

Sha:chu ap ñeith? A resource for learning language using the natural world

LANGUAGE LEARNING BEYOND THE CLASSROOM: When we think about learning our Community's languages we often think of a classroom setting, with a fluent speaker teaching the weekly lesson (often based word and repetition) to a group of students arranged in a classroom setting. Although this has come to be seen as the standard way that language should be taught and learned this is far from the ideal model. We only have to think about the way we acquired our first language to see how far the classroom model is from natural language learning. The acquisition of our first language does not happen in a classroom, our parents never explicitly "taught" us by repeating a daily language lesson to us. We learned by participating, by observing and taking in all the language tied to the daily activities that happen around us in our home and community.

USING THE NATURAL WORLD AS AN INTEGRAL PART OF LANGUAGE LEARNING: One way that language learning can be made more engaging and culturally relevant is by utilizing the natural environment as both a source for learning content as well as a stimulus for presenting teaching material. The natural environment is a rich area that can be used in many different ways to engage language learning. It provides a full sensory experience to learners that connects with their daily lives and provides a possibility to transform that experience into something new. It provides a link to traditional ways of life that are best expressed using Akimel O'otham and/or Pee Posh. It provides a setting for reestablishing our connection to our Community's languages through a process of renaming the landscape.

CONNECTIONS BETWEEN OUR LANGUAGES AND THE NATURAL WORLD: Our Community's languages have developed over countless generations on the Gila River Valley and there are many different examples that show the connection between land and landscape. Names of places on the landscape, plant and animals and ways of talking about the natural environment show a unique cultural perspective that demonstrates the ties between land and landscape.

INCREASING OUR KNOWLEDGE OF OUR LANGUAGES AND THE LANDSCAPE: One unfortunate correlation that can be seen within tribal communities is that the loss of knowledge of the land and environment parallels the loss of the tribal language. It is not a coincidence that as our Community has shifted from traditional outdoor way of life to a modern indoor lifestyle that we have also shifted language from Akimel O'otham/Pee Posh to English. Tied to this shift is a loss of knowledge of our local environment, the plant and animal life, the names for traditional places and the changes that marked the seasons. One way to reverse this situation is to reengage with the land and use that knowledge as a way to jumpstart language learning. The following sketch outlines one method for reestablishing a connection with our local environment and how to use that understanding to drive language learning.

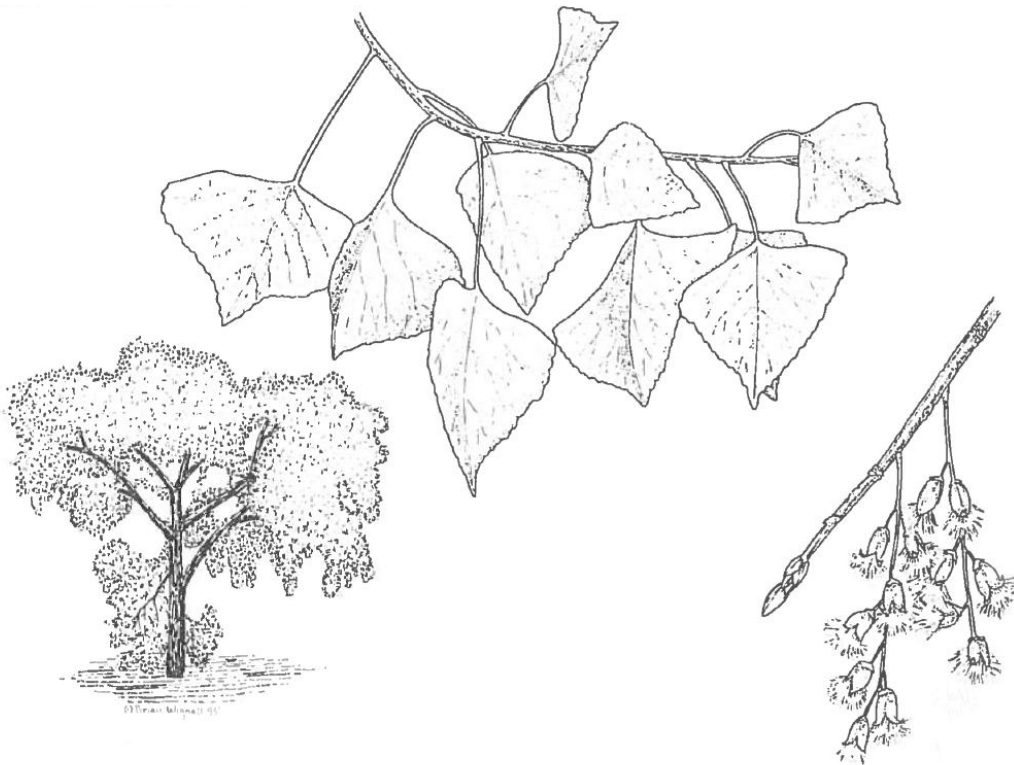
STEP ONE: CREATE A FOUNDATION FOR UNDERSTANDING OUR LOCAL ENVIRONMENT: One major difference that can be measured between traditional based people and urban people lies in the number of biological species they can identify and name. It has been shown that traditional based people can often identify a larger number of plant, animal and bird species than those living in urban environments. Even more important than the number is that traditional based people have a more

developed understanding of the underlying biological differences that group together and differentiate plants, animals and birds from each other. This understanding is based on a traditional science that parallels and closely mirrors the western understanding of biological science.

It is possible to increase our perceptive abilities of the local environment by utilizing some of the basic principles of (classic) biological science. This type of science is based on the structural and morphological differences between organisms that can be used to group or differentiate them from one another. These differences may be as easily obvious as the difference that differentiate cacti from other plants (spines instead of leaves, thick succulent flesh) or as subtle as two shrubs that differ in flower type. But one of the first steps for understanding the environment around us is to begin to see with a perceptive eye the similarities and differences between the plants, animals that live around us.

EXERCISE ONE: USING BOTANICAL ILLUSTRATIONS AS A WAY TO IDENTIFY PLANT SPECIES

The next few pages contain illustrations of plants and birds that are commonly found in the Gila River Valley. Take a few minutes and study how the illustrations are arranged. You will notice that botanical illustrations consist of more than one illustration. This is done purposefully to clearly show the identifying features of each plant. These features include an overall photo (usually with some object to show the scale size of the plant), and close-up illustrations to show identifying parts of the plant morphology (leaf shape and arrangement, flower type and shape, fruit or seed type and shape).



