Growing Pediocactus, Sclerocactus, And Toumeya

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Growing P/S/T talk outline

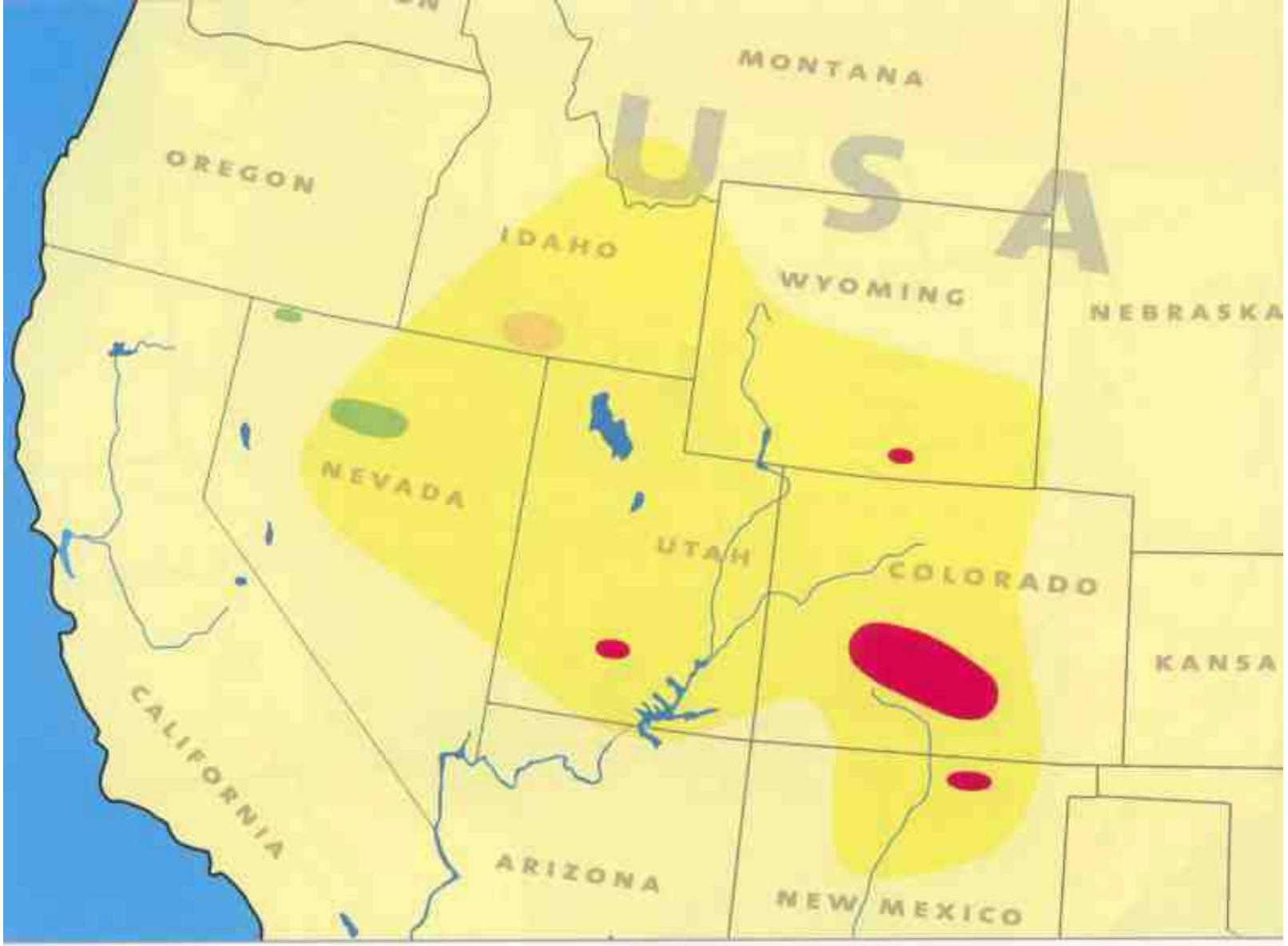
- Why?
- How?

Why Pedios/Scleros/Toumeyas?

- they are local!
- interesting forms and flowers!
- the challenge!

Notes on the plant distribution maps

- The maps are taken from Hochstätter's two recent books on Pedios and Scleros. We have copies in the library.
- The maps are fairly accurate. I have made a few changes/notes/corrections....



