Edible Houseplants

The reported human edibility of 1,264 plant genera, arranged alphabetically.

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Preface

All people eat. Most people embrace eating a diverse diet. Many people like research and writing. Fewer people share their learning through books. Until now, no one has arranged in one book a thorough account of those plants cultivated indoors and how people around the world have eaten them or related plants, or have *not* eaten them, or been poisoned by them. You're reading an original book.

Why and how this book was created

How I learned so much, and the way the book was written, is worth explaining. In the beginning, I didn't know the first thing about houseplants. The truth be told, I despised them. Then why did I write this book? Love is the answer. I love plants (I make my livelihood as a plant expert). I love research and writing. I love food and eating. After carnal pleasure, the joys of eating, drinking, and cooking rank very high in the list of great sensual pleasures humans can revel in. I feel a responsibility to share useful but under-known information. And food for people is a *fundamental need*. Finally, I confess that when I conceived the notion of this book, I didn't know how many plants were involved nor that the job would hog so much time. I guessed that I could finish within five years.

It started with a basic list of the common plant genera grown as houseplants. To do this, I looked at over 60 houseplant books. Then I added uncommon genera, and a selection of rare, very rare, and extremely rare genera. Not yet satisfied, I added some genera grown exceedingly rarely, and grown mainly or even only in conservatories and greenhouses, or used in interiorscaping, in aquaria, terraria, and as indoor bonsai. In my enthusiastic zeal, it seemed reasonable to also include some genera that are grown outside in the warm season, but kept indoors, containerized, to protect against winter weather. Like an addict, I sought more and more.

Just because a plant genus was grown rarely in the past, does not mean it is unworthy of being grown commonly in the future.

In describing the relative frequency with which a given genus is cultivated, I attempted to learn and share its overall level of rarity or commonness, not merely its status currently in the USA. Now and then, a given houseplant may be common in Europe, or Japan, but not in the USA. Many plants were once grown commonly but are now out of favor or fashion.

To compile this book, I visited 9 public libraries, took 22 out-of-state research trips, consulted over 2,600 articles, books, nursery catalogs, scholarly theses, and abstracts, which dated from the 1700s onward and ranged from dull and cumbersome to fascinating and lively. I used a relatively tiny number of online databases, blogs, and the like.

The approximate geographic breakdown of the references consulted was as follows:

Africa, Arabia & Madagascar	18%
New World	24%
India, Kashmir, Pakistan, Nepal	23%
SE Asia, Australia, NZ, *etc.*	18%
Temperate climates	17%

Many general books, such as those about global edible plants, toxic plants, or tropical horticulture, as well as botany monographs, were also consulted.

Chimpanzees and Bonobos *(Pan paniscus* and *Pan troglodytes)* are the extant primates related most closely to us "brainy chimps" called *Homo sapiens* (being classed in the same animal family *Hominidae,* sharing 99%+ identity at functionally important DNA sites, and even placed by some zoologists in genus *Homo),* so I also consulted 15 references that discuss the plants eaten by them, in the Congo (Zaire), Gabon, Uganda, and Tanzania.

I purchased over 90 books. I bought hundreds of plants to grow, familiarize myself with, and taste. I started in 2009–2010, and went to press in 2021. I could have easily spent more time adding data, but desired to stop at a certain point of diminishing returns. The drama and trauma of acquiring plants and information took a whale of a cost in time and dollars. While compiling the information, I had to earn a living, so the book was done in my spare time. I was thrilled to taste plants that were reported neither edible nor toxic, and discovered a few that tasted delicious and many that were *meh*, or bitter, acrid, astringent, or too fibrous and bland.

Unlike university academics, I had almost no access to costly restricted online scientific journal articles held by commercial enterprises such as Elsevier and Springer, so missed reading much writing of value. I did what one unaffiliated person could, part time, armed by pluck, rare focus, patience, and passion, unencumbered by dumb bosses, "publish or perish" idiocy, or deadlines.

Of the 1,264 genera in this book, I have personal experience with, and studied firsthand, only 600+ of them, and of those have tasted only about 414 of them and grown indoors over 175 of them. At this writing (March 2018), the house I live in contains only 111 plants. This book is thus mainly the *reported* human edibility of plant genera; if it was limited to my personal experience, it'd be far smaller. This book is not intended at all as a how-to guide, an identification guide, or to suggest what you ought to try to grow or eat. "Recipes" supplied are just for the sake of accurate and interesting reporting. During my study, I ate houseplants raw, boiled, fried, dried, made into liqueurs, and roasted. Some I was scared to sample. Some meals tasted heavenly, and others were inedible due to acridity.

Often, people in one region, or one age, ingest as food plants or animals that other people avoid. For example, some of us love bitter foods, but others don't. Many plants are eaten only in times of famine. Some foods appeal mostly to children. For the majority of humanity's existence, most individuals had to work hard to obtain enough calories and nutrition to thrive. All kinds of plants, fungi, and animals have been ingested as food: *if it moves or grows, eat it !* Only a percentage of that vast heritage has been put into writing. And I the researcher have had access to only a percentage of the available literature. Thus, this book is by no means the final word on the subject. It is a hefty report of what one student— I myself— found in 10 years of looking, growing, and tasting. The sunshine of learning pierced many dark clouds of ignorance.

Further exploration of genera *not* in this book . . .

For any genus not included in this book, I share with you the process I employed to determine any reported edibility. So if you desire to check about edibility of a genus not in this book, you can benefit from my advice on how to conduct a search yourself. (Please do not write asking me; do the search yourself!) To research the reported edibility of a genus, first make sure that you have a proper scientific generic name —rather than a common name. Confusingly, sometimes the proper scientific name is also a common name—for example: Camellia and Magnolia.

If you can use only one book to start with, best is the 2017 *Mabberley's Plant-Book*. Mabberley's guide often states whether a genus has edible species or not.

Numerous books cover edible plants. Most such books are local in coverage. In contrast is Günther Kunkel's 1984 book *Plants for Human Consumption*. Including over 3,000 genera, it superseded all previous global compendia, but nowadays has been replaced by online databases such as Food Plants International, which includes mushrooms. This *Edible Houseplants* book contains at least 275 edible genera that are not in Kunkel's book, but fewer than 40 not in Food Plants International at this writing.

When you have a correct generic name, then try looking, both in books and on the internet using search engines. If the genus is found much in parts of the world where English is spoken, you can do a search in Google® Scholar using the generic name and the word "edible." Also use Google® Books. If the genus is, however, in a place such as Madagascar where French is spoken, or Spanish, use "comestible" instead. If Brazilian mainly or wholly, use *comestível*. Also, try the word "ethnobotany," *(ethnobotanique,* or *etnobotánica, etnobotânico).* And if there are alternative generic names indicated in Mabberley's book, search also those names. You may also need to employ Google® Translate to decipher the results of your search.

To locate comprehensive, accurate data in this subject, one *must* use both printed sources and digital. Internet searches are needed, but large university libraries also supply valuable data *not* revealed using the web. Try to visit libraries strong in holdings of botany, horticulture, and anthropology, archaeology, and ethnobotany (Library of Congress subject subclasses **QK**, **SB**, and **GN**, respectively)

A few genera that I ignored, but that *could* have been added if I desired to spend yet more days researching:

Anemopægma
Annona
Arundo
Cistus
Gyrocarpus
Humulus
Libertia
Limonium
Macadamia
Paullinia

These and others left out are as worthy of inclusion as some that were permitted in the book. Being thus inconsistent does not bother me, because the book has far more genera than any reader could expect or desire in such an undertaking. If I had *not* stopped adding more genera, I would never have finished the book. Obscure, small genera I can check thoroughly in a few hours; a large genus with many edible species takes days.

There are also genera not grown as indoor ornamental plants, yet are edible, and may prove valuable as indoor food sources. For example:

Amaranthus
Calandreinia
Commelina
Durio
Faidherbia
Limonium
Litsea
Parietaria
Polygonum
Rumex
Tetragonia
Toona
Trichanthera

Have you ever had to chew undercooked pasta? A most unpleasant experience! Even so, I desired to compile this book without a deadline, in order to "cook" or polish it adequately. Yes, had I spent still more time on it, I would have improved it. As it leaves my hands, I know that even while it is still at the printing press, I shall think of something I could've and should've corrected, added, or improved. Such is life. In the same way that even Earth's most beautiful women wish they were in this or that way "improved," so each writer desires his or her book to be better.

Final words

To get inspired sufficiently to change longtime habits, and to try new and unfamiliar things, is often uncomfortable. On the other hand, the rewards of learning about, trying, and finally embracing an entire new realm of food possibilities, excite those of us who relish adventure, and desire to expand our lives. I hope to expand your life. May you take solace from the gentle, calming influence of gardening, and in consuming wholesome food; may you wiggle with joy upon tasting new flavors. I consider this book my most valuable gift to humanity. Since I am not a parent of children, this book is my "child." Raising either plants or children, adults get exasperated, tired, dirty, and harvest a sumptuous mix of sorrow and joy.

Introduction

Pure scientific inquiry is, at least ideally, dispassionate and unemotional. In contrast, pure art, such as opera, is devoid of the strictures of logic, reason, and technical vocabulary. Gardening, whether indoors or outdoors, *combines* art and science. This edible houseplant book is limited to cultivated plants. Accordingly, this book offers a blend of pure, solid facts enlivened with a varying "seasoning" of passion, fun, titillation, humor, and amusement.

This book has idiosyncrasies and quirks to note. First, since I was born in Seattle and am a lifelong USA resident, the book has that perspective and intended readership. Thus, I use feet (') and inches (") rather than the metric measurements. Second, the term "houseplant" in the title is used in the broadest possible sense. The book is not limited to common living room houseplants. Preferring the most comprehensive and inclusive approach, it includes plant genera used in the following:

- apartment balconies
- florists' potted plant offerings
- forced bulbs in pots
- home conservatories or atria
- houseplant settings
- indoor bonsai
- interiorscaping
- terraria, aquaria, riparia, & vivaria
- under grow-lights and the like
- windowboxes

The final result is an inclusive, detailed reference work on reported edibility of most plants containerized and grown indoors.