Example illustration of *aupa* (Fremont's Cottonwood) illustration identifying features

For the field portion of this workshop you will travel to the MAR-5 recharge area where a diverse number of plant and animal species live. As you walk through the area, try to identify the plants that are illustrated in the following pages. Once you find a plant that matches the illustration, take a picture of the plant using your smartphone or tablet. If you are a speaker of Akimel O’otham and/or Pee Posh and know the name of the plant, make a short recording of the name using your smartphone/tablet. Save your photos and recordings as they will be utilized in creating your OneNote Project that will show what you saw during your expedition.

IMPORTANCE OF LAND RESTORATION

The MAR-5 site is an important area of that demonstrates the restoration of the *riparian* (river edge) ecosystem on the Gila River Indian Community. It is here that the Community is purposefully replenishing the aquifer of the Gila River by recharging the riverbed with Central Arizona Project Water. The water that is being let into the riverbed travels downstream before seeping into the ground to replenish the aquifer underneath. As an added benefit to the Community the water that is let into the riverbed allows for the development of new flora and fauna, some of which are restricted due to the loss of water. It is hoped that in the future that this area will be managed to restore native species that are severely restricted on the Community, including *auppa* (Fremont’s Cottonwood), *udvak* (Southern Cattail), and *che’ul* (Gooding’s Willow). The benefits of the MAR-5 extend beyond environment as these areas have the opportunity to be areas for cultural as well as for language restoration.

STEP TWO: USE YOUR KNOWLEDGE OF THE ENVIRONMENT TO CULTIVATE LANGUAGE

LEARNING: Once you have developed basic skills at perceiving the local environment you can utilize those skills to work with fluent speakers to increase your knowledge of our Community’s languages. Even if your fluency is limited, it is still possible to work at a beginning level with a speaker (or with printed materials if no speaker is accessible). One good place to start is by identifying what is out in the environment, usually with a simple questions in Akimel O’otham/Pee Posh. For Akimel O’otham this question can be as simple as *Sha:chu ap ñeith?* (What do you see?). Or if you have a specific item in hand or nearby a useful question can be *Sha: ‘o e-a’aga itha?* (What is this called?). When working in this manner it is important to keep two things in mind. First, always try to use a simple question/answer strategy where you keep the conversation in the target language, in this example Akimel O’otham. To accomplish this we recommend having a set group of questions in your “language toolkit” that you have memorized and that produce answers that are easy to understand. Some examples of these in Akimel O’otham include:

Questions in O’otham for eliciting traditional talk about the natural world

Sha:chu ‘o vud itha?
Sha:chu ap ñeith?
Ba:p hasko ñeith?
Sha: ‘o ma:s?
Sha: ‘o e-a’aga?
Ba: hasko vuvak?
Ba: hasko ki:?
Sha: masma hekaj?

What is it?
What do you see?
Where did you see it?
What does it look like? What color is it?
What is it called?
Where does it grow?
Where does it live?
What is it used for?

A second, related consideration is to contextualize your own language use as a way to increase your understanding and communicative ability. It may be the case that a question and answer strategy will produce one word answers (for example a name of the object being asked). It is important however to be able to understand and produce language beyond single word phrases. One method

EXERCISE ONE INSTRUCTIONS: USING BOTANICAL ILLUSTRATIONS AS A WAY TO IDENTIFY PLANT SPECIES

Our languages express and organize our communities' understanding of the natural world. Learning how to effectively gather language about the natural world requires us to gain an understanding of the natural environment that we live in. The MAR-5 site provides an excellent area for us to learn skills in identifying plants and animals in a contained riverine environment. As we increase our understanding of the natural environment we become more effective at documenting the knowledge contained within our languages about the natural world.

Instructions:

Attached to this packet are a set of botanical and biological illustrations containing plants and birds that known to inhabit the MAR-5 site. Upon arrival at the site, you will each set out on a gathering expedition where you will seek to identify and document as many of the plants and birds as possible. As you walk around the preserve, be sure to pay attention the identifying features that are depicted in the botanical and biological illustrations. These illustrations are depicted in a way to depict the most important features that are used to distinguish species from one another. As you document the area using your smartphone, tablet or notebook, pay attention to gather photos that highlight these distinguishing features. Go through all steps included in the checklist below and be sure to fill out all sections. Remember that different plants and birds will not all be found in the same area, as there are different components to the site. If you are a fluent speaker or have a fluent speaker available, complete and fill out the language component of the checklist. Do not concern yourself with English names for the organisms depicted in the illustrations. The information, images and sound you collect during this expedition will be utilized in creating an OneNote annotated notepage.

Checklist

- ___ Read Instructions and inspected biological illustrations prior to starting expedition
- ___ Completed walk through of beach landing, riverside area
- ___ Completed walk through of trail area
- ___ Completed walk through of upper park area
- ___ Identified plants depicted in botanical illustrations
- ___ Wrote out a location where each plant was found on illustration sheet
- ___ Documented plant with a wide angle shot showing entire plant
- ___ Documented plant with a close up photograph showing identifying features (leaf shape, flower, fruit/seed)

Linguistic checklist

- ___ Identified names in Akimel O'otham/Pee Posh language for each illustration
- ___ Completed plant morphology sheet filling out names for every part of plant known
- ___ Completed bird morphology sheet indicating names for parts of birds
- ___ Completed basic identifying phrase for each organism (Itha 'o vud heg___.)
- ___ Record audio files for names of each plant using your device.
- ___ Record basic identifying phrase for each plant using your device.

to do this is to learn simple phrases that can serve as “frames” for the single word answers that you may get from your fluent speaker. Examples of these include *Itha ‘o vud heg* _____. (This is a _____.), *Neith ‘an heg* _____. (I see a _____.) and *I:tha ‘o s-veg*. (It is red in color).

Be aware that language learning is a process that takes time and effort. You are not only building capacity for understanding what is being spoken, but also capacity for creating spoken language which is knowledge that is acquired in stages. If you are new start off slowly with simple question and phrases and stay with those until you feel you have confidently acquired them before moving onto more advanced phrases. And equally important is to develop a rapport with your fluent speaker and not be afraid to ask questions (in either English or O’otham/Pee Posh) and not be afraid to make mistakes or be corrected. Perseverance is key to acquisition.

