

GLOSSARY

Acetolysis: Lysis of organic substance by the action of acetic acid or acetic anhydride.

Allergy: An immunological reaction in response of the introduction of a foreign body by the secretion of histamine.

Amb: Abbreviated form of the word Ambitus. Boundary, outline or circumference.

Angulaperturate: Angular placement of aperture on the outline of equator in the polar view of a pollen.

Anti-inflammatory: Any agent or condition that mitigates inflammation.

Aperture: The thin or missing area of the exine of pollen grain or spore through which the internal content comes out at the time of its germination.

Apiarist: A person who keeps honeybees for their products.

Apiary: An apiary is a place where beehives of honeybees are kept.

Apiculture: The keeping of honeybee colonies for commercial production of honey and other products of the bee hive.

Apidae: A large family of bees that contains three subfamilies: Xylocopinae, Nomadinae and Apinae.

Apitoxin: A bitter colourless liquid produced by the filamentous gland of the stinging apparatus of a worker bee.

Apocolpium: A region at the pole of a zonocolpate pollen grain delimited by lines connecting the apices of the colpi.

Apoporium: An area at the pole of a zonoporate pollen grain delimited by lines connecting the borders of the pores.

Baculate: Ornamentation on the surface of exine of a pollen provided with baculum like projections with characteristic cylindrical structure ($>1 \mu\text{m}$ in length and a height greater than width).

Bee bread: A fermented product prepared by worker bees comprised of pollen, nectar and saliva of bees. It is meant for feeding larvae and young bees and to produce royal jelly.

Beekeeper: *vide* Apiarist.

Beekeeping: *vide* Apiculture.

Bee pasturage: It is comprised of the flowers foraged by honeybees for harnessing nectar and pollen.

Bee plant: The source plants of nectar and pollen foraged by honey bees.

Bee pollen: Pollen mass packed with honey and forming granules.

Bee wax: A sort of wax comprised of esters of fatty acids and different long chain alcohols, produced by worker honey bees from their wax glands.

Brood: A group of recently hatched organisms. In apiary, eggs, newly hatched larvae and pupae together represent brood.

Canaliculate: Roughly parallel running grooves as ornamentation on the surface of pollen grains.

Clavate: It is a shape like club with wider apex than base. In pollen ornamentation like this may be present on the surface of exine.

Colporate: It is a kind of aperture, specially related with the exine of pollen, where the ectoaperture *i.e.* external aperture is furrow like and the endoaperture coinciding with the external one is circular or elongated.

Colpus: Furrow like aperture parallel to the polar axis of pollen.

Conate: Structure with wide base and pointed apex, $>1 \mu\text{m}$ in size and height \leq width.

Corbicula: A sac like structure enclosure is smooth area on the hind tibia of certain species of bees which serving to transport pollen.

Dearth period: A period when nectar or pollen for foraging by honeybees is either not accessible or absent altogether or at a minimum in the field.

Dimorphism: Two different forms of a species especially in the same population.

Distal pole: The end of a spore or pollen grain facing off from the centre of a tetrad.

Drone: Haploid fertile male honeybee lacking sting, pollen baskets and wax glands.

Echinate: Spiny structure ($> 1 \mu\text{m}$), occurring as ornamentation on the surface of pollen grains.

Equatorial plane: The plane corresponding with equatorial region of any structure and perpendicular to the polar axis.

Ester: An organic compound with the replacement of hydrogen of carboxyl group with an alkyl or other organic group.

Exine: The outer most layer of the wall of pollen.

Floral fidelity: A phenomenon where honey bee visits only the flowers of a typical species.

Forage spectrum: Entire gamut of plant species foraged by bees.

Foraging: Act of searching foods.

Fossaperturate: A condition where apertures are placed in the indentations between the lobes of lobate pollen.

Fossulate: A condition with irregular grooves on the surface of pollen grain.

Foveolate: A condition with round shaped depressions or lumina ($> 1 \mu\text{m}$ in diameter) on the surface of pollen.

Gammate: Structure similar with Greek letter γ and having height \leq width. Exine of pollen ornamented with such structure.

Granulate: Small and round shaped structure ($< 1 \mu\text{m}$) constituting sculpturing elements of exine of pollen.

Honey bee venom: *vide* Apitoxin.

Honeycomb: Abode of honey bees constructed with waxy elements and innumerable hexagonal cells.

Honeydew: Secretion by some aphids and scale insects feeding on plant sap. Sugar-rich secretion is sticky in nature.

Honey flow: Amount or period of availability of floral nectar foraged by bees for the preparation of honey.

Honey wine: An alcoholic product formed by fermentation of honey.

Hymenoptera: A taxon of insects of the level order comprised of sawflies, wasp, bees and ants having membranous wings.

Hypopharyngeal gland: The elongated coiled glands, in pair, are situated on two sides inside the head of worker bees.

Intine: The innermost cellulosic wall of pollen.

Lalongate: Elongated endoaperture oriented at right angles to the long axis of ectoaperture.

Leptoma: Thin area on the exine surface functioning as aperture, indistinct unlike typical apertures.

Lolongate: Elongated endoaperture oriented at parallel to the long axis of ectoaperture.

