moving rivers and shallow lakes. The biomass of phytoplankton and herbivorous zooplankton increases, and species diversity decreases. The water becomes turbid in summer, the growth of the larger aquatic plants may eventually become suppressed and algal blooms are frequent. The water may become anoxic through the decay of large amounts of organic matter. Increased sediment deposition can eventually raise the level of the lake or river bed, allowing land plants to colonize the edges, and eventually converting the area to dry land.

eutropic *a.* (1) turning sunward; (2) dextrorse *q.v.*

eutropous *a.* (1) *appl.* insects adapted to visiting special kinds of flowers; (2) *appl.* flowers whose nectar is available to only a restricted group of insects.

euxerophyte *n.* plant that shows adaptations to and thrives in very dry conditions.

evaginate *v.* (1) to evert from a sheathing structure; (2) to protrude by eversion.

evagination *n.* (1) the process of unsheathing, or the product of this process; (2) the process of turning inside out.

E-value false-positive expectation value, a statistical measure that is used as a cut-off point to filter the matches found in a search of a sequence database against a query sequence, to try to ensure that only homologous sequences will be found. In its simplest form it represents the number of alignments with scores at least equal to a chosen value, *S*, that would be expected by chance alone, given the size of the database.

evanescent *a.* (1) disappearing early; (2) *appl.* flowers that fade quickly.

evaporative water loss (EWL) (1) (*bot.*) *see* evapotranspiration; (2) (*zool.*) in mammals and birds, the loss of heat from the body through the evaporation of water, which may occur from the body surface (sweating) in some mammals and/or from the respiratory tract (thermal panting) in some mammals and birds. Although EWL is actively employed by some birds and animals for cooling, in small mammals it could lead to dehydration and is minimized.

evapotranspiration *n.* loss of water from the soil by evaporation from the surface and by transpiration from the plants growing thereon.

evelate *a.* lacking a veil, *appl.* certain agaric fungi.

even-toed ungulates artiodactyls *q.v.*

event-related potential large change in electrical activity in the brain that is elicited by a sensory or motor event. *alt.* evoked potential.

evergreen *a. appl.* vascular plants that do not shed all their leaves at the same time and therefore appear green all the year round.

eviscerate *v.* (1) to disembowel; (2) to eject the internal organs, as do holothurians (sea cucumbers) on capture.

evocation *n.* in developmental biology, the ability of an inducer to elicit a particular pathway of differentiation in the induced tissue.

evoked potential event-related potential *q.v.*

evolute *a.* (1) turned back; (2) unfolded.

evolution *n.* the development of new types of living organisms from pre-existing types by the accumulation of genetic differences over long periods of time. It is studied by reference to the fossil record and to the anatomical, physiological and genetical differences between extant organisms. Present-day views on the process of evolution are based largely on the theory of evolution by natural selection formulated by Charles Darwin and Alfred Russel Wallace in the 19th century. Darwin's theory has undergone certain modifications to incorporate the principles of Mendelian genetics, unknown in his day, and the more recent discoveries of molecular biology, but still remains a basic framework of modern biology. *see also* Creationism, Darwinism, natural selection, neo-Darwinism, macroevolution, microevolution, molecular evolution.

evolutionarily stable strategy (ESS) in evolutionary theory, a behaviour pattern or strategy which, if most of the population adopt it, cannot be bettered by any other strategy and will therefore tend to become established by natural selection. Using games theory the results of various different strategies (e.g. in contests between males) can be worked out and a theoretical ESS determined and compared with actual behaviour.

evolutionary clock molecular clock *q.v.*

evolutionary distance (ED) a measure of the evolutionary relatedness of two taxa. It is obtained by comparing e.g. rDNA sequences and using the number of positions in the sequence at which the two taxa differ (after correction for various factors). *alt.* genetic distance.

evolutionary grade the level of development of a structure, physiological process or behaviour occupied by a species or group of species that are not necessarily related.

evolutionary psychology an approach to psychology in which knowledge and principles from evolutionary biology are used in research on the structure of the human mind and human behaviour.

evolutionary taxonomy taxonomic philosophy and method that utilizes both phenotypic characters and lines of descent in the classification of organisms. One difference from the cladistic method of classification is the acceptance of taxa which do not contain all the descendants of the common ancestor, e.g. the class Reptilia, which does not contain the birds, who are descendants of a reptile ancestor. *cf.* cladistics.

evolutionary transformation series pair of homologous characters, one of which is derived from the other.

evolvability *n.* the capacity to undergo evolutionary change.

evolvate *a.* lacking a volva, *appl.* certain agaric fungi.

evolve *v.* to undergo evolution.