EXERCISE TWO: USING THE OUTDOORS TO ANSWER THE QUESTION SHA:CHU AP ÑEITH?

Using either the photos you took from your trip to the MAR-5 site you are to create a project with your Microsoft OneNote documenting what you saw during your expedition outdoors. Use the following questions and corresponding answers (or better yet make up your own if you are a speaker or have a speaker available) to describe what you came across during your time at the MAR-5 site.

Sha:chu ‘o vud itha?

Itha ‘o vud heg _____.

Sha: ‘o e-a’aga

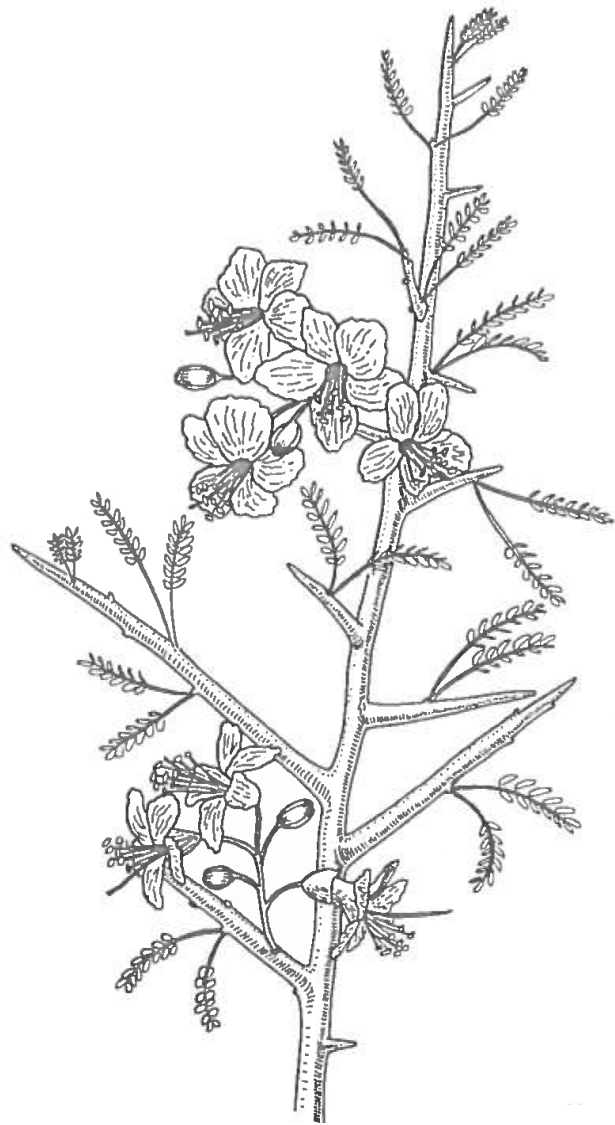
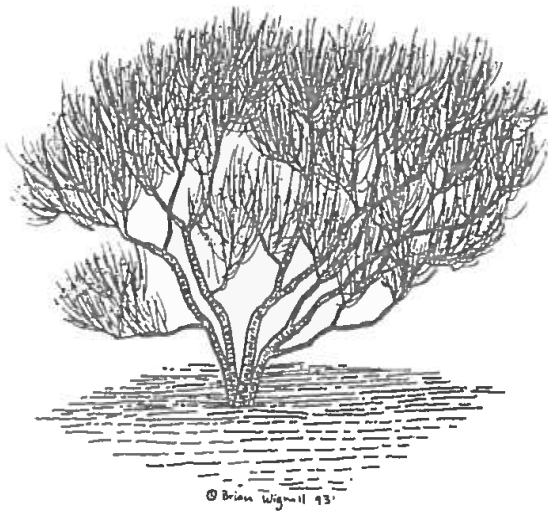
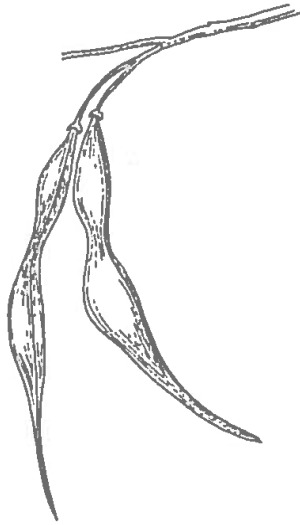
Bo e-a’aga _____.

Shachu ap neith?

Neith ‘an heg _____.

Using your Microsoft OneNote, create a file that contains the photo with a recording as well as a written statement identifying the plant or animal that you encountered during your expedition to the MAR-5. Do as many note files as you have pictures and identifying information for, and create for yourself a set of personal files that can be exported to a PowerPoint slideshow. These files and PowerPoint presentations will be shared with one another at the conclusion of the workshop.