The book mostly does *not* deal with the following:

- Annual vegetables of temperate zones, such as lettuce, or their seeds when sprouted in the kitchen to consume.
- Herbs of temperate zones, such as dill, sorrel, and tarragon.
- Hybrids of genera, many of which are in the orchid family.
- Florists' imported foliage, if from species not cultivated indoors, such as *Baloskion tetraphyllum* (Dingo Tail), *Brunia*, *Cannomois virgata* (Rekoala Grass), *Caustis Blakei* (Koala Fern), *etc.*
- Various plants cultivated very *rarely*, and limited mostly to greenhouses.
- Fungi, such as edible mushrooms, except a few lichens used in terraria.
- Rooftop garden and exterior green wall species not *also* grown inside.

The result of my choice of what to include / exclude is the great size of the book. Its depth and completeness will shock readers who *guess* about the content just from its title *Edible Houseplants*. It is fascinating to learn how what we think of as "ornamental plants" in the USA can elsewhere be vegetables, spices, or edible fruits. Even if you have no interest in houseplant growing, knowing the edibility of outdoor garden plants is valuable. Depending on what region or climate you reside in, more or fewer of your outdoor plants will be included in this book. *Most* houseplant genera contain edible species; depending where you live, most of your outdoor "ornamental" plant genera may contain edible species.

What this book tells you

For each of 1,264 genera included, this book supplies the family name, the number of species, the distribution, and climate ranges of species globally; what kinds of plants the species are; the species' role as houseplants or as grown otherwise in containers indoors; the English name(s); and of course, any reported edibility. One or more of the species (or a hybrid) is described for you in plain English using minimal technical jargon and maximum lively writing. For some but not all genera, the book explains the meanings of names; cites related genera; supplies line drawing illustrations; provides notes on taxonomy, propagation and pollination, cultivation, and other economic usage; and offers enlightening quotes—whatever seems *interesting*. The selection of vernacular or common names is strong only in names used by English speakers. This book supplies a tiny percentage of non-English common plant names.

Plant names: families, genera & species

A plant **family** is a group of related genera. Over 470 plant families exist; this book has 227. A plant family can have only one genus or many. Earth's 12 families with the most genera are as follows.

COMPOSITÆ (ASTERACEÆ) (Sunflower family)	1,568
ORCHIDACEÆ (Orchid family)	762
GRAMINEÆ (POACEÆ) (Grass family)	752
LEGUMINOSÆ (FABACEÆ) (Pea family)	741
RUBIACEÆ (Madder family)	576
UMBELLIFERÆ (APIACEÆ) (Carrot family)	431
APOCYNACEÆ (Dogbane family)	345
CRUCIFERÆ (BRASSICACEÆ) (Mustard family)	343
LABIATÆ (LAMIACEÆ) (Mint family)	240
MALVACEÆ (Mallow family)	229
EUPHORBIACEÆ (Spurge family)	214
ACANTHACEÆ (Acanthus family)	202

A **genus** consists of related **species**. It can contain only 1 or many species. Earth's plant genera with the most species are as follows.

Astragalus (not in this book)	3,036
Piper	2,171
Bulbophyllum	2,094
Begonia	2,001
Carex	1,997

A family or a genus can have either a relatively low or high percentage of edible members. A well-stocked USA grocery store will offer likely fewer than 100 genera of "fresh" produce and fruit, albeit additional genera are found canned, dried, pickled, powdered, or rendered into spices, oil, syrups, flours, teas, and so forth.

Scientific plant names can be simple or complex. *Quercus rubra* (red oak) and *Pinus nigra* (black pine) are simple. At the other extreme is a cactus encumbered with 18 syllables: *Echinocereus arizonicus* ssp. *nigrihorridispinus* (Arizona cactus with black, especially horrible spines).

Lumping and splitting

Regarding scientific plant names, some scientists use a broad or "lumping" approach, while others prefer a narrower or "splitting" view. This is one reason why it is inaccurate to state—as is done

often—that only one scientific name is correct for a given plant. This book supplies ample historic and alternate names, so whether the reader searches for a plant under one name or another, he or she can find it. Alas!—academic plant taxonomists often change names that gardeners have grown familiar with. In this book, I mostly let scientists have their way; sometimes I give the lay public a break. However, in all cases of wiggle room or uncertainty about lumping, splitting, and rearranging that I'm aware of, I indicate as much. Fairy tales commonly end with people living happily after. But in real life, new facts, conflicts, mistakes, ignorance, disagreements, and whatnot occur, therefore plant names are *unstable*. Similarly, some plants have their edibility or toxicity contradicted by varied authors. It can be difficult to remain patient.

Diacritical usage and pronunciation

In scientific names, I diverge from the international standards in several respects. This may raise hackles. I don't care. Ligatures **æ** and **œ** are used as well as diaereses. Why? Because plant names mispronounced annoy me. The proper pronunciation of *Lagerstrœmia* is LAG ER STREE ME UH, as indicated by the œ which denotes a silent o, just like in œcology, Phœnix, or diarrhœa. And *Alstrœmeria* is AL STREE ME RI UH. However, *Aloë* is not AL EE but rather AL OH EE. *Elæagnus* is E LEE AG NUS, not E LUH AG NUS. That said, since scientific names are pronounced differently in North America, England, and continental Europe, a case is made that there is not only one correct pronunciation. But informed ladies and gentlemen do *not* pronounce silent letters.

Most scientific names, also called botanic names, are Latin, Latinized, or Greek, but they can be in any Romanized language. *Hoya* was named after Thomas Hoy of England, *Magnolia* was named after Monsieur Pierre Magnol of France, *Fuchsia* after Herr Leonhart Fuchs of Germany, and *Washingtonia*, after President George Washington. *Jacaranda* is from a Brazilian common name of the tree. When a plant is named after a person directly, the ideal way to pronounce it, is just like the person himself or herself would, adding the appropriate suffix such as *ia*, *iæ*, *ie*, or *ii*.

Alternative family or generic names are duly cited and cross-referenced. For species, much-abbreviated names of the scientists who applied the names—*named the plants*— are supplied. Ugly to readers, this is needed for precision.

Unlike "family" and "genus," the word "species" is singular *and* plural, but the abbreviation **sp**. refers to one species and **spp**. refers to more than one.

Some readers may think I've been too heavy-handed by citing so many scientific name synonyms, with all their small print, abbreviated author names. My rationale is this: when discussing edible or poisonous plants, *certainty* is to be aimed for. For example, take *Allium senescens;* this one species name has been applied to six different species:

L. 1753	***A. senescens*** (the original)
Th. 1784	= *A. Thunbergii*
Suter 1802	= *A. angulosum*
Ker Gawl. 1808	= *A. spirale*
Host 1827	= *A. lusitanicum*
Miq. 1867	= *A. ramosum*

To not supply author names for plant names is like not doing so for authors of books. Unfortunately, many "reputable"

books, nurseries and blogs use *inaccurate* plant names frequently, whether the creators know it or not. And whenever I become aware of their ignorance or deception, I call it out to warn the reader. A good example is the Latin **hort**. abbreviation (meaning *hortulanorum;* of horticulture or gardens; not botanic science) following a scientific name. This refers to "nursery Latin:" names either applied incorrectly by gardeners, or names made-up by them.

The genera in this book

This book includes 1,264 genera, arranged alphabetically. Whether they are edible, toxic, or neither, they are included. Inclusion of *non*-edible genera in this book is a marked departure from the norm. It is a valuable addition because the reader can learn which genera are grown indoors, and whether they are reported edible, toxic, or neither. To silently ignore and omit genera not reported edible would leave the reader wondering about their status. With this book's approach, instead, any genus apt to be looked for, *will* have an account. And even if a genus is not reported edible, there is accurate, helpful information about it, such as if it is related closely to edible genera yet has no toxic near relatives. In some cases, such information supplied suggests that a given genus is well worth careful *testing* for edibility.

Whether a genus is rich or poor in usefulness, common or rare, beautiful or plain, grown easily or not—all are included. Of these genera, 78½% have been reported edible as noted by other writers, and I have found some genera edible in my testing (such as *Alluaudia*, *Hatiora*, *Leucocoryne*, and *Ruttya)*, so the percentage is yet higher. I did not count a genus as edible if *only* bee honey made from its flowers is eaten as food. The Gesneriad Family drags down the edible percentage. Of those families that this book includes with at least 9 genera, the percentage of genera with edibility reported is as follows:

GRAMINEÆ	13/13	100.00%
ARALIACEÆ	11/11	100.00%
EUPHORBIACEÆ	9/9	100.00%
PALMÆ	34/35	97.14%
RUTACEÆ	15/16	93.75%
PTERIDACEÆ	12/13	92.30%
ARACEÆ	34/37	91.89%
LEGUMINOSÆ	54/59	91.52%
ZINGIBERACEÆ	10/11	90.90%
CYPERACEÆ	8/9	88.88%
APOCYNACEÆ	30/34	88.23%
MYRTACEÆ	15/17	88.23%
ASPARAGACEÆ	35/40	87.50%
IRIDACEÆ	13/15	86.66%
MALVACEÆ	19/22	86.36%
LABIATÆ	27/32	84.37%
BIGNONIACEÆ	10/12	83.33%
CACTACEÆ	55/66	83.33%
ACANTHACEÆ	23/28	82.14%
RUBIACEÆ	25/31	80.64%
MELASTOMATACEÆ	10/13	76.92%
COMMELINACEÆ	8/11	72.72%
BROMELIACEÆ	18/25	72.00%
CRASSULACEÆ	10/14	71.42%
POLYPODIACEÆ	10/14	71.42%
COMPOSITÆ	26/37	70.27%
SOLANACEÆ	14/20	70.00%
HYDROCHARITACEÆ	6/9	66.66%
AMARYLLIDACEÆ	14/25	56.00%
PLANTAGINACEÆ	7/16	43.705%
AIZOACEÆ	12/26	46.15%
ORCHIDACEÆ	31/80	38.75%
GESNERIACEÆ	12/32	37.50%

Certain genera cultivated most commonly outside, are nonetheless in the book, such as: *Allium, Anemone, Camellia, Campanula, Carex, Clematis, Cotoneaster, Crocus, Daphne, Fuchsia, Gladiolus, Iris, Lobelia, Narcissus, Pinus, Potentilla, Primula, Rhododendron, Salvia, Sedum,*

Sequoia, and *Viburnum*. Every one of those genera has species eaten by people.