EWL evaporative water loss *q.v.*

ex- prefix derived from Gk *ex*, without.

exact test category of statistical test that can be applied to some types of data in which the probability of the results conforming to the null hypothesis is calculated directly, rather than via a test statistic (*q.v.*). Examples are the exact test of goodness-of-fit and Fisher's exact test.

exafferent *a. appl.* stimulation that results solely from factors outside the body.

exalate *a.* wingless.

exalbuminous *a.* (1) lacking albumen; (2) *appl.* seeds without endosperm or perisperm.

exannulate *a.* having sporangia not furnished with an annulus, *appl.* certain ferns.

exanthema *n.* a skin rash, or a disease in which such a rash appears, e.g. measles.

exaptation *n.* an evolutionary process in which a characteristic that evolved under natural selection for a particular function is placed under selection for a different function: *e.g.* feathers first developed for heat insulation were later adapted for flight.

exarate *a. appl.* insect pupae in which all the appendages are free.

exarch *n.* stele with protoxylem strands to the outside of the metaxylem, produced when xylem matures centripetally so that the oldest protoxylem is farthest from the centre of the axis.

exarillate *a.* lacking an aril.

exasperate *a.* furnished with hard, stiff points.

Excavata, excavates *n., n.plu.* proposed major monophyletic taxonomic grouping, based on molecular phylogenetics, which includes a diverse range of heterotrophic, mostly flagellate, unicellular eukaryotes such as diplomonads, trypanosomes, euglenids and also some amoeba-like protozoa and the acrasid slime moulds.

excavate *a.* hollowed out.

excentric *a.* (1) one-sided; (2) having the two portions of a lamina or pileus unequally developed. *alt.* eccentric.

exchange diffusion *see* antiport *q.v.*

exciple, excipulum *n.* outer covering of apothecium.

excision repair DNA repair process in which abnormal or mismatched nucleotides are enzymatically cut out of one strand of a DNA molecule and the correct nucleotides replaced by enzymatic synthesis using the remaining intact strand as template.

excitability *n.* capability of a living cell or tissue to respond to an environmental change or stimulus.

excitation *n.* (1) act of producing or increasing stimulation; (2) immediate response of a cell, tissue or organism to a stimulus.

excitation–contraction coupling the process by which the contractile fibrils of a muscle are stimulated to contract by excitation by a neuron.

excitatory *a.* (1) tending to excite, *appl.* e.g. stimuli, cells; (2) *appl.* neuron, neurotransmitter or synapse whose activity tends to cause generation of an action potential in a postsynaptic neuron. *cf.* inhibitory.

excitatory cells motor neurons in the sympathetic nervous system.

excitatory postsynaptic potential (EPSP) electrical potential generated in a postsynaptic neuron by the action of neurotransmitter liberated at a synapse, and which tends to produce an action potential.

excitotoxicity *n.* refers to the death of neurons when overstimulated with large amounts of the excitatory neurotransmitter glutamate, which causes a prolonged depolarization of the neuronal membrane.

exclusive species species that is confined to one community.

exconjugant *n.* (1) microorganism which is leading an independent life after conjugation with another; (2) female bacterial cell that has been in conjugation with a male cell and received DNA from the male.

excorticate decorticate *q.v.*

excreta *n.plu.* (1) waste material eliminated from body or any tissue thereof; (2) harmful substances formed within a plant.

excretion *n.* the elimination of waste material from the body of a plant or animal, specifically the elimination of waste materials produced by metabolism.

excretophores *n.plu.* in invertebrates, cells of coelomic epithelium in which waste substances from blood accumulate, for discharge into coelomic fluid.

excretory *a. pert.* or functioning in excretion, *appl.* e.g. organs, ducts.

excurrent *a.* (1) *pert.* ducts, channels or canals in which there is an outgoing flow; (2) with undivided main stem; (3) having midrib projecting beyond apex, *appl.* leaves.

excurvate *a.* curved outwards from centre.

excystation *n.* emergence from a cyst.

exendospermous *a.* without endosperm.

exergonic *a.* releasing energy, *appl.* metabolic reactions.

exflagellation *n.* process of microgamete formation by microgametocyte in protozoan blood parasites.

exfoliation *n.* (1) the shedding of leaves or scales from a bud; (2) peeling in flakes, as of bark or skin.

exhalant, exhalent *a.* carrying from the interior outwards.

exine *n.* tough and durable outer layer of wall of pollen grain, often intricately sculptured, composed mainly of sporopollenin.

exinguinal *a.* (1) occurring outside the groin; (2) *pert.* 2nd joint of arachnid leg.

exites *n.plu.* offshoots on outer lateral border of axis of certain arthropod limbs.

exo- prefix derived from Gk *exo*, without, signifying outside, acting outside, opening to the outside, etc.

exobiology *n.* the search for and study of life originating outside Earth, and the study of the effects of extraterrestrial environments on living organisms. *alt.* astrobiology.

exobiotic *a.* living on the exterior of a substrate or the outside of an organism.

exocardiac *a.* situated outside the heart.

exocarp *n.* outermost layer of pericarp of fruit, the skin. *alt.* epicarp.

exoccipital *a. pert.* a skull bone on each side of the foramen magnum.