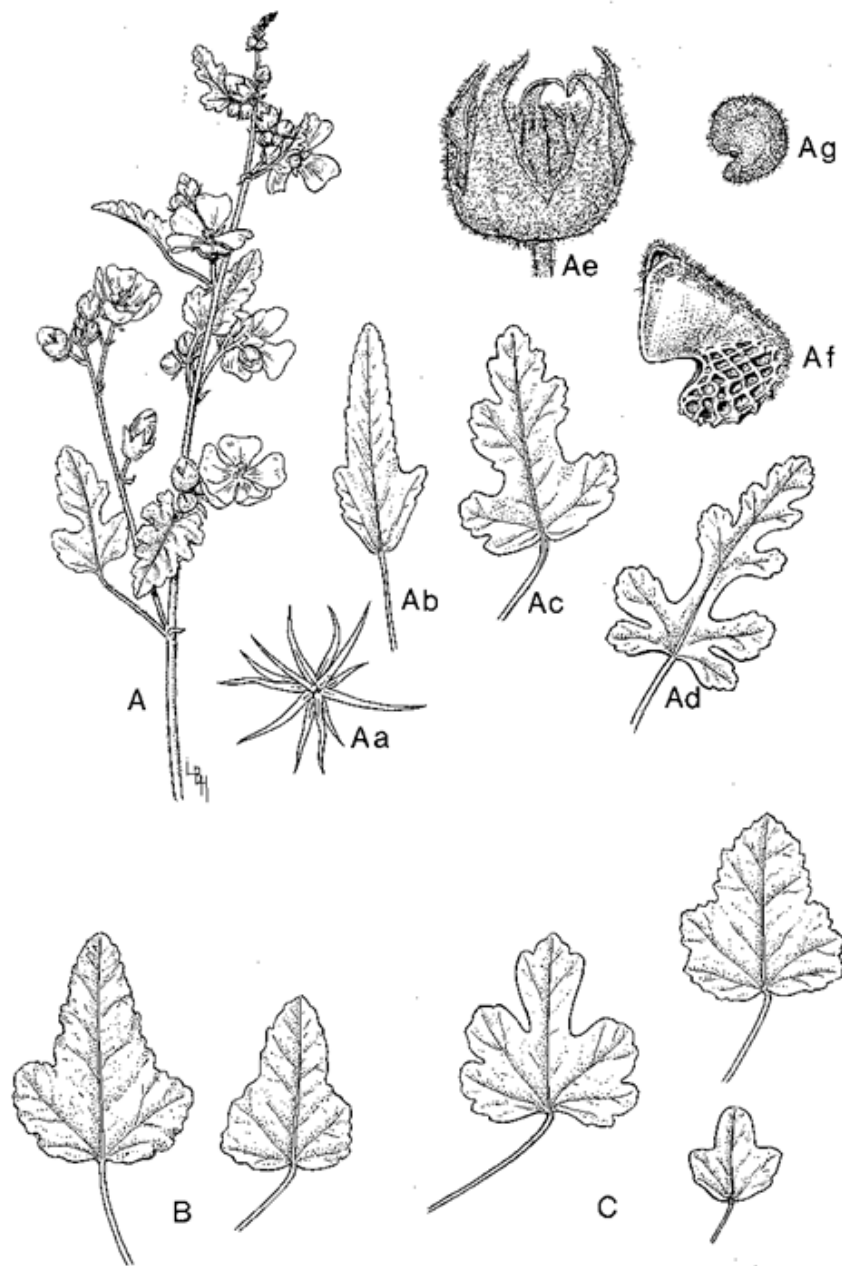
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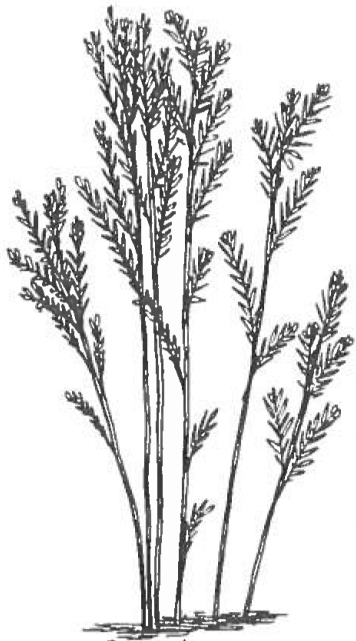
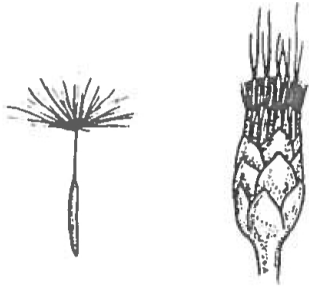




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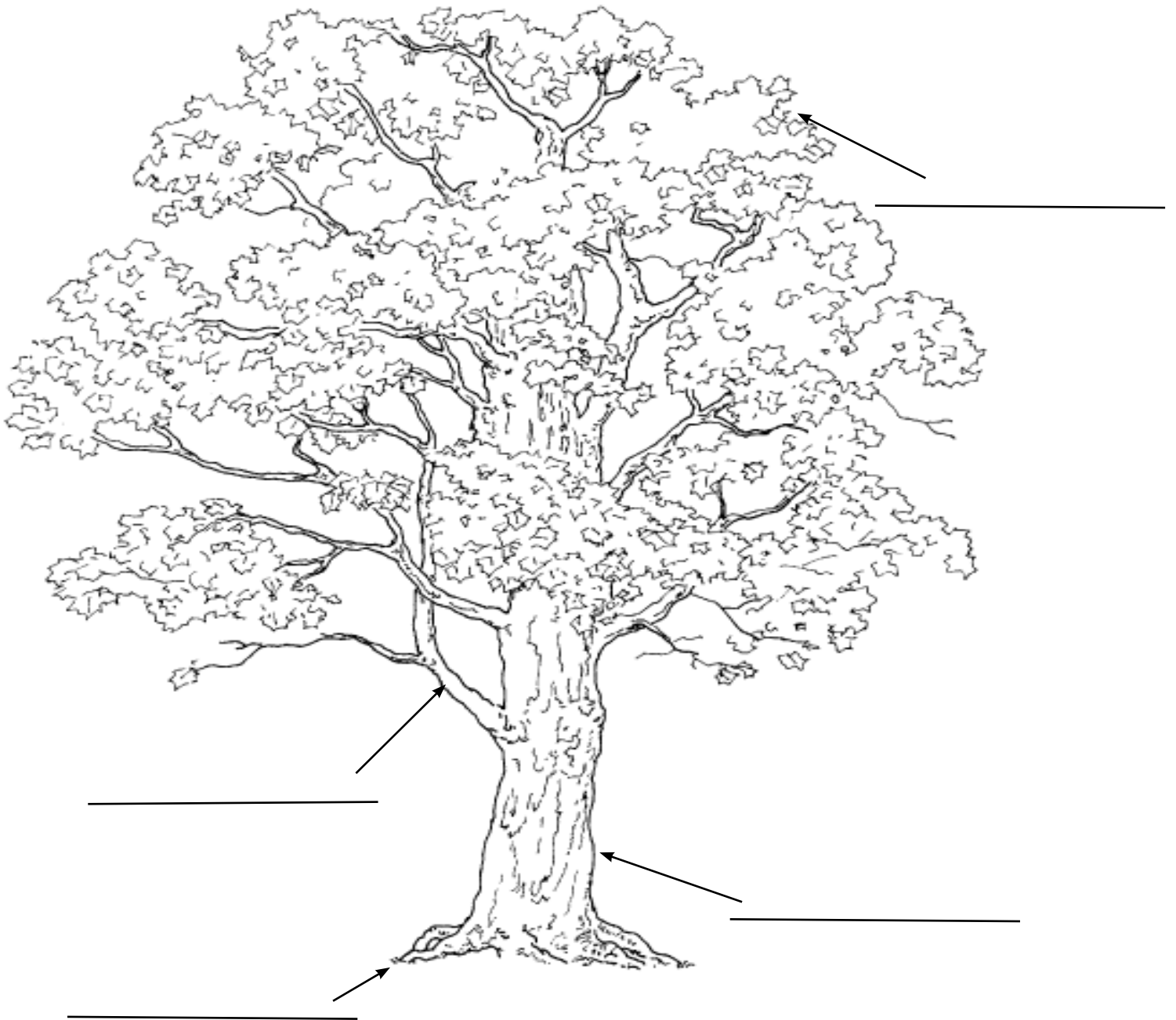