Regarding specialist collections of large families, notably the cacti and orchids, I chose arbitrarily to include only 66 cactus genera and 80 orchid genera. Plenty more are cultivated indoors by enthusiastic collectors.

The genera in this book with the most species cited as edible are:

Solanum	231
Acacia s.l.	221
Allium	214
Dioscorea	189
Eugenia	172
Syzygium	161
Garcinia	136
Diospyros	132
Ficus *	128
Begonia	121
Inga	114
Salvia	104
Piper	96
Grewia	94
Ipomœa	90

* *Ficus* would be highest of all (300+), but I ignored recording its species of which *only* the fruit is eaten—because potted fig trees inside usually don't fruit.

Poisonous plants ☠

Plants are accustomed to being munched on by animals, and many have adapted self-defences, such as lectins (akin to animal venoms), much hairiness or fuzz; barbs, prickles, thorns, spines; waxy, shell-like hardness; extreme bitterness; stinging or burning substances; and horrible odors. This book contains profuse data on dangerously toxic—even deadly—plants. Plant edibility is intertwined in a 100% continuum with plant toxicity. Just like shrubs and trees, good and bad, and hot and cold. Plant genera frequently contain both toxic and edible species. People may think a given plant is either edible or not, but it's *not* that simple.

Unlike other animals, clever humans *detoxify* plant foods often. A main famine food of east Asia is the Asiatic Bitter or Intoxicating Yam, whose tuber must be sliced thinly, soaked in saltwater 3 days, next put in a sack and placed in a river for days, before being boiled to eat. Some scientists think a contributing factor to the demise of the dinosaurs 66 million years ago was plants evolving toxins so rapidly that dinosaurs were too dumb to stop ingesting them. Moreover, we humans even are thrilled to consume various toxic plants, such as fermented *Vitis* juice (Grape wine), *Cannabis* (Marijuana), and *Nicotiana* (Tobacco). In moderate use, such plant toxins make our hearts merry, lighten our loads, and induce sweeter dreams. Bottom line, this book is full of plant genera that are *also* found in poisonous plant books.

The best part of this whole undertaking was the eye-opening revelation that a significant number of toxic plants can be, if harvested at the right time and prepared the right way, rendered into wholesome food. Yes, the exact same plant, depending on precise *details* of its ingestion, can be healthy or deadly upon ingestion. And if that was not enough, there are personal allergies so that one person is hurt by plants that do not bother most people. Plants containing pyrrolizidine alkaloids can taste delicious, be very nutritious, and their ill-effects be not noticed until the consumer has eaten quantities for a long time. In a word, it's complicated.

Abdel-Fattah M. Rizk: "In view of the large distribution of carcinogenic risk factors of natural and synthetic origin in the human environment and in the human diet, absolute safety is, in fact, non-

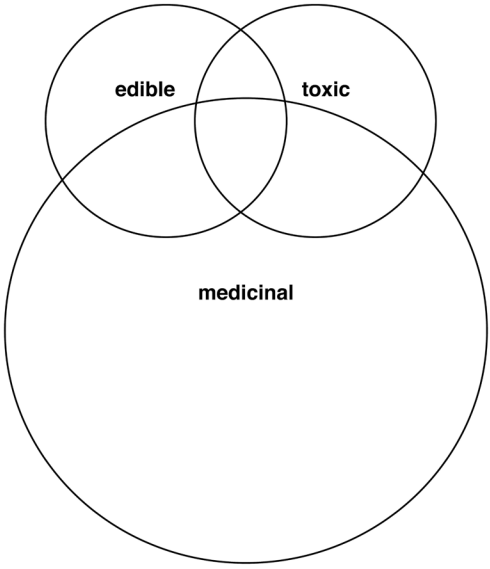
existent. . . the human diet also contains many natural antimutagens and anticarcinogens."

Plant edibility defined carefully : The plant has one or more parts that can be eaten as human food if gathered at the appropriate stage of growth, prepared properly, and ingested in a safe quantity.

I am just a reporter for you ; the application of the information herein is wholly out of my control. Accessing the profuse plant data presented in this book, intelligent and discerning readers such as yourself will doubtless benefit. Even of you are not *very* interested in the subject, this book is a serviceable doorstop, or can lull you to sleep. But if they read this book, fools, knaves, and scoundrels may cause mischief.

Many foods are also medicinal, and have been termed functional foods, health foods, pharmafoods or nutraceuticals: coffee and tea, for instance, or eating prunes as a laxative. In some cases, people eat the food mostly for flavor or calories, with incidental health benefits; in other cases the food is ingested mainly to ease bodily problems such as constipation. Likely most plants ingested as spices and *via* infusions or teas, are of this category, inasmuch as their caloric value is miniscule. The safe edibility of certain plants is limited severely, such as a small amount used as a spice or flavoring in a liqueur. Rosemary, for example, if eaten in excess, is toxic. Some plants harmless to people can poison pet dogs. A good example is Chocolate *(Theobroma Cacao)*. Lilies *(Lilum)* are toxic to cats.

Some plants edible in a technical sense really *ought not* be grown indoors, since a curious child, or neurotic pet, cannot be expected to know that ingestion can be dangerous. Reader, beware ! God forbade Adam and Eve from eating a certain fruit. They ate it anyway, thereby causing trouble. Dear reader, please heed my caution notes and do not act carelessly with the data in this book.



Dietary preferences

Both cultural and individual dietary tastes vary. Not only the liking or disliking of flavors, but in some cases a bodily ability or inability to digest certain foodstuffs. Individuals vary in how many taste receptors exist on their tongues. That means each person's dectection of bitterness or spiciness is unique. Certain strong-flavored foods elicit a physiologic rejection from sensitive individuals. Think of horseradish, hot chilies, blue cheese, cilantro, Brussels sprouts, and beets. That said, a person can first dislike a food, yet gradually acquire an acceptance, then even a liking for it. Many North American residents are content to imbibe bitter coffee, chocolate, beer or liqueur, but dislike bitter vegetables and fruits such as dandelion greens, bitter melons, and the like. Bitter foods are

healthy, and to associate bitterness with "yucch" is to preclude many nutritious, diverse foods. Then there is the matter of *preparation*. A food can taste or smell very different depending on whether it is consumed raw, steamed, blanched, boiled, baked, fried, stewed, or fermented. Finally, "hunger is the best sauce." Starving people eat things they would not touch otherwise. This book has many plants that most people will find foul-tasting. But some people, in some places, in some times, ate them.

Growing plants inside

Just as a person can make us fall in love at first sight, so do certain plants we see for the first time, seem to shoot affection charms right into our hearts. Alas, keeping the beloved new plant content in your home can be as hard as maintaining an intimate relationship with another human. It's easy to err and cause stress and sadness. In a way that recalls how some people love big city life, while other people desire or need rural quietude, it seems that certain plants can live in containers indoors, while others protest mightily, yearning to be outside and free like an animal that cannot be tamed. The patient, experienced, and skilled human grower can often make indoors life delightful for his or her pet plants. On the other hand, the inexperienced, harried human can barely even keep "tough" houseplants alive. Many detailed, superb written accounts direct how to grow plants indoors successfully. Whether a plant genus is easy or difficult to grow inside, has zero bearing on whether or not it is included in this book. Someone should write a book about foolproof edible houseplants.

What genera, species, or hybrids thrive *indoors* depends on a multitude of factors: latitude, elevation, climate, air temperature (both day *and* night), water characteristics, air humidity, light level, soil mix, and the skill, dedication, and ability of the grower. Indoors can be a hotel lobby, a skyscraper bedroom, a steamy greenhouse, an RV, an orbiting space station . . . making the number of variable factors daunting to consider. I find that any given plant seems to "care" most about one factor or another. For example, some need moisture above all (aquatic plants), some need light and aridity (desert plants), some need warmth (ultra-tropical plants), some are weedy—even inside buildings. And so forth. Some hit the ceiling quickly, and are forced to grow sideways. So, often I tell you this sort of thing, in case you care to try growing a genus indoors. Having "a green thumb" can boil down to one's ability to recognize and provide for a plant's "comfort zone" as regards light level, temperature, humidity, and soil.

If a person's care for a potted plant is limited to watering it now and then, when he or she remembers to, how can much food be produced? Whereas given the *ideal* location, soil, fertilizer, pest control, and temperature, the same plant will grow bountifully, look better, and produce much. That said, some plants such as pineapples and bananas are inefficient because growing your own requires so much space and time relative to buying their fruit at the grocer. Some plants flower inside but fail to set fruit unless the gardener hand-pollinates them.

Farmers vary the crops they raise according to region in an effort to ensure the best yield. Likewise, indoor plant growers should also try to acquire the best plants for their location, and ideally even their seasons. It's easy to grow gin-

ger roots in a house, but a pain to grow your own chocolate or vanilla without a greenhouse.

