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Lecture Note

Historical Definitions of Horticulture

The term **horticulture** is derived from the Latin words *hortus* (garden) and *cultura* (cultivation).

Bailey (1858–1954)
"Horticulture deals with the cultivation of plants in gardens and nurseries, embracing the art and science of propagation, improvement, and utilization".

Loudon (1783–1843)
"Horticulture is that branch of gardening which relates to the culture of fruits, flowers, and esculent vegetables; or, more generally, the cultivation of plants in gardens, whether for use or ornament".

Anick (1986):
Defined horticulture as "the branch of agriculture concerned with intensively cultured plants used for food, medicinal purposes or aesthetic gratification".

Acquaah (2005):
Described modern horticulture as including "cultivating, processing, and marketing of fruits, vegetables and ornamental plants".

Current Definition:
A contemporary definition calls it "the science and art of cultivating, producing, marketing, and utilizing high-value, intensively grown food, and ornamental plants in a sustainable manner"

Branches of Horticulture

Branch	Description (Historical Context)	Quote/Reference (Scientist & Year)
Pomology (Fruit Cultivation)	Science of fruit growing, including propagation and breeding. Emerged prominently in 18th-century Europe for economic fruits like apples/pears. **Pomology:** Focuses on fruit crop production, including growing, harvesting, and postharvest handling. It involves the study of fruit trees, vines, and nuts.	"Pomology is the science of fruits... a noble branch of horticulture" – T.A. Knight (1801, *Treatise*, p. 1).
Olericulture (Vegetable Cultivation)	Intensive production of vegetables for market/home use. Gained focus in 19th-century U.S. with urbanization. **Olericulture:** Deals with the commercial production of vegetables, covering all aspects from growing to marketing non-woody plants for consumption.	"Olericulture deals with the culture of pot-herbs and esculent vegetables" – L.H. Bailey (1900, *Cyclopedia*, p. 147).
Floriculture (Flower Cultivation)	Growing flowers for cut blooms, ornament, or forcing. Tied to Victorian-era aesthetics. **Floriculture:** The science and art of cultivating flowering and ornamental plants for various uses, including breeding new varieties.	"Floriculture is the culture of flowers... for beauty and perfume" – J.C. Loudon (1822, *Encyclopaedia*, p. 456).
Arboriculture (Tree/Shrub Cultivation)	Management of woody ornamentals, including street trees and hedges. Emphasized in landscape design.	"Arboriculture treats of the culture of trees and shrubs in gardens" – B. M'Mahon (1806, *Calendar*, p. 12).
Landscape Horticulture (Garden Design)	Art of planning gardens, parks, and estates for aesthetic/functional harmony. **Landscape Horticulture:** Involves the management of plants for designing and maintaining outdoor and indoor spaces, often including arboriculture	"Landscape-gardening is the highest branch of horticulture" – J.C. Loudon (1822, *Encyclopaedia*, p. 1023).
Viticulture/Enology (Grape/Wine Cultivation)	Specialized fruit branch for grapes; ancient but formalized in 19th century.	"Viticulture is a division of pomology" – L.H. Bailey (1900, *Cyclopedia*, p. 678). (From

Branch	Description (Historical Context)	Quote/Reference (Scientist & Year)
	Viticulture: Specializes in grape cultivation for winemaking or fresh consumption.	EOLSS scan, dated to ~6000 BCE origins per Huxley, 1978).
Postharvest	**Postharvest Physiology:** A scientific study of plant tissues after harvest to maintain quality and determine optimal storage conditions.	

Branch	Classical Definition / Scope	Etymology / Notes on Origin
Pomology	The science of fruit (and nut)-crop cultivation — including physiology, cultivation, harvesting, orchard management, fruit quality, storage and improvement, breeding etc.	From Latin *pomum* = “fruit” + Greek/Latin *–logy* = “study.”
Olericulture	The science and practice of cultivating non-woody (herbaceous) vegetable crops — including seedbed preparation, cultivation, harvesting, storage, processing and marketing of vegetables.	From Latin *oleris* = “pot-herb/vegetable” + *cultra/culture* = “cultivation.”
Floriculture	The science of production of flowering and ornamental plants — cut flowers, potted plants, foliage plants — for aesthetic, decorative or commercial uses. This includes cultivation, handling, storage, marketing.	From Latin *florus* = “flower” + *cultra/culture* = “cultivation.”
Arboriculture	The cultivation, management, study and care of woody perennial plants: trees, shrubs, for shade, avenue, ornamental or amenity purposes in gardens, parks or urban landscapes. (	From Latin *arbor* = “tree” + *–culture*. (Standard in botany/horticulture classification of woody-plant care.)
Landscape Horticulture *(Landscape /*	The art and science of designing, planning and maintaining ornamental gardens, parks, landscapes, lawns, using plants (trees, shrubs, flowers, turf) for	The term emerges from combining horticulture with “landscape design / gardening” — institutional curricula rather than a classical author.