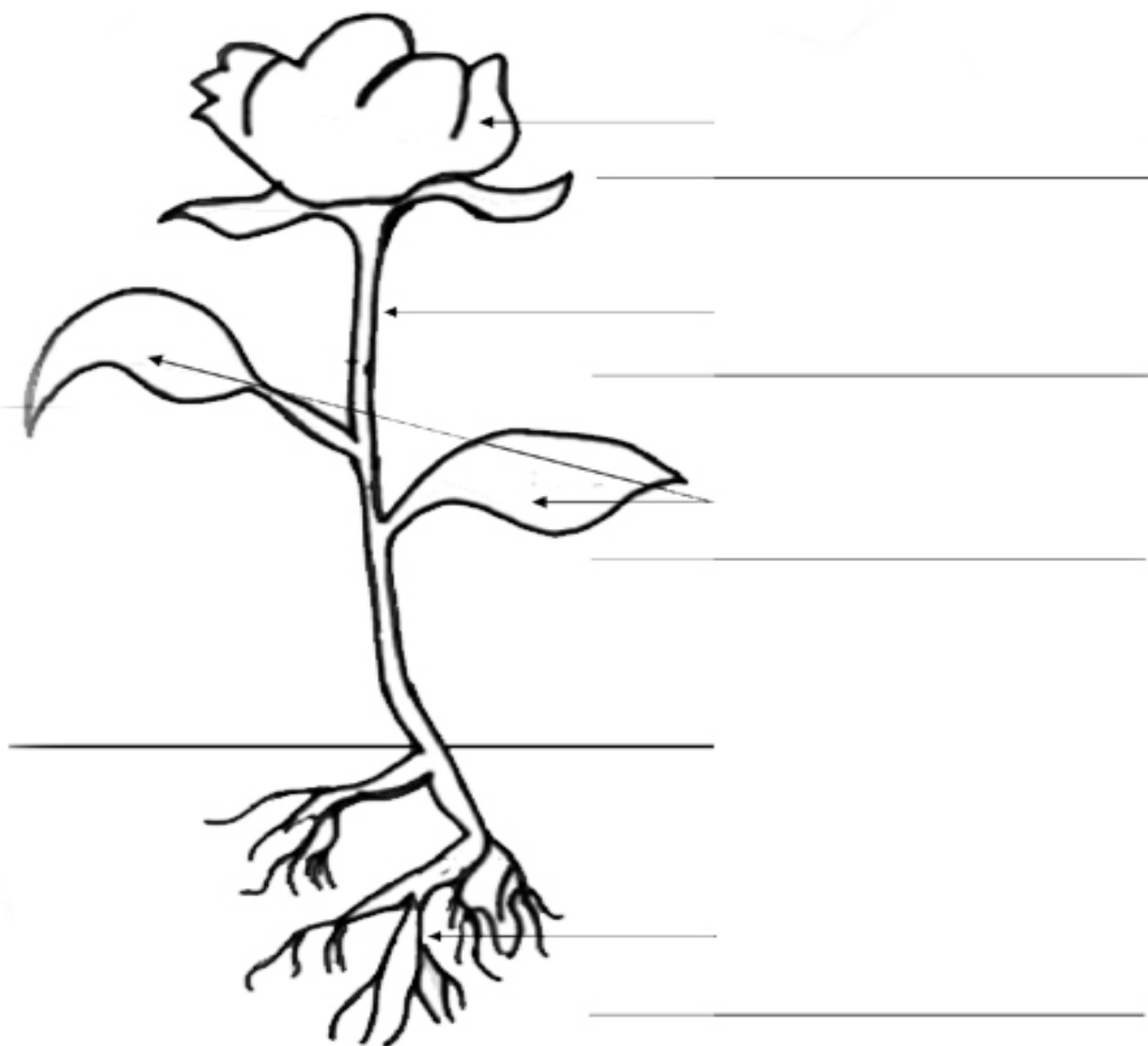
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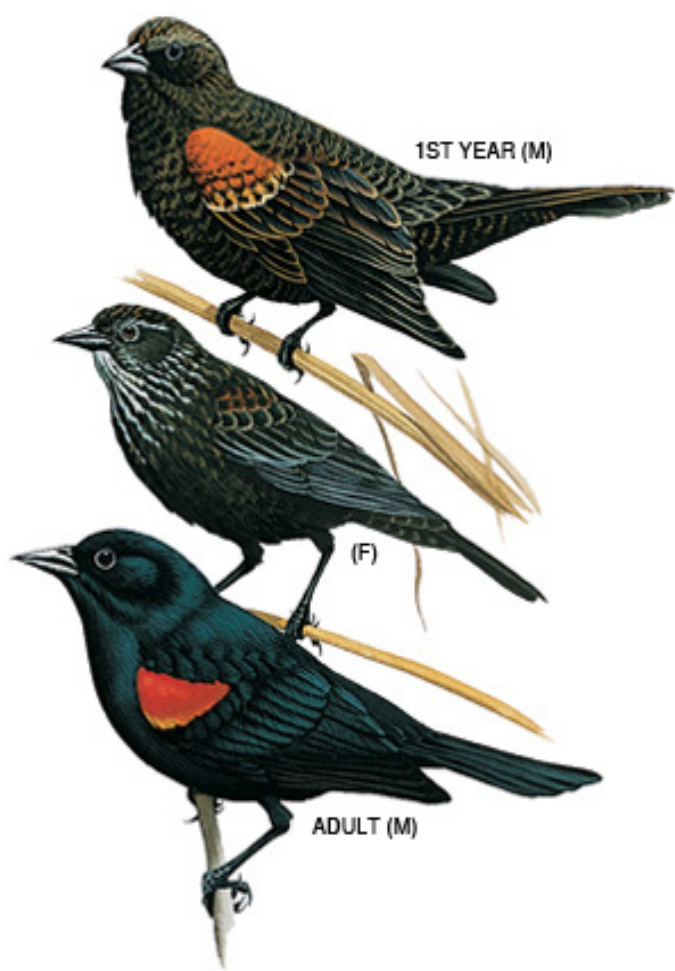