A useful generalization is: tropical plants that never rest, and grow all year, are apt to outproduce temperate plants which need a yearly rest period. Each species comes from a climate that is temperate (frosty winters), subtropical (frost occurs rarely) or tropical (never frosty). It is easier to grow a tropical plant in a heated temperate-region building, than to grow a temperate plant in the tropics.

In short, as plants are accustomed to variously sweltering tropical jungles, baking deserts, misty, beautiful moors, bogs or swamps, and whatnot—so they therefore need *diverse* growing conditions indoors. But if you can scramble eggs for breakfast, or capture a spider alive in your house to release outside, then you have sufficient IQ to grow houseplants —at least the non-demanding sorts. And you can prune and use in your kitchen the excess growth of many. Extra credit if you conserve species rare or endangered in the wild, by growing them inside. For example, most tree species in Madagascar are threatened with extinction in the wild. Some can be grown as edible houseplants.

Pesticides

Insects and fungi work 7 days a week without vacations. Plant growers *must* react to the injurious ones, one way or another. Most plants sold as houseplants are intended as ornamentals, not food. So, government regulations permit various obnoxious, even cancer-causing, growth retardant sprays and pesticides not usually allowed on food crops to be used on nursery plants. These can include herbicides, fungicides, and insecticides. Chlorpyrifos, a organophosphate pesticide that can cause birth defects, brain damage, and mental disorders in children, has been sprayed on more than 50 fruits, vegetables, and nuts! The EPA banned it finally effectrive 2022. If farmers and nursery growers do not employ pesticides—organic or not— then often bugs, fungal disease, or some other plague renders their crops unsalable. When buying a new plant, I wait 2 or 3 months before tasting it, and try new growth only, hoping that by then most of the pesticide residues will be broken down. If you grow food, indoors or out, you can do so organically and safely; chemical sprays are not the only solution to problems—with very few exceptions. Someone should start a nursery that specializes in edible houseplants grown organically, next door to a restaurant whose meals feature some of the plants grown.

Raising food inside

Despite the manifold joys and riches afforded by the goddess Flora, for those people who live in an apartment and have no access to land outside, it is ideal to *also* raise edible insects such as mealworms, or keep Guinea pigs inside, enabling denser caloric return, with more protein and fat. Most livestock raised can digest cellulose more efficiently and ingest easily many plants that humans find unpalatable, including our "kitchen scraps." Studies in China report that certain silkworms will eat not only mulberry but other leaves, and the silkworms themselves grow rapidly, taste good, and are very high (±60%) in protein. The human-essential amino acid content in silkworms is two times higher than in pork and four times than in egg and milk. Silkworm pupae yield good taste, complete protein, and

abundant fatty acids. If eating insects makes you squeamish, trapping squirrels or rabbits is also a more efficient way to feed yourself.

To achieve maximum food security, to boost health and secure reliable availability, people should acquire skill in both home growing (inside and out); keeping chickens; tending honeybees; and foraging, fishing, and hunting outside. A society that delegates the vast majority of its food supply and distribution to specialists, has gone wrong. Those of us out of touch with obtaining and cooking fresh food, can learn to change our ways, and later assist others when the globalized, hi-tech supply system falters. "In recent centuries humans have focused on relatively few plant species with the result that 80% of total dietary energy intake, globally, is obtained from 12 domesticated species: 8 cereals and 4 tubers."

Plant identification

If you have a plant and desire to learn of its reported edibility, first identify it. Then you can read about it. Expert plant i.d. skills are uncommon, and are decreasing. Guessing or approximate, or inexpert i.d., is frequent, however, and better than nothing. So begin by asking around.

The merits, ease, and productivity of plants vary big time. This book includes the entire plant spectrum from "losers" to "superstar" species. Of course, each reader would prefer a book that dealt only with his or her unique growing conditions, and that included edible ornamentals that grew outside as well. The current book is so weighty, and filled with so many rare or less valuable plants, that it can be faulted as clumsy overkill. It is a compendium that can help a range of readers, from those of a casual interest to professionals. There is *no room* to also make it a plant identification guide.

The fact that one cannot use this book as an identification guide brings no apology from me. Five houseplant books with many genera, and also well-illustrated, are:

RHS Encyclopedia of Houseplants
(Beckett 1995)
ca. 1,000 genera

House Plant Expert I & II
ca. 500 genera
(Hessayon 2004, 2005)

Houseplant Encyclopedia
ca. 500 genera
(Jantra & Krüger 1997)

Ortho's Houseplant Encyclopedia
ca. 400 genera
(1993)

Encyclopedia of Houseplants
ca. 300 genera
(Vermeulen 1997)

Websites or smartphone "apps" may help identify plants, but I have paid no attention into searching for or testing such things.

Acknowledgments

I relied upon thousands of writers and scholars for written information. Their broad classes are:

Anthropologists, who study of how different peoples live or lived;

Archeologists and Paleothnobotanists, who study ancient, usually buried human remains, including fossils, preserved plant material, coprolites, and charred food remains;

Botanists, scientists who study plants in general, sometimes incidentally with remarks upon edibility;

Ethnobotanists, interested in the specific uses of plants in particular cultures, mostly contemporary;

Food foragers, contemporary enthusiasts share their observations and findings in books and blogs;

Nutritionists, engaged in the scientific study of what people eat, and how and why, and the health effects of dietary choices;

Plant growers, both professional and amateur nursery growers and gardeners share lively accounts of their experience raising plants, in articles and catalogs;

Zoologists, scientists who study animals in general, some of which, such as chimpanzees, are related very closely to humans.

In this book I have compiled and shared with you some of their many findings. We ought all be grateful to these writers. In our age, traditional plant lore is decreasing, being now limited largely to middle aged and older adults. Many more people than earlier, suffer "nature deficit disorder."

All primary authors are cited in my bibliography. Some authors are cited by name in my text, others are quoted directly or paraphrased uncredited, especially if I use only a sentence or fragment thereof.

Various people, whether friends or strangers, librarians, colleagues, and curators, assisted me by answering questions, permitting access, hosting my research trips, or obtaining publications for me. Some also made suggestions on my writing. Listed in alphabetical order, these people include: William R. Anderson, David Arbegast, Daniel Austin, Lacia Lynne Bailey, Mike Bourke, Ron Brightman, Thomas F. Daniel, Charles Davis, Susan Eubank, Doug Ewing, Chris Fraser-Jenkins, Jean Gauthier, Keala Hagmann, Andrew Kirsh, Michael Lee, David Mabberley, David Middleton, Kathy Musial, Dick Olmstead, Sairus Patel, Keith Possee, Cindy Riskin, Matt Ritter, Warren Roberts, Jeffrey Ross-Ibarra, Ernesto Sandoval, Charlie Schackleton, Rudi Schmid, Jonathan Schwartz, Brian Thompson, Cindy Yeh, and Peter Zika.

This book is much better due to their help. My appreciation is heartfelt.

In fairness, I owe a debt also to plant genera responsible for beer and wine: *Hordeum*, *Humulus*, and *Vitis*. Some of the juiciest sentences in this book were inspired by Bacchus or beer. In addition to drinking alcohol temperately, I owe gratitude to music I love, family and friends. Friendship doubles joy and divides grief. Unlike plants, both music and people can bring tears of joy to my eyes.

Abbreviations and Signs

Used with plant names

affin.	allied to, akin to
auct.	*(auctorum)* authors of plant names
cf.	*(confer)* akin to or like this species
f.	*forma* ; a trivial variant of a species
fil.	*(filius)* son
hort.	*(hortulanorum)* of horticulture or gardens; not botanic science
nom. illeg.	*(nomen illegitimum)* illegitimate name
nom. nud.	*(nomen nudum)* invalid name due to no description
non	not (used when botanists or horticulturists *misapply* names)
p.p.	*(pro parte)* in part, but not wholly
sensu	in the sense of
s.l.	*(sensu lato)* in a wide sense; a broad view of a species' limits
s.s.	*(sensu stricto)* in a strict sense; a narrow view of a species' limits
ssp.	subspecies ; a major race of a species
stat. nov.	*(status novus)* a new name combination
var.	*varietas* ; a minor race of a species
×	sexual hybrid

Used generally

æ	indicates a silent a (as in Julius Cæsar)
C	central
ca.	*(circa)* about
E	east or eastern
e.g.	*(exempli gratia)* for example
et al.	*(et alia)* and other authors
etc.	*(et cetera)* and others
i.e.	*(id est)* that is or namely
N	north or northern
œ	indicates a silent o (as in Phœnix)
S	south or southern
sp.	species (singular)
spp.	species (plural)
vs.	versus ; compared with
W	west or western
?	possibly
'	feet
"	inches

Plant group general articles

The bulk of this book is its 1,264 **A** to **Z** generic accounts. Below, are brief introductory remarks on 31 general plant groups that consist of multiple genera.

Air plants (epiphytes)

These plants grow perched on rocks, cliffs, or trees rather than on the ground. Some adaptable plants can be either epiphytic or terrestrial. The best known genus is *Tillandsia*, but many other bromeliads, ferns, mosses, and orchids are air plants. Even some cacti and a potato relative are! They vary so greatly that it is not fair to generalize about them. In rotting holes of apple tree trunks and maple trees in Seattle, I've seen growing wild clumps of chives, cyclamen, and strawberries. Epiphytes are not parasites and do not rob their host tree of nutrients. Indoors, they are put on corky bark, or coconut husk "bricks" or the like. Some rot and molder if planted in pots containing soil.

Aquatic plants

People with an aquarium, paludarium, riparium, an indoor pond, a sopping wet terrarium, or who in some way provide enough humidity, can grow indoors aquatic, semi-aquatic, and moisture-needing plants. These are plants that more or less cannot drown. Some need to be submerged, some just like wet roots, many are intermediate. Aquatic plants can be easy or difficult to cultivate. You certainly cannot overwater them. They can be tropical or tolerant of freezing. It is curious that relatively few such plants are notably toxic.