Branch	Classical Definition / Scope	Etymology / Notes on Origin
Ornamental Horticulture)	aesthetic, social, environmental, recreational aims — beyond just crop production. (	
Viticulture	Sub-branch of horticulture dealing specifically with grapevine cultivation and grape production (table grapes, wine grapes, raisins), including vine management, pruning, pest/disease control, harvesting — i.e. horticulture of grapes.	The name comes from Latin *vitis* = “vine” + *culture* = “cultivation.”
Postharvest & Value-Addition (Post-Harvest Technology / Physiology)	The branch concerned with what happens after horticultural crops are harvested: handling, grading, packaging, storage, processing, preservation, value-addition (like jams, juices, pickles etc.), marketing — aiming to reduce postharvest losses and extend shelf-life / add value.	This emerged as horticulture expanded from simply cultivation to **production + processing + marketing** — definition often given in modern horticulture textbooks / curricula rather than by a single classical scientist.
Plantation Crops	Cultivation of perennial, large-scale crops (often tree/shrub based) in large contiguous areas for commercial use; crops like coconut, coffee, tea, rubber etc.	Term used in horticulture classification to distinguish small garden-scale vs. large commercial plantations.
Spices Cultivation	Cultivation of plants whose produce is used as spices or condiments — for flavour, aroma, seasoning in foods (pepper, cardamom, nutmeg, etc.).	Conventional horticulture classification; term derived from use (spice/condiment) rather than classical Latin root.
Medicinal & Aromatic (Aromatic + Medicinal) Plants	Cultivation of plants used for medicinal properties (secondary metabolites: alkaloids, glycosides etc.) and aromatic plants yielding essential oils — for medicinal, pharmaceutical, aromatic or commercial use.	Branch arises with expansion of horticulture to include “economic plants” beyond food/ornament — standard in horticulture courses.
Bonsai / Ornamental-Specialized Cultivation	*Note:* classical horticulture schemes **rarely** list “bonsai” as a separate scientific branch. Bonsai is more a **technique** (miniaturizing trees in containers) within ornamental / arboriculture / floriculture or landscaping.	Not a distinct classical branch — hence no classical definition or original quoting scientist. —

Ikebana – What It Is

Ikebana is the **traditional Japanese art of flower arrangement**, focused on creating **harmonious, balanced, and aesthetically meaningful** compositions using flowers, leaves, branches, and stems.

✓ **Key Points:**

- **Origin**: Japan (over 600 years old)
- **Meaning**: "Ikebana" = **"living flowers"** or **"making flowers alive"**
- **Philosophy**:
  - Minimalism
  - Asymmetry (not symmetry like Western flower arranging)
  - Harmony between natural material, vase, and empty space
  - Spiritual practice of patience, mindfulness
- **Materials**:
  - Branches
  - Leaves
  - Flowers
  - Stems
  - Containers, kenzan (needle holder)

✓ **Main Schools:**

- **Ikenobo** – oldest
- **Sogetsu** – modern, creative
- **Ohara** – emphasizes naturalistic style

Ikebana	**Regular Flower Arrangement**
Minimalistic, symbolic	Decorative, fuller
Asymmetrical	Usually symmetrical
Focus on line, form, space	Focus on color and volume
Artistic/spiritual	Aesthetic/decorative

Terrarium or bottle garden

🌿 Terrarium

A **terrarium** is a **miniature garden** or **small, enclosed or semi-enclosed glass container** used to grow **small plants in a controlled micro-environment**.

Definition

A *terrarium* is a **transparent glass or plastic enclosure that houses small plants and creates a self-sustaining micro-climate by retaining moisture and humidity**.

Key Characteristics

- Made of **glass/plastic** containers: aquariums, jars, bowls.
- Maintains **high humidity**, suitable for moisture-loving plants.
- Functions like a **mini-ecosystem** (especially closed terrariums).
- Requires **minimal watering** because water recycles inside.
- Used for **ornamental, educational, and research** purposes.

Types

1. **Closed Terrarium**
    - Airtight container
    - High humidity
    - Suitable for ferns, mosses, fittonia, peperomia
2. **Open Terrarium**
    - No lid
    - Suitable for succulents, cacti (less humidity)

Uses

- Home/office décor
- Teaching ecosystems
- Conserving moisture-loving plants
- Studying micro-climate and nutrient cycles

🌱 Bottle Garden

A **bottle garden** is a **type of terrarium grown specifically inside a narrow-necked glass bottle**, often **fully closed**, allowing plants to grow with *very little maintenance*.

Definition

A *bottle garden* is a **miniature garden grown inside a glass bottle (usually narrow-necked), forming a self-maintaining ecosystem with recycled air, moisture, and nutrients**.

Key Points

- A **specialized form of terrarium**.
- Uses **bottles**: wine bottles, pickle jars, decorative bottles.
- Requires **careful insertion** of soil and plants due to narrow mouth.
- Once established, can survive for **months or years** without watering.
- Popular in **urban gardening, indoor decoration, teaching tools**.

How It Works

- Plants photosynthesize → produce oxygen.
- Water evaporates and condenses → returns to soil.
- Micro-organisms recycle nutrients.
- Creates a **closed-loop ecosystem**.

🌿 Difference Between Terrarium and Bottle Garden

Feature	**Terrarium**	**Bottle Garden**
Container	Any glass enclosure (wide or open)	Narrow-necked **bottle**
Ease of Planting	Easy	Requires tools due to narrow neck
Ventilation	May be open or closed	Mostly closed
Maintenance	Low	Very low
Suitable Plants	Ferns, mosses, succulents (open)	Small ferns, mosses, miniature foliage plants