Name the parts of the tree below in your language



Name the parts of the plant below in your language







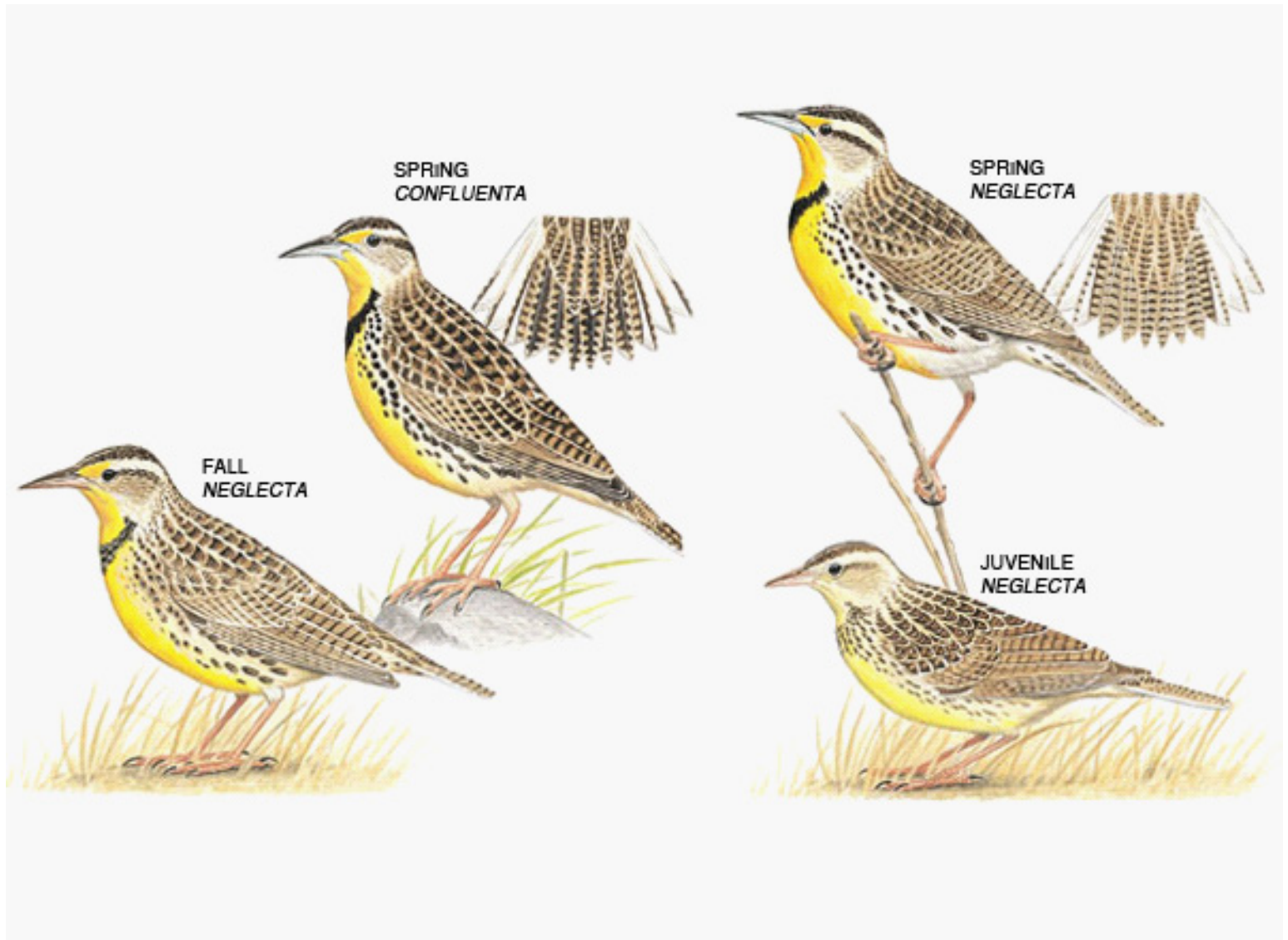
Juvenile
(Jun-Sep)