Lophate: A kind of structure with ridges (lophae) surrounding depressed regions. Exine with such ornamentation.

Melissopalynology: A branch of palynology dealing with pollens obtained from honey and pollen loads.k

Mesocolpium: Area on the surface of a pollen delimited by lines between the apices of adjacent colpi.

Mesoporiium: Area on the surface of a pollen delimited by lines between the apices of adjacent pores.

Microreticulate: Reticulate ornamentation consisting of muri and lumina $< 1 \mu\text{m}$.

Multifloral honey: Honey produced with the collection of nectar from several plant species, as evidenced with the presence of pollens of respective species, none of which having 45% or more density in pollen population in honey.

Nectar: A liquid exudate rich in sugar, produced and secreted from the glands, nectarines, either present within or outside a flower.

Nectar flow: It denotes the amount of nectar produced by flowers and also the times in a year when many nectariferous plants are in peak of their bloom to support the production of honey in abundance.

Nectary: Nectar producing gland, situated inside or outside a flower.

Oblate: A shape of pollen grain having a ratio of polar axis and equatorial diameter ranging between 0.50 - 0.75.

Oblate spheroidal: A shape of pollen grain with a ratio of polar axis and equatorial diameter ranging between 0.88 - 1.00.

Parasyncolpate: Pollen grains with two or more meridional colpi branches at apices and anastomoses towards poles delimiting an area designated as apocolpia.

Parasyncolporate: Pollen grains with compound apertures and two or more meridional colpi branches at apices and anastomoses towards poles delimiting an area designated as apocolpia.

Per-oblate: A shape of pollen grain having a ratio of polar axis and equatorial diameter < 0.50 .

Per-prolate: A shape of pollen grain having a ratio of polar axis and equatorial diameter > 2 .

Pilate: An ornamentation on the exine surface of pollen with the structure consisting of a bulbous head and a slender shaft.

Planaperturate: Pollen grain with an angular outline and the apertures lying on the middle of the straight or convex sides of pollen viewed from pole.

Polar axis: An imaginary line between two poles of a pollen grain.

Polar distance: The vertical distance between the equator and pole.

Polar view: The view of a pollen grain from any polar side.

Pollen: Microgametophytes of seed plants, representing male gametes.

Pollen basket: *vide* Corbicula.

Pollen pellet: A pellet of pollen formed with the pollens collected by bees and stored in the corbicules of hind legs. These pellets are stored in the hive for the purpose of using as food.

Polyfloral honey: *vide* Multifloral honey.

Pore: Circular or elliptic aperture with a ratio length and breadth < 2 .

Pororate: A kind of aperture in which both the ectoaperture and the endoaperture are pore in nature and are not congruent.

Prolate: A shape of pollen with polar axis longer than the equatorial diameter and having a ratio of two ranging between 1.33 - 2.00.

Prolate spheroidal: A shape with greater polar diameter than equatorial diameter, having a ratio of two ranging between 1.00 & 1.14.

Propolis: A resinous compound produced by honeybees by mixing saliva, bee-wax and exudate from buds of a plant, sap flows, or other botanical sources.

Proximal pole: The polar region of a pollen facing the centre of tetrad.

Psilate: Smooth surface lacking any structure as ornamentation.

Punctate: Surface of pollen grain provided with round or elongate tectal perforation ($< 1 \mu\text{m}$ in length/diameter).

Queen honeybee: The fertile female honeybee in a hive of honeybee.

Radially symmetrical: Symmetry of body around the central axis of any object.

Reticulate: Structures constituted with horizontally elongated projections forming network like pattern consisting lumina wider than 1 μm and bordered by the projections narrower than lumina.

Royal jelly: A product, secreted by the hypopharyngeal glands of worker honey bees, fed to all larvae in the colony.

Rugulate: Structures constituted with elongated sexine elements ($>1 \mu\text{m}$ long) and arranged irregularly on a surface. It is a condition somewhat intermediate between striate and reticulate natures.

Sinu-aperturate: A condition where equatorial apertures are seen to be situated in the middle of the concave sides, when viewed from pole of a pollen grain.

Spheroidal: A shape with the polar diameter and equatorial diameter are approximately equal.

Spinate: Any object with spine like structures with long and tapering end ($>1 \mu\text{m}$).

Striate: Ornamentation of any surface with horizontally elongated projections running parallel and separated by grooves.

Sub-oblate: A shape with a ratio of polar diameter and equatorial diameter ranging between 0.75 - 0.88.

Sub prolate: A round shaped structure with a ratio of polar diameter and the equatorial diameter ranging between 1.14 - 1.33.

Sulcus: Furrow like aperture perpendicularly placed with respect to polar axis.

Syncolpate: Pollen with two or more meridional colpi fused at the terminal parts.

Syncolporate: Pollen grain with compound apertures and colpi fused at the terminal parts.

Ulcus: *vide* Leptoma.

Unifloral honey: Honey prepared mostly with the nectar of a single plant species, as shown by the presence of majority of the pollen of the species in the honey.

Verrucate: Wart like structures with height \leq width and a normal base devoid of narrowing. Pollen exine surface ornamented with such structures.

Worker honeybee: Sterile female honeybees, majority in number of bee population in a hive and working for foraging, rearing juveniles and maintaining hive.