SECTION *PEDIOCACTUS* HOCHSTÄTTER I

- *Pediocactus simpsonii* ssp. *simpsonii*
- *Pediocactus simpsonii* ssp. *robustior*
- *Pediocactus simpsonii* ssp. *idahoensis*
- *Pediocactus simpsonii* ssp. *bensonii*

SECTION *PEDIOCACTUS* HOCHSTÄTTER II

- *Pediocactus nigrispinus* ssp. *nigrispinus* (P. simpsonii nigrispinus)
- *Pediocactus nigrispinus* ssp. *beastonii* (P. simpsonii beastonii)
- *Pediocactus nigrispinus* ssp. *indranus* (P. simpsonii indranus)

Pediocactus simpsonii - Utah

Pediocactus simpsonii - Utah

Pediocactus simpsonii - Idaho

Pediocactus simpsonii - Oregon

Pediocactus simpsonii - Colorado

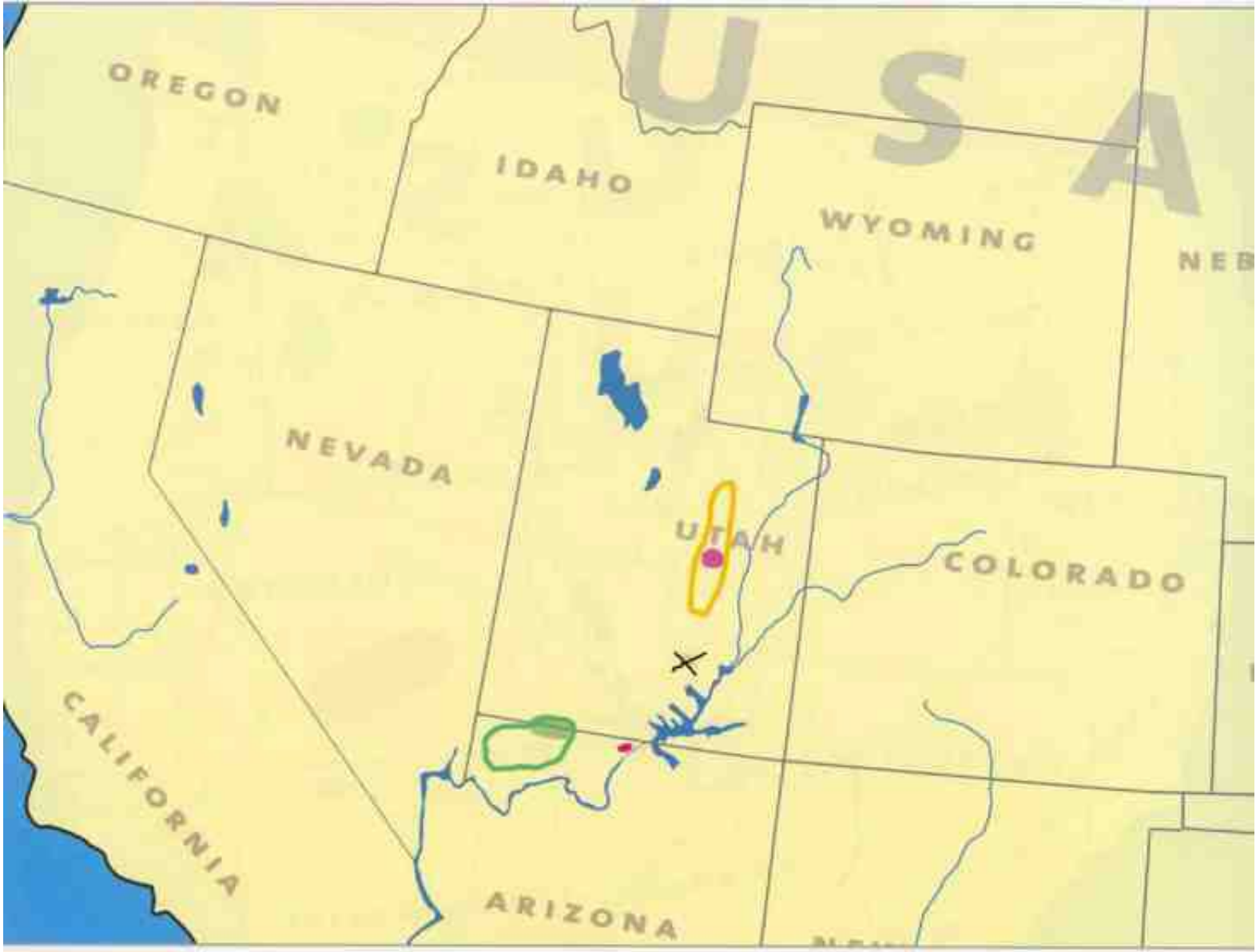
SECTION *PEDIOCACTUS* HOCHSTÄTTER III

Pediocactus paradinei

Pediocactus knowltonii

Ped. paradinei – Arizona

Ped. knowltonii – New Mexico



SECTION *RHYTIDOSPERMAE* HOCHSTÄTTER

- *Pediocactus sileri*
- *Pediocactus bradyi*
- *Pediocactus bradyi* ssp. *winklerorum* (winkleri)
- *Pediocactus bradyi* ssp. *despainii* (despainii)

Ped. sileri – Arizona

Ped. bradyi – Arizona

Ped. winkleri – Utah

Ped. despainii – Utah

NAVAJOA CROIZAT (Pediocactus)