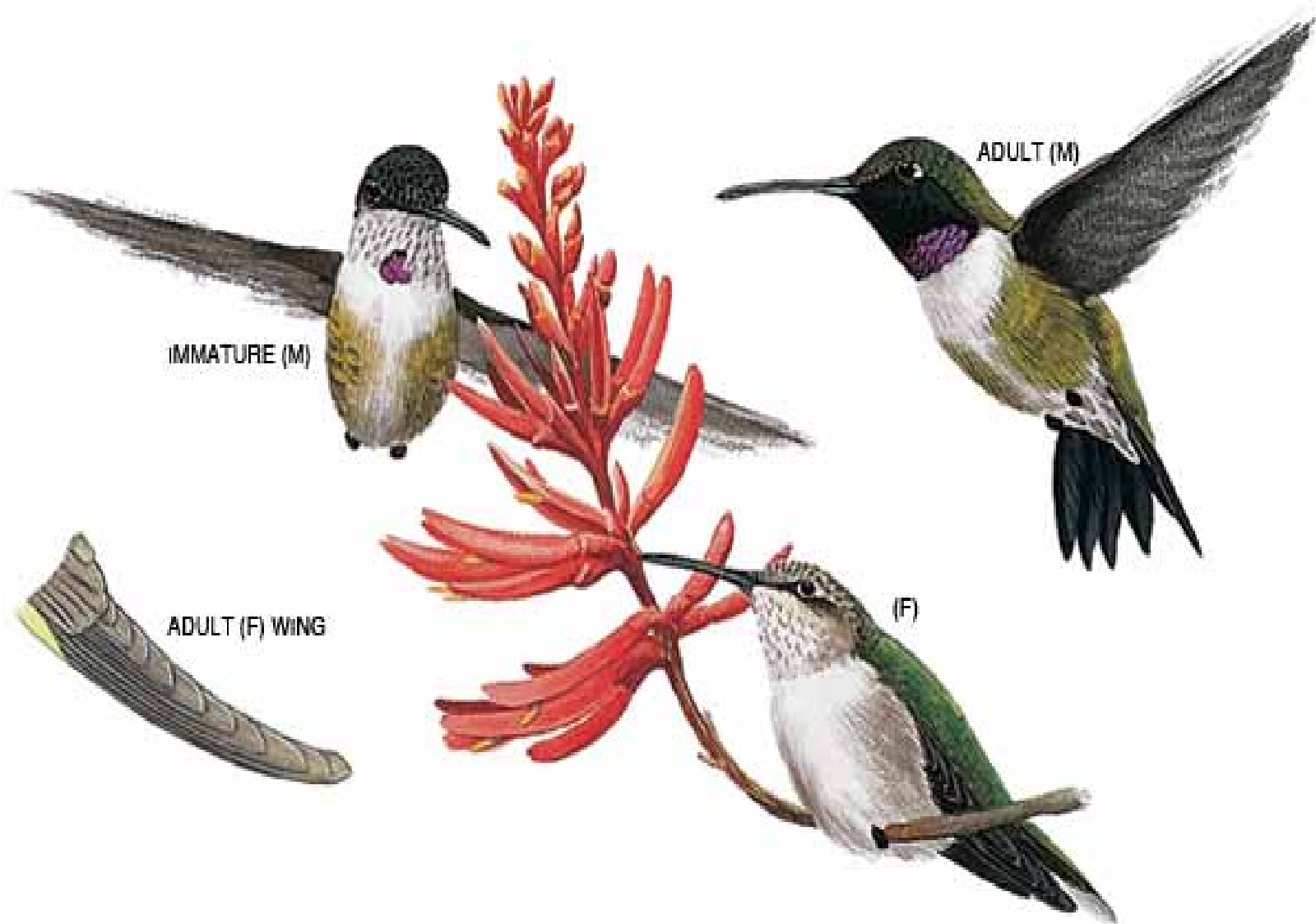


Adult









wingbeats rather stiff, pumping



gliding

Light juvenile



pale outer wing

Light adult



red tail

dark mark on leading edge



dark head

pale breast



Light juvenile (1st year)

white spotted V on scapulars



Light adult

streaked belly-band



HOW TO USE A PLANT FIELD GUIDE

SUMMARY HAND OUT

A plant field guide is a book that is designed to help the user identify plants in the field and is often intended to help users distinguish plants that may be similar in appearance, but that are not necessarily closely related. A field guide typically includes a description of the plant along with species drawings or photographs and an index. More complex and scientific field identification books include identification keys to assist with identification, but the publicly accessible field guides are a more user friendly resource. When considering a useful field guide, it is good to locate one that is specific to your bioregion if it is available. Field guides are generally organized into one of three categories, or a combination of these category types. These include organization by 1. Flower Color, 2. Plant type (Tree, Shrub, Vine, Cactus, Agave, Herbaceous plants) and 3. by Plant Family.

1. Field Guide By Flower Color



Field guides organized by flower color provide reference plates in the front of the book. These provide a quick guide to various flower colors and associated page numbers where those plants are located in the book. This a handy way for looking up plants you encounter in the field with ease. By locating the range of pages with the associated flower color, it helps narrow down the search when trying to identify a plant. One draw back to this format however is it requires that the plant you are trying to identify is in bloom, so it is most useful seasonally when plants are blossoming

2. Field Guide by Plant Type

Contents	
Preface to the Second Edition	iv
Preface to the First Edition	vi
Acknowledgments	ix
How to Use This Book	xi
Gymnosperms: Cone-Bearing Plants	1
Angiosperms: Flowering Plants	29
Trees	31
Small Trees or Shrubs	51
Shrubs	86
Vines	179
Cacti	193
Agave and Their Allies	209
Herbaceous Plants	222

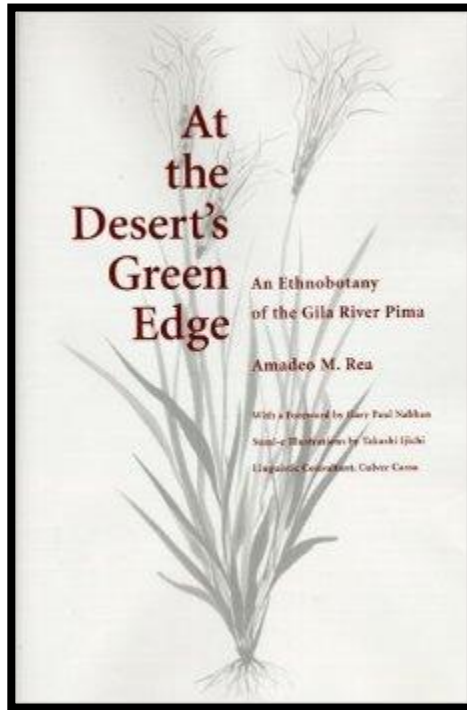
Some field guides order their chapters by plant type or category. This usually includes a section on Gymnosperms, which are cone bearing plants, followed by a section on Angiosperms which are flowering plants. The angiosperm section is usually further divided into finer categories by chapter such as Trees, Shrubs, Vines, Cacti, Agave, and Herbaceous plants (plants with with non-woody stems).

3. Field Guide By Plant Family



Field guides can also be organized into chapters by Plant Family. Plant species that are of the same Family share certain traits with one another. Organizing field guides by Family will be more useful to a user that is able to distinguish traits of many different Plant Families, helping them to narrow down the plant in question if they are able first to recognize which family it belongs to. For example plants in the mustard family can be recognized by flower pattern; they always have 4 petals, 4 sepals, and 6 stamens (two which are taller and 4 that are smaller). A phrase to help remember all plants in the mustard family is “4 petals with 6 stamens, 4 tall and 2 short.”