Mangrove trees are not beautiful, not grown easily in general and, grown indoors, their long dangling roots can hang clumsily to the floor. Mangrove trees are not very edible, but they are of supreme importance ecologically, and of high interest to the few people who do grow them indoors.

Some people like the idea of growing plants indoors, using no soil, a method called *hydroponics*. This can be either simple (low-tech) or energy-intensive, high-tech, and suitable for skyscrapers and spacecraft, but is not a subject that I have studied.

The present volume includes only the more common aquarist plants, perhaps 50 genera ranging from mosses and algæ to water lilies. There are hundreds of species suitable, and rarer genera are sold by sources that sell aquarium supplies. With the proper set up, *much* plant food can be produced in water systems.

Aroids

Of 128 genera and about 6,000 species (many undescribed), the ARACEÆ (Arum family) are represented in this book by 37 genera, only 3 of which are not reported edible. But there is a catch: most are unpalatable if not injurious in the raw state, and must be processed by various methods to be rendered wholesome food.

Virtually all aroid species are protected by calcium oxalate crystals that irritate people's mouths and throats. The pain can be soothed by sugar, or lime juice. The plants vary in whether they like sun

or shade (most), are evergreen or not, aquatic or not (most), and cold-hardy or tropical (most). But nearly all genera are forest dwellers with darkest green leaves, and bear their flowers in a tight mass of tiny florets packed into a corncob-like spike, shielded by a big leafy bract called a spathe. Imagine a skunk cabbage, a peace lily, or flamingo flower. The flowers of many aroids smell, sweet or foul depending on the pollinators being attracted. Earth's largest flower is an aroid: *Amorphophallus titanum*. Its leaf can reach 20' × 15' and floral organ to 12' high; its (edible) tuber can weigh 160 pounds. The most important aroid food species is taro *(Colocasia esculenta)*, a staple crop of the tropics cultivated for 10,000 years. Many aroids are among the easiest, most beautiful, and common indoor plants. No other plant family is more valuable economically for ornamental indoor plants.

Balcony & window-box plants

Certain plants can be outdoors for part or all of the year, are confined to containers, and can qualify as "houseplants" to the extent that one's dwelling has a window that opens—or a balcony better yet. A large percentage of plants, if they had their choice, would prefer to be outside in the summer and kept sheltered during the cold, wet winter ("snowbird" plants). Both the exposure of the window or balcony, and the attention given by the gardener, determine what plants are easy or worthwhile in such settings. This book includes a few genera well suited for such cultivation that would not endure if kept inside a house all year. For example: *Ageratum, Chamæcyparis, Pallenis,* nearly all *Pinus* spp., *Tamarix*, and *Tigridia*.

Bromeliads

Pineapples are the best known of the bromeliad family plants. Almost all New World plants, BROMELIACÆ are herbaceous or shrubby, their leaves spiraling, usually tough and fibrous; often cupped to catch rain. They grow in tropical to subtropical regions; extremely few species tolerate frosty winters. Of the 25 bromeliad genera in this book, 18 (72%) are reported edible, and certainly other genera are nontoxic and could be eaten safely if they had the appeal. Many genera are epiphytes, and difficult to obtain from their perches on trees or cliffs. Many bromeliads are small, and offer little food. Usually, the fruit (borne indoors rarely) or inner stems or tender leaf bases are consumed. Two genera of promise for indoor edibility are *Bromelia* and *Tillandsia*. Bromeliads in general are easy to grow indoors, *if* given adequate light, soil, and humidity. Some get too large, or are armed with viciously sharp spines that are a hazard. A few genera are prized for the leaves more than their flowers. *Æchmea fasciata*, the Urn Plant, Living Vase Plant, or Silver-Vase Plant, is the most popular, common, and easiest bromeliad houseplant.

Bulbs and similar organs

Most of us visualize bulbous plants as perennials that we plant in autumn, as dry, leafless things, trusting that come spring they will grow fresh leaves and lovely blossoms. "Plant bulbs, harvest smiles." To plant scientists, there's much more. Swollen, root or rootlike storage organs are classified variously into bulbs, tubers, pseudobulbs, corms, swollen roots, rhizomes, and the like. A general catch-all term is *underground storage organ*, USO for short.

Though most exist below ground, some are borne at the soil surface—or *above* as in many "bulbils." They vary enough that generalizations are risky. The one thing bulbs and "almost bulbs" all share in common is that they are dense calorie sources. Few bear evergreen foliage; most must have a dormant rest period. Some grow in deserts, some are aquatic plants; some are edible, others toxic; some are tropical, and others withstand frigid winters. Many different plant families make such things. Five families with many bulbous genera are:

AMARYLLIDACEÆ
(Amaryllis family)
ARACEÆ
(Arum family)
ASPARAGACEÆ
(Asparagus family)
COLCHICACEÆ
(Colchicum family)
IRIDACEÆ
(Iris family)

Most bulbs of temperate climates bloom once a year, but a few such as *Cyclamen* can do so for months on end. Some subtropical and tropical bulbs can also bloom intermittently all year or are nearly nonstop, such as some tuberous *Begonia*.

Well known examples of bulbous species that are eaten much include *Allium* (onion, garlic, leek, and chives), *Solanum tuberosum* (potato), *Zingiber officinale* (ginger), and *Ipomœa Batatas* (sweet potato). Even eaten are the swollen roots of some young trees, such as Horseradish tree *(Moringa)*, Baobab *(Adansonia)*, and the Australian *Brachychiton*.

If one simply learns the needs of each species, growing them in a pot indoors is easy. But if one does not know what the plant needs, then murdering them unintentionally is also easy.

Cacti

Cacti are, in a scientific sense, members of the CACTACEÆ. All of the 126 genera are succulent; most are guarded by angry-looking spines; most grow in arid, sunny places such as the SW USA and in México. Most cacti have no leaves at all, but their odd stems are plump, store water, and photosynthesize. Various other more-or-less spiny succulent plants are called cactus by non-scientists. Cacti vary from tiny buttons to lush vines growing 50' into trees, stout shrubs, or lofty trees—*Pachycereus grandis* can grow over 80' in height. Most grow okay in containers indoors, if given sharp drainage, water in the right season and quantity, and ample light.

Cacti are collected by many people. The sharp spines that guard most are fascinating, and people cannot resist the urge to touch them. The flowers are often bright colored whether tiny or huge, and a few are fragrant. When some cacti bloom, after the grower has waited years, celebration ensues. The fruits of most species are edible berries, and some *Opuntia* are treated, in effect, as fruit trees. Of the 66 CACTACEÆ genera in this book, 55 (83%) are reported edible, and certainly other genera are nontoxic and could be eaten safely if they had the appeal. The flower petals are sometimes sour and juicy, other times dryish and bland. Only a few species such as the famous peyote *(Lophophora)* are hallucinogenic and toxic. The "jungle cacti" of varied genera need less light, tolerate more humidity, and produce more edible greenery, flowers and fruit indoors than the desert cacti.

Carnivorous plants

Earth's 800 plants that eat animals—mostly insects, spiders and the like, are weird and defy the common way of the world. This book features 9 such genera, and their reported edibility to people is minimal. Best known of these oddities as houseplants are Venus' Flytrap *(Dionæa)* and the Sundew *(Drosera)*. In terraria, one can grow the petite Butterwort *(Pinguicula)* and Bladderwort *(Utricularia)*. Grown rarely and not pleased easily are five pitcher plant genera: *Cephalotus, Darlingtonia, Heliamphora, Nepenthes,* and *Sarracenia*. Only *Nepenthes* is eaten much; its pitchers are cleaned of bugs and digestive juices, then stuffed with rice or whatnot, and steamed.

Conifers

"Conifers" are resinous, cone-bearing trees or shrubs, usually evergreen. All are called in science gymnosperms, and include some of earth's largest, mightiest, and longest-lived trees. However, the gymnosperms include *more* than conifers. And some conifers such as *Juniperus* and *Podocarpus* do not make woody cones, but berries. The best known conifer indoors is Norfolk Island Pine, *Araucaria heterophylla*, whose grass-green, tiered branches are very familiar. This book has 13 coniferous genera: *Agathis, Araucaria, Cedrus, Chamæcyparis, Cryptomeria, Cupressus, Juniperus, Pinus, Podocarpus, Sequoia, Taxodium, Widdringtonia*, and *Wollemia*. Though all but 3 are reported edible, their food-production indoors is negligible.

Conservatory & Greenhouse plants

Dating from the 1600s in northern Europe, conservatories and greenhouses can be cool, or heated, and low or high-tech, with or without fans, artificial lighting, and so on. If large enough, and the grower skillful, virtually *any* plant can be grown in one. But my book includes only the more common plant genera because the simple fact is most of us lack such luxurious assets. Still, many of us can visit greenhouses, wherein we can pretend to be visiting a tropical paradise. So, it is appropriate to include plants seen commonly therein.

Ferns and fern allies

This book features 62 genera of ferns, horsetails, and spikemosses cultivated inside (over 87% of them with edible species), including all genera grown as houseplants commonly, as well as some grown inside rarely. Ferns—speaking strictly—are non-flowering plants reproducing by dust-like spores, not seeds. Certain flowering plants *called* ferns, but which are not the *pteridophytes* of botanists, are treated with the flowering plants that they are. The ferns and their relatives evolved more than 100 million years before flowering plants. "Coal is composed almost entirely of fossilised ferns." Ferns grow around the world, varying much. 10,500–12,000+ fern species exist, in 274–312 genera. More so than in other plant groups, the fern specialists disagree hotly on classification, so *many* synonyms are needed. Few ferns are trees; some are aquatic, some grow on rocks, many are epiphytes or swamp plants, and a few grow in deserts or water. They can be minute and dainty or bear fronds over 23' long. As they uncoil, many fronds resemble clenched fists or "fiddleheads." Some ferns do not make the customary fronds and do not look like familiar ferns. They can be deciduous or evergreen. In general, ferns need higher humidity to thrive than most homes

provide. But ingenious people make do, using terraria or humidity trays, misting the foliage, growing the plants in bathrooms, and so on. The relaxing green color and delicate beauty of fern fronds are very popular. As food sources, most ferns, especially if grown indoors, yield little. Also, varied toxins are common in ferns.

Florist plants

Most plants mass produced and sold in florists shops or supermarkets are, just like cut flowers in a vase, intended as gifts to enjoy while fresh, and then discard. But if potted in soil, and then cared for properly, many kinds can endure indoors, or be planted outdoors. You can assume reasonably that florist plants are tainted with pesticide residues and ought not be eaten, until months have passed and new growth resumed.

Flowers

Houseplants can be divided into foliage plants and flowering plants, based on people's main motive in growing them. Yes, a few plants are ambiguous and hard to categorize. Botanists are precise about what they term a flower. Laypeople are not, and may call things flowers that botanists call bracts, spathes, aments, and so on. Regarding flowers inside, whether a plant blooms freely or not depends on varied factors, but mainly if enough light is provided. Sometimes a plant must reach a certain age and size before it can bloom. Certain plants will bloom almost continuously, others do so once yearly, or even require years before they bloom. Indoors, the pollen or nectar falling can cause a mess. Male and female flowers sometimes are on seperate plants, and it can be that the flowers of only one of the two are prized as human food. There is a general basic flower petal flavor, that is relatively bland and unremarkable. This is akin to a basic leaf/chlorophyll flavor. Most people prefer flowers that taste interesting and distinctive. Better known edible flowerbuds/flowers include agave (in alcoholic drinks), artichoke, banana, borage, broccoll, calendula, capers, carnation, cauliflower, chives, chrysanthemum, citrus, cloves, dandelion, daylily, hibiscus, lavender, nasturtium, rose, rosemary, saffron, squash, viola, and wisteria. Some human cultures eat flowers raw; many also dry, ferment, pickle, candy or crystallize, render into powder or otherwise process and store edible flowers. With each plant eaten, people variously choose the flower buds, the open flowers, or both. They sometimes pluck away and discard the calyx, or the stigma, or the stamens. Often, only the nectar is sucked as a sweet snack food. The role of flowers is to produce fruit. So sometimes people eat the petals, as in pineapple guava, but leave the ovary to develop into edible fruit. Even if your potted plant flowers inside, it may not set fruit unless it gets pollinated by you or otherwise. Sometimes it requires pollen from a second plant. So, regarding floral production and edibility indoors, details matter.

Food market plants

Certain edible plants from food markets can be bought and then grown rather than eaten. Growing avocado trees from their seeds; ginger and sweet potatoes from their roots; and pineapples from their crowns, are well known examples. At large ethnic food stores, numerous exotic vegetables and herbs are sold fresh, and if you have a "green thumb" it is often possible to start cuttings easily of such things as *Ipomœa aquatica* (Water Spinach) *Limnophila aromatica* (Rice-

paddy Herb), and *Piper sarmentosum* (Climbing Pepper-plant). If you can get viable, organic, raw seeds of a fruit, herb, or vegetable, and the plant is not a sterile hybrid, you can raise offspring. Even a package of bird seed mix can be used to raise your own food!

Fragrance

Fragrance influences people vitally. It is hard and horrible to imagine a life without perfumery or incense. A fragrance/odor may be fleeting, emitted only at the few hours when a flower's pollinator is active. Or at the other extreme, an entire plant can possess an unmerciful overpowering repulsive scent/odor. Warmth increases both fragrance and flavor, which is why cold cheese is less delectable than warm cheese. Various plants are not eaten in a caloric sense, but are used to impart a floral flavor/scent to rice. Flowers may taste like they smell—or not. Some smell beautifully yet taste horribly. It's not consistent. And every person has *unique* likes and dislikes.

Karen MacNeil wrote in *The Wine Bible:* "The genes that encode for olfaction are the largest group of genes in the body. Of the one million genes in the human genome, thirty thousand are solely dedicated to encoding smells."

In some flowers, fragrance is released by the anthers, so if male and female flowers are borne on seperate plants, and you seek fragrance: grow a male. If you dislike—or are allergic to— the anthers' scent or pollen: grow a female.

Often, plant fragrance is hidden, released mostly or only if you touch, rub, or crush a leaf. Three genera stand out in this respect. 1) Mint *(Mentha)*, goes way beyond beloved flavoring herbs such as peppermint and spearmint. Some kinds are scented ± of apple, banana, candy canes, chocolate, lemon, lime, orange, pear, grapefruit, sweet bay, or pineapple. 2) Thyme *(Thymus):* the vast diversity of scents afforded by this genus is one of the wonders of nature: camphor, caraway, coconut, eucalyptus, lavender, lemon, licorice, mint, nutmeg, orange, oregano, pepper, pine, pineapple, savory, turpentine, and varnish! 3) Scented Geraniums *(Pelargonium):* the prize-winner, with more diversely distinctive leaf scents than any other genus. The way a child may play with multiple colored crayons, *Pelargonium* does with its unparalleled diversity of scents.

Whole books exist on fragrant plants. The best is Roy Genders' *Scented Flora of the World*. A book on fragrant houseplants is Tovah Martin's *The Essence of Paradise*. Below are listed 100 genera in this book that include famous fragrant species prized for their notable scents. An **F** indicates the prized scent is in the flowers mostly or only.

Acacia F
Aërides F
Agathosma (Buchu)
Aglaia F
Allium (Chives, Garlic, Onions)
Alpinia (Galangal)
Aloysia (Lemon Verbena)
Bergera F
Boronia F
Bouvardia F
Brassavola F
Brugmansia/Datura F
Brunfelsia F
Buddleia F
Bursera
Cananga F
Cattleya F
Cestrum F
Cinnamomum (Cinnamon)
Citrus F
Clematis F
Clerodendrum F

Convallaria F
Crinum F
Curcuma (Turmeric)
Cymbopogon (Lemon Grass)
Daphne F
Dianthus F
Diosma (Buchu)
Ehretia F
Elæagnus F
Encyclia F
Epiphyllum F
Eucalyptus (Gum Tree)
Eucharis F
Euchile F
Fagræa F
Freesia F
Gardenia F
Gelsemium F
Genista F
Hedychium (Ginger Lily)
Helichrysum (Curry Plant)
Heliotropium F
Hoya F
Hyacinthus F
Illicium (Anise Tree)
Iris F
Jasminum F
Juniperus (Juniper)
Lantana F
Lathyrus F
Laurus (Bay)
Lavandula (Lavender)
Ligustrum F
Lilium F
Lonicera F
Magnolia F
Maxillariella F
Mentha (Mint)
Mitriostigma F
Murraya F
Myrtus (Myrtle)
Narcissus F
Nerium F
Nicotiana F
Nyctanthes F
Nymphæa F
Ocimum (Basil)
Oncidium F
Osmanthus F
Pandanus (Pandan)
Pelargonium (Scented Geranium)
Phalænopsis F
Pittosporum F
Plumeria F
Pogostemon (Patchouli)
Polianthes F
Primula F
Prostanthera (Mint Bush)
Rosa F
Rosmarinus (Rosemary)
Sarcococca F
Salvia (Sage)
Stanhopea F
Stephanotis F
Syringa F
Tabernæmontana F
Telosma F
Thymus (Thyme)
Trachelospermum F
Tulbaghia (Society Garlic)
Vanda F
Vanilla
Viola F
Viburnum F
Vitex (Chaste Tree)
Zanthoxylum (Szechwan Pepper)
Zingiber (Ginger)
Zygopetalum F

Entire gardens feature scented plants. Note that certain plant fragrances may be enjoyable outdoors, yet too much inside a small room. To grow a garden, inside or out, focused solely on fragrance, or edibility, or looks, is possible. But most of us prefer a blend of plants offering us delight to our eyes, savor to our nostrils, and food to sustain us. Carrying this ideal further, we may also seek to have at hand medicinal and psychoactive plants.

Getting bulk or staple calories from strongly aromatic plants that thrive indoors is difficult. Most plants we grow indoors that are scented notably, pack much flavor/scent into *small* flowers or

leaves. Even if you grow your own lemons, they're mostly water. So, tantalizing smells are like spices, that feed our minds mainly, make us relieved, recall fond memories, and excite us pleasantly. A whiff of the right scent can also cause healthy bodily responses, as demonstrated in the field of Aromatherapy. The most we can ask in a dietary sense of fragrant plants that we grow is that they pique our appetite and enhance our starch-based meals. Of earth's top 10 caloric-source plant genera, none are remarkable for fragrance! (A few rice cultivars such as 'Basmati' are naturally scented.)

Six genera in this book whose flowers are ± unpleasant, fetid, stinking:

Amorphophallus
Aristolochia
Arum
Cotoneaster
Dracunculus
Stapelia

Even these genera can contain certain species with sweet or unobjectionable floral scents. Just like genera *Lilium* and *Magnolia* have a few species whose flowers smell bad. Nature is full of surprising, fascinating inconsistencies.

Gesneriads

The GESNERIACEÆ include many beautiful and beloved flowers, such as African Violets *(Saintpaulia)*. The family name commemorates Konrad von Gesner (1516–1565), accomplished and famous Swiss naturalist. But sadly, of all the larger plant families, *none* have a lower percentage of reported human edibility of genera. This book includes 32 genera, with only 12 (37.5%) reported edible. Curiously, however, Gesneriads are about as rarely encountered in toxic plant literature as they are in edible-plant sources. Poison control institutions have published many lists of toxic houseplants and garden plants. Gesneriads are even rarer there than in the edible-plant writings! The thing is, the plants are small usually, offering scant food, and are often bitter. Many species are rare withal. So, a collector of these plants can taste carefully, and doubtless discover certain Gesneriads whose flowers contain sweet nectar, or whose leaves or berries are no more bitter than dandelion greens. Some are even wintergreen-flavored.

Grasses, rushes and sedges

Most grasses and their allies are notably *slender*. Three plant families are full of what most people will call grasses: GRAMINEÆ [aka POACEÆ] (true grasses; 13 genera in this book), CYPERACEÆ (sedges; 9 genera in this book), and JUNCACEÆ (rushes; 1 genus in this book). Of these 13 genera, only 1 *(Rhynchospora)* has not been reported edible even though the genus has about 350 species. Some of Earth's main human foods are grass seeds, such as wheat, rice, corn (maize), barley, rye, teff, sorghum, and millet. And the number one global edible crop raised each year, measured by *weight*, is sugarcane. Bamboo shoots and seeds are also eaten. Lemongrass is grown mostly for its zesty flavor. Many grasses have a marked photosynthetic edge, called C_4 carbon fixation. However, few grasses, rushes and sedges are worth growing indoors for food. Other plants yield more. Also, grass or bamboo leaves rustling gently in the breeze outside is comforting—but doesn't happen inside. And inasmuch as virtually all bamboos hail from summer-rainfall climates, when they're grown in dry-summer regions or in pots indoors, they are mite prone. So

give them a water shower weekly to help offset the pests. If you desire plump bamboo shoots to eat, do not be stingy giving water, fertilizer, and light. Most grasses need sun. Likely, the most practical way to consume home-grown grass is to use a wheatgrass juicer that renders fibrous grass leaves into a digestable drink.

Hallucinogenic plants

Certain plants can be both edible and hallucinogenic, hypnotic or otherwise psychoactive. The 1998 book *Plants of the Gods* features 80 plant genera and 7 fungi genera. Of its 80 plant genera, 47 are also included in this edible houseplants book, 45 (95%) of which are reported edible. Yes, just like the major overlap between toxic and edible plants, so it is with hallucinogenic plants, though this striking fact causes most people naked wonder. An example is Marijuana *(Cannabis)* which can be eaten, used medicinally, or as a hallucinogen. In stark contrast to how most of us modern urbanites behave, aboriginal cultures used hallucinogenic plants not as recreational drugs but in serious magic, medical, and religious ways. Since my book is a record of food uses mostly, it supplies little information on medicinal or hallucinogenic plant usage.

Hybrids

A hybrid is like a mule, a cross. When two closely related but *separate species* (or even genera) of plants or animals interbreed (in nature or in cultivation), their progeny is called a hybrid. In many written accounts, hybrids are often treated as equal in rank to species and included in lists of species. Ideally, the parentage is cited with the female parent placed first, the male second. Since the direction of the cross is often unknown, some authors prefer always listing the parental species alphabetically. The international rules prefer squeezing the multiplication sign right next to the name inelegantly: *Iris* ×*germanica;* but I insert a thin space: *Iris* × *germanica.*

In many cases, whether of food plants or ornamental plants, hybrids are preferred and grown more than purebred species. In the case of houseplants, purebred orchids sold today are outnumbered by hybrids—because the hybrids bloom far faster, the flowers last longer, and the plants are easier to keep healthy. Sometimes several genera —not just 2 species or genera—are used by plant breeders. This book *mentions* by name very few hybrid genera, and treats none, being an account based solely on genera.

Whether a plant is purebred or a hybrid ought not make a difference if we are growing it for our eyes or for our stomachs. But frequently, hybrids are *superior* to purebred species in ease of propagation, rate of growth, toughness, appearance, or so on. Some are so strong they practically swagger with pride.

Many writers fail to specify whether a given plant is a hybrid or not. Some writers use the word hybrid sloppily, to indicate what is *actually* a mere selected cultivar (cv.). In this book, pains are taken to be precise about such things.

Indoor bonsai

Bonsai (Japanese) / Penjing (Chinese; 盆景) practice originated over 2,000 years ago in China. Certain plant genera are in this book mainly or *even only* because they are reported in books or articles that suggested their use as indoor bonsai possibilities. A great many more plants can be treated as bonsai in pots outside all summer, then brought indoors during

freezing winter weather. To do bonsai right, requires knowledge, skill, patience, enduring dedication, and the proper equipment and tools. But the results can be among the most beautiful and revered potted plants of all. Originally, bonsai growers used temperate plants and grew them outside. Indoor bonsai is best with tropical or subtropical plants because most do not require a cold winter rest. Because it is a specialist technique, and *indoor* bonsai is even more difficult, I tried to limit carefully the genera admitted into the book, and if appropriate, I note whether a given genus is apt to be easy or difficult as indoor bonsai.

Legumes (the Pea Family)

We call the Pea Family LEGUMINOSÆ or FABACEÆ. (A minority of authors split the Legumes into several different families.) Extremely large, the family boasts abundant, diverse genera, of vast importance both ecologically and economically. Legumes can have edible roots, stems, bark exudates, leaves, flowers, fruits (pods), or seeds. Compared with the opulent domain of the orchid family, or the bizarre and weird cacti, the Legumes are a pedestrian and utilitarian clan as a whole. Still, some bear floral splendor the equal of anything on earth. Grown as crop plants, many Legumes are called pulses. Their fruit and seeds are rich in protein and often eaten as staples. But some Legumes are toxic, even deadly. Some are guarded by fierce spines or dense, woolly hairs. Legume flavor varies little in my experience; a common denominator can be detected, for example, in beans, peas, soy, peanut greens, clover, kudzu, and so on. Plants vary from delicate annuals to robust perennials, shrubs, snakelike vines, or trees that can become large and stately. The flowers are small usually, and often shaped distinctively with "lips," wings, keels and banners in what is called a pea-like flower that can be scentless or supply perfume of heavenly sweetness. Seeds are borne in pods that can be squat or elongate. A great many genera fix nitrogen symbiotically underground, giving them a huge advantage—in effect, they make their own fertilizer. Those Legumes that fix nitrogen, have crappy fall color; those that don't fix nitrogen, can have glorious yellow fall leaf color, or (rare) orange, red, or purple. Most Legumes need much sunlight; few tolerate shade, and likely none require it. Most are difficult as houseplants; none are listed in compilations of easy or non-demanding plants to cultivate inside. They are light demanding, pest-prone, and sulk like erstwhile savage wild lions enraged at being held captive. Give them much humidity and light, the right soil mix and temperature, and they are easy in a greenhouse. Some will thrive only if their soil is inoculated. The least rare houseplant Legumes: *Mimosa* (Sensitive Plant); *Arachis* (Peanut, as a novelty), *Erythrina* (Coral Tree), and *Acacia*.

Mosses, lichens & algæ

Due to their use in miniature gardens, terraria, aquaria, and the like, a few representative primitive mosses (4 genera), lichens (4 genera), liverworts (2 genera), and algæ (1 genus) are included in this book. All the included lichens and algæ are reported edible, and none of the included mosses and liverworts. Earth's best known edible members of these plants are the seaweeds, not in this book, but often superb, nutrient-dense wild vegetables. **Lichens** are tough, growing in nearly every habitat. They can be

crusty, leaf-like, or lacy; in any color. They have been described as a partnership of algæ and fungi. In technical terms: fungi symbiotic with (mainly) green algæ and/or cyanobacteria. **Mosses** and liverworts, the scientific *bryophytes*, are spore bearing, and green mainly. Seed-bearing plants *called* mosses in common usage are unrelated. Mosses and liverworts are always small, hug the ground, or rocks, or tree trunks, usually are astringent with tannins, and offer negligible nutrition. **Algæ** can be green, red, or brown; they grow in moist places or water, and vary from microscopic specks to huge kelp seaweeds more than 250 feet in length.

For all of these plants, knowing their habitat or substrate is critical if you care to identify or grow them. Different kinds grow in water, on soil, or on rocks, some in brightness, others darkness, and so on.

Mushrooms

Mushrooms and fungi, being not part of the plant kingdom, and being related more closely to animals, are excluded from this book. Yes, I know they are sold at food markets, eaten in the kitchen with vegetables, and included in other books on edible plants. Yes, some edible species such as oyster mushroom can be raised indoors easily (I have done so myself), and are tasty, healthy, and so on. Yes, some pop up as weeds in containerized indoor plants. But sorry; they are not included in this book. Unlike plants, they don't need light to grow. None are grown indoors intentionally for ornament, and if the reader desires information on cultivating edible mushrooms indoors, he or she can and must find it elsewhere. A book on the subject is *DIY Mushroom cultivation* by Willloughby Arevalo.

Native plants

Recent years have seen major interest in preserving, growing, and celebrating native plants. Motives vary. Some people desire to help native birds, insects, and other wildlife. Some value seeing landscape plantings present a local sense of place rather than a boring, interchangeable palette of common plants. Some think natives better adapted to local growing conditions. Some are caught up in the excitement of a *cause célèbre*. Extreme, zealous advocates have been accused of "nativitis." As for growing edible houseplants, it happens that no plants are "native" to containers grown indoors. Yet if we alter our conception of being native to a *region* to being *adapted to conditions*, then plenty of plants thrive, even weedily, when containerized and grown indoors. That is why, for example, old greenhouses have numerous "wild" ferns, mosses, and the like. Some plants raised indoors appear more attractive, healthy, and productive than they do in their outdoor native environment. If you desire to try being a *localvore* as regards your plant food, then your edible houseplant "menu" will depend absolutely on where you live. Below are listed 6 example plants native to the 48 contiguous USA states, France, and China:

USA

Dudleya spp.
Echinopsis spp.
Graptopetalum spp.
Opuntia spp.
Sequoia sempervirens
Tolmiea Menziesii

France

Allium Schœnoprasum
Lysimachia Nummularia
Mentha spicata
Petroselinum crispum
Primula spp.
Rosmarinus officinalis

Cissus javana
Ficus Benjamina
Œnanthe javanica
Pilea peperomioides
Sedum sarmentosum
Trachelspermum jasminoides

China

Aditional lists can be made for, say, Chile or Australia, as species grown inside come from ("are native to") everywhere. Yet if growing *plentiful*, nutritious food inside is your goal, then the original nativity of the plants chosen to grow is secondary. After all, is your regular diet native? Are any pets you own native? Are *you* even a native? Nativity is a human concept. That is not to say it is invalid or a bad thing. But in regards to the ecology of growing plants indoors for food, it is an academic, immaterial point. Where it is notably otherwise, is if you import a non-native plant that thrives so much its offspring escape your cultivation and run wild outside. Then you might have released an invasive weed that can run riot in your local environment. Certain plants included in this book can reproduce themselves readily while growing in pots indoors—they can escape. Also, house cats can go feral, pigs run wild, pet parrots enjoy urban life far from their native haunts, and so on. For my part, I love growing an international garden indoors, with plants from all over the globe. If I desire to see or eat native species I need merely look out the window or go outside. That said, I'd find it interesting if someone was able, somewhere, to grow more than a little food indoors using *only* his or her native species. In parts of the tropics and subtropics, it'd be possible easily. But what's the point: if your edible species grow outside, why bother growing them inside? If one resides in a temperate climate, as I expect most of my readers do, then without a controllable greenhouse, it'd be a difficult challenge. Certainly many species can be cultivated, but their overall caloric yield is apt to be poor, considering all the care and time needed to raise the crop. An easy way to grow more native nutritious plant food indoors is to gather appropriate native seeds, and *sprout* them. Sprouted seeds are well known as superb foods. Crucially, one must choose the *ideal* species (native or not) to eat. This realm is well worth study, but is not the scope of the present book. All manner of edible species may be used such, regardless of their role as cultivated houseplants.

Orchids

Some people view orchids as earth's most precious flowers, and the growing of them successfully as almost a religious matter. Orchids are roundly admired for curious, intricate floral beauty, and fascinating diversity. Yet, some orchids are weedy; some have no more elegance than an urban pigeon zigzagging on bricks; many are used much in folk medicine. Orchids are eaten seldom. Few if any are toxic, yet they tend to be small, or rare, or out of reach, or bitter, or slimy, and few offer bulk calories. Their seeds are so tiny as to be dust-like. So, romantic and mysterious yes; giving rise to passionate prose, yes; but a major food source, no. The sunflower family, COMPOSITÆ, and the ORCHIDACEÆ, are the world's largest plant families. This book includes 80 orchid family genera that are variously commonly to exceedingly rarely cultivated in homes. Only 31 of these genera (38.75%) have had species reported eaten by people; the 2nd lowest percentage of any of the larger families included in this book, after the Gesneriads (37.5%). Many *hybrid* orchid genera

exist and are sold. They are excluded from this book, because it is their parental genera that have or lack the published record of being eaten.

Palms

Palms symbolize the tropics. Whether they are dwarf "palmlets" mature at 12" tall, or trees 200' high, and edible or not, people cannot resist their elegant fronds. Most are edible: 34 of the 35 genera in this book. But some parts of some palms are poisonous. Best known of the global edibles are the dates, coconuts, and the edible palm oils, but palm cabbage or heart, and many lesser known delicacies, exist also. As a rule, palms transplant with the utmost ease. Most live, if not thrive, for years containerized. A few are surprisingly frost-tolerant, too. These remarks refer to genera in the PALMÆ [ARECACEÆ]. Plants in various other families are often called palms, just like plants outside the CACTACEÆ are called cacti. For example: bananas, cycads, dracena, and tree ferns. Palms are all evergreen, with tough, fibrous leaves called fronds that are either fan-shaped or palmate (shaped like a hand) or pinnate (featherlike). Most are unbranched. The flowers and fruit vary much. Most specimens grown indoors seldom or never flower; they are valued for their lush leafage. As houseplants, palms don't yield significant food. If one eats their heart or cabbage, the trunk dies. Moreover, the nutrition is minimal.

Succulents

Succulent plants vary much, coming from a multitude of families and genera. "Some resemble carved pieces of white granite or brightly colored coral. Others look like perfectly formed flower blossoms made of green wax, or covered with spun glass." The 4 families in this book with the most succulent genera are:

AIZOACEÆ
(Iceplant family)
CACTACEÆ
(Cactus family)
CRASSULACEÆ
(Stonecrop family)
XANTHORRHŒACEÆ
(Alöe family)

The term means *fleshy*, as in plump, water-holding stems or leaves. They are the camels of the plant kingdom. For people poor at timely watering, these are your best bets. Many are tough as nails. P.T. Barnes: "… they will survive the hundred and one accidents and strains upon their vitality that would be fatal to any other living thing." A succulent will be juicy, if bitten, though the texture varies from crunchy to slimy. Flavor is all over the map. Some taste delicious. Some are salty—many ice plants tolerate very salty soil. A few are deadly. Most grow in sun and do poorly with insufficient light, but a few are shade plants or even aquatic plants. Most are herbs but some are trees (think of giant Baobab trees or a Saguaro cactus). Many with CAM (Crassulacean acid metabolism) taste different in the morning than in the evening. In general, the small succulents are propagated and shipped easily, so are collected by many people. Just break off a piece of stem, let its wound callus for a few days, then lay it on the potting mix, or plant it. Some are perfect for vertical or wall gardens. One can create artful topiary out of diverse edible succulents. More so than other plant groups, succulents are often sold devoid of scientific names. If you buy one such and it happens to be a bigeneric hybrid cultivar, you may find naming it correctly very difficult. Some succulents just "sit

there" for months on end, growing once a year—after rainfall in the wild. Others, such as certain groundcovers and vines, can grow non-stop in the right conditions—offering more food to growers.

Sunflower Family plants

The Sunflower or Aster family, called either (you get a choice) COMPOSITÆ or ASTERACEÆ, comprises over 1,500 genera, and some 25,000 species—Earth's largest plant family. This book includes only 37 genera, 26 of which (70%) are reported edible. Most genera grown as ornamentals are valued for their colorful flowers; few are grown for foliage mainly. The flowers of many do face the sun, so if you place a pot near a window, people viewing it from outside will see the flowers more than will those inside.

Five of the better known genera:

Chrysanthemum (Mum)
Dahlia (Dahlia)
Gerbera (one of the African Daisy genera)
Pericallis (Florist's Cineraria)
Tagetes (Marigold)

I think more Sunflower family plants would be cited as edible but many taste resinous and unappealing, or are too fuzzy with dense hairs to chew. Sadly, many that taste good, and are eaten much in Africa or elsewhere, contain toxic pyrrolizidine alkaloids. It is likely that the flowers of various small species are edible, and harmless, but have not been *reported* so in the writings that I checked.

Terrarium plants

Terraria are for plants similar to what aquaria are for fishes. Most of both are *small*, and suited therefore ideally for wee species. A terrarium is enclosed partly or totally, so the person controls the humidity. Various cute little rainforest plants that need high air moisture to thrive, are raised easily in a terrarium, while in an ordinary pot in a room, they wither away and perish. Terraria are a natural fit for mosses, lichens, and liverworts, too. If you do not use 100% sterile soil mixes, you may well sprout various *wild* plants or fungi arising from spores or seeds. Depending on what pops up, this can be good or bad. A terrarium can also be home to little frogs or other animals, so long as their needs are met. I kept a frog alive for 7 years in a terrarium.

Tropical plants

The tropical climate zone is only about a third of Earth's land mass, yet supports 80% of Earth's terrestrial biodiversity. Tropical regions, with few exceptions, never experience frosts. Subtropical climate zones experience frost now and then. But temperate climate zone plants endure frosty winters commonly, and hot summers, and need a yearly rest period. These generalizations can be refined. For example, ultra-tropical plants cease growth even if the temperature drops to 50°F whereas certain plants that hail from the tropics *can* survive a winter freeze. Factors affecting plant survival in cultivation include not only temperature (low, high, and night-time), but drainage, soil type, humidity, the plant's age, its genetics, provenance, and so on.

Vines

Vines, also called climbers or twiners, are a varied lot, ranging from small, delicate annual herbs to robust woody species that clamber over 100' into massive trees. People grow them in hanging baskets, balcony pots, window boxes, or ordinary containers outfitted with structures to climb, such as trellises, sturdy wires, or poles. Often, their elongating stems twine

clockwise or counterclockwise. Certain species first extend their stem rapidly, afterward expanding their leaves, and the grower must be cautious to not break the tender growing stem. Some vines climb by aerial roots, some by twining, some by tendrils, some by hooks; some just flop or hang. Many vines are extraordinarily productive. Like a houseguest who has overstayed, vines can become aggravating and high maintenance. They need much pruning to be controlled. When edible, this is ideal because the pruner can eat the prunings, at least in part. My *Hoya* grew 9' and hit the ceiling, so I pruned it and ate its young tender leaves in a pasta with olive oil, lentils, cheese, and shiitake mushrooms.

This book contains multitudes of vines, scattered among diverse families and genera. Five better known and common houseplant vines:

Cissus
Hedera (Ivy)
Hoya (Wax Flower)
Passiflora (Passionvine)
Tropæolum (Nasturtium)

There are vining aroids, cacti, ferns, figs, orchids, and so forth. The vine of mine that grew faster than any other was a kudzu *(Pueraria)*. I had a cactus vine *(Pereskia grandifolia)* in a 5-inch pot that reached 8½ feet long.