exochorion *n.* outer layer of membrane secreted by follicular cells surrounding the egg in ovary of insects.

exocoel *n.* (1) space between adjacent mesenteries in sea anemones and their relatives; (2) exocoelom *q.v.*

exocoelar *a. pert.* parietal wall of coelom.

exocoelom *n.* an extra-embryonic cavity of embryo.

exocone *a. appl.* insect eye with cones of cuticular origin.

exocrine *a.* (1) *appl.* glands whose secretion is drained by ducts; (2) *pert.* such glands. *cf.* endocrine.

exocuticle *n.* the main layer of the cuticle (exoskeleton) of arthropods, which in crustaceans often contains calcium salts.

exocytosis *n.* process by which proteins and some other molecules are secreted from eukaryotic cells. They are packaged in membrane-bounded vesicles which then fuse with the plasma membrane, releasing their contents to the outside of the cell. *a.* **exocytotic, exocytic**.

exodermis *n.* specialized cell layer in root immediately underneath the epidermal layer. It produces root hairs.

exoenzyme *n.* any enzyme secreted by a cell and which acts outside the cell, i.e. an extracellular enzyme.

exo-erythrocytic *a.* outside red blood cells, *appl.* phase of the malaria parasite life cycle in humans in which merozoites produced from schizonts reinvade tissue cells.

exogamy *n.* (1) outbreeding *q.v.*; (2) cross-pollination *q.v.*; (3) disassortative mating *q.v.*

exogastric *a.* having the shell coiled towards dorsal surface of body.

exogastrula *n.* artificially induced abnormal amphibian gastrula in which the mesoderm remains on the outside.

exogastrulation *n.* the formation of an exogastrula.

exogenote *n.* in bacterial conjugation, the chromosome fragment that passes from donor to recipient to form part of the merozygote.

exogenous *a.* (1) originating outside the organism, cell or system being studied; (2) developed from superficial tissue, the superficial meristem; (3) growing from parts that were previously ossified; (4) *appl.* metabolism concerned with motor and sensory activities, hormone production and action, temperature control, etc. *cf.* endogenous.

exogenous rhythm metabolic or behavioural rhythm which is synchronized by some external factor and which ceases to occur when this factor is absent.

exognath, exognathite *n.* outer branch of oral appendages of crustaceans.

exogynous *a.* *appl.* flower with style longer than corolla and projecting above it.

exo-intine *n.* middle layer of a spore covering, between exine and intine.

exomixis *n.* union of gametes derived from different sources.

exon *n.* block of DNA sequence encoding part of a polypeptide chain (or of tRNA or rRNA), which forms part of the coding sequence of a eukaryotic gene, and which is separated from the next exon by a non-coding region of DNA (an intron).

exonephric *a.* with nephridia opening to exterior, *appl.* oligochaetes.

exon shuffling in evolution, the formation of new genes by the linking together of different combinations of exons encoding different protein sequences.

exon trapping cloning technique for isolating protein-coding sequences using specialized vectors in which only DNA containing exons can be maintained.

exonuclease *n.* any of various enzymes that degrade DNA or RNA by progressively splitting off single nucleotides from one end of the chain. *alt.* nuclease, deoxyribonuclease, ribonuclease.

exopeptidase *n.* peptidase that successively cleaves off terminal amino acids or dipeptides. EC 3.4.11–19. *see also* aminopeptidase, carboxypeptidase, omega peptidase.

exoperidium *n.* the outer layer of spore covering (peridium) in certain fungi.

exophytic *a.* on, or *pert.* exterior of plants.

exopodite *n.* the outer branch of a typical two-branched (biramous) crustacean limb.

Exopterygota *n.* major division of the insects including those with only slight metamorphosis and no pupal stage. Includes the Anoplura, Dermaptera, Dictyoptera, Embioptera, Ephemeroptera, Hemiptera, Isoptera, Mallophaga, Orthoptera, Odonata, Phasmida, Plectoptera, Psocoptera, Thysanoptera.

exopterygote, exopterygotous *a.* *appl.* insects in which the wings develop gradually on the outside of the body and there is no pupal stage, e.g. dragonflies, and whose young are called nymphs. *see* Exopterygota.

exoskeleton *n.* hard supporting structure secreted by and external to the epidermis, such as the calcareous exoskeletons of some sponges and the chitinous exoskeleton of arthropods.

exosmosis *n.* osmosis in an outward direction, e.g. out of a cell.

exosporium *n.* outer wall of spore coat.

exostosis *n.* (1) formation of knots on surface of wood; (2) formation of knob-like outgrowths of bone or of dental tissue at a damaged portion.

exoteric *a.* produced or developed outside the organism.

exothecium *n.* the outer specialized dehiscing cell layer of anther.

exothermic *a.* (1) ectothermic *q.v.*, *n.* **exotherm**; (2) *appl.* chemical reactions that release heat.

exotic *n.* foreign plant or animal which has not acclimatized or naturalized.