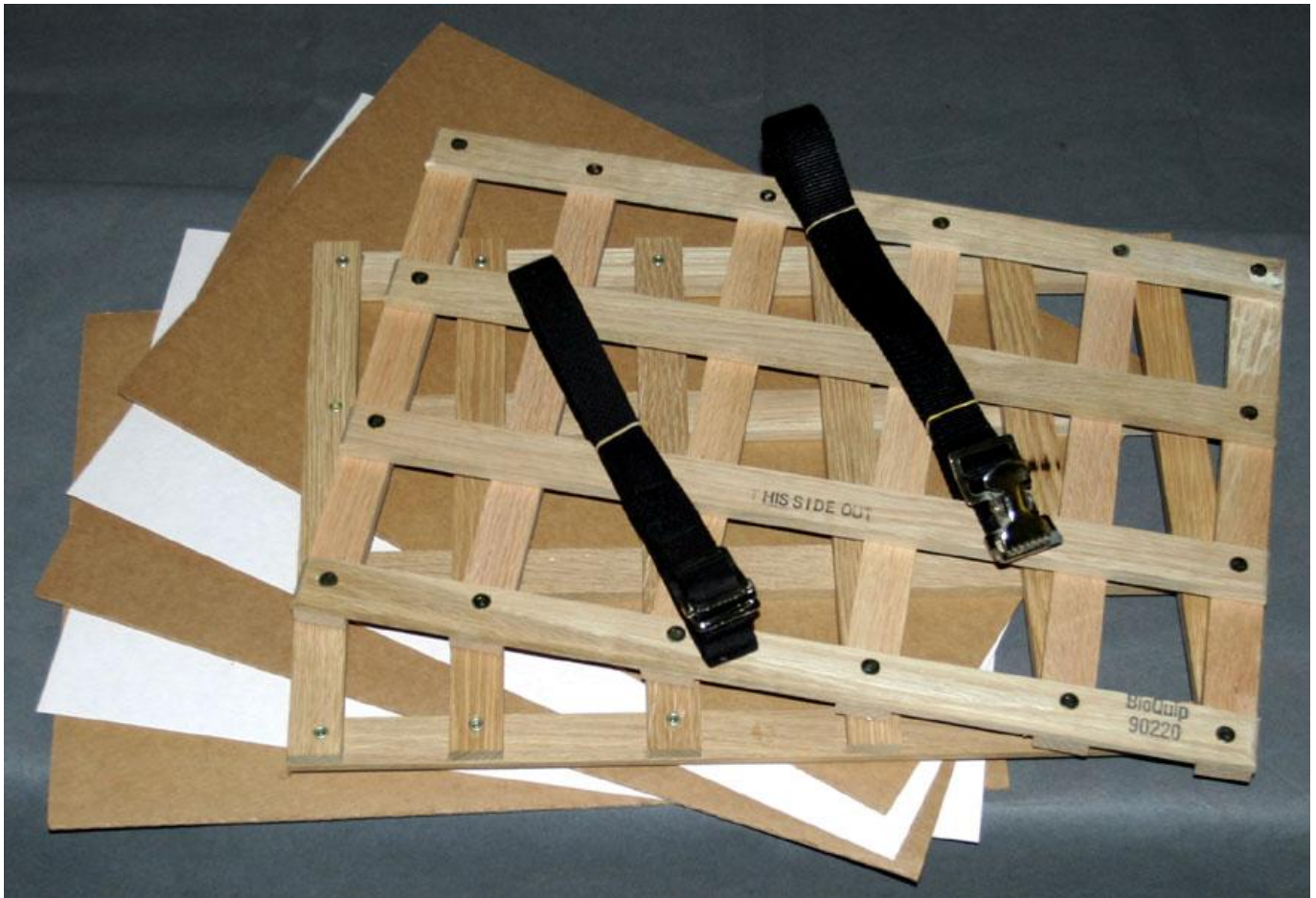
4. Field Guide By Ethnobotanical Classification



There are also field guides that are ordered according to an ethnobotanical classification system. This classification is different in that it does not follow a western scientific understanding of plants but instead uses “folk categories” as they are understood by the community itself. Each category is assigned a chapter which introduces the conceptual basis underlying the grouping as well as explaining the individual folk species that form part of the family. For example, in Amadeo Rea’s excellent work on the Ethnobotany of the Akimel O’otham he uses the native terms *U’us Chu:chim*, *Sha’i*, *I:vag* as well as covert categories (ones that do not have an explicit name) to organize the plants into different family groups. These groupings are based on a folk scientific understanding of plants that can mirror the western scientific understanding but can also be based on other criteria (e.g. cultural use) specific to the community.

PLANT PRESS GUIDE

How to Press and Preserve Plants



- 1) Buy or build a plant press. A plant press should consist of a wooden frame (for rigidity), corrugated cardboard ventilators (to allow air to flow through the press), blotter paper (to absorb moisture). The plant press is tightened using straps with buckles or bolts with wing nuts. The objective of pressing plants is to extract moisture in the shortest period of time, while preserving the morphological integrity of the plant, and to yield material that can be readily mounted on herbarium paper (an acid-free cardstock) for long-term storage.
- 2) Select your specimen. It is very important to document where you found the specimen as well as to organize your collection by number. Tag your specimen while in field and assign it a unique number. Record the number on the tag and in your field journal, along with notes about where you found it, when, and any other observations that might help with identification.
- 3) Bring the specimen back to the classroom either in a rigid container (to keep it from being crushed) or a plastic bag. A moist paper towel in the container will help prevent the plant from wilting. If you have taken a plant press along, you can proceed with the next steps right in the field.

- 4) To press the specimen, clean up the plant by removing any dirt or debris. Brush off loose soil and blot off moisture.
- 5) Arrange the plant on a sheet of blotter paper. Next to it, place the identification tag with its name, a number you have assigned to it, the location where it was collected, when it was collected, and by whom. Make sure the same information is in your journal. Place another piece of blotter paper on top of the plant.
- 6) Make layers. Place the pieces of blotter paper with your specimen inside two pieces of corrugated cardboard, to allow air to circulate.
- 7) Place the resulting package in the plant press and gently secure it together with straps, or place some heavy objects (books, bricks) on top.
- 8) You can dry several plants in the press at one time. Each should be arranged in the same layers as described above.
- 9) Check the plants every once a week and replace the damp papers with dry ones. It will take from two to four weeks before the specimens are completely dry.

A Few Plant Pressing Tips:

- ♣ Start with simple specimens at first then work your way up to more informative displays.
- ♣ Press your plant specimens immediately. I always find it best to press things as soon as I find them or pick them.
- ♣ Press the prettiest! Let me state the obvious here, your plant specimen isn't going to get any prettier after being pressed! Make sure you choose your specimen from the plant that is healthiest looking, and doesn't have any physical defects. Think of how you want to display your pressed specimen and how it will look on the wall, or in a plant specimen binder.
- ♣ Press fresh specimens. You really don't want to press plant specimens that are already dry or dead, they'll just crumble.
- ♣ Remember that however you place the specimens in your plant press is how they're going to look when they're dried out. Arrange all stems, leaves and other parts exactly how you want them to be when they're dry in between the blotter sheets and evaporators. Once all the layers are in place close up your plant press and bind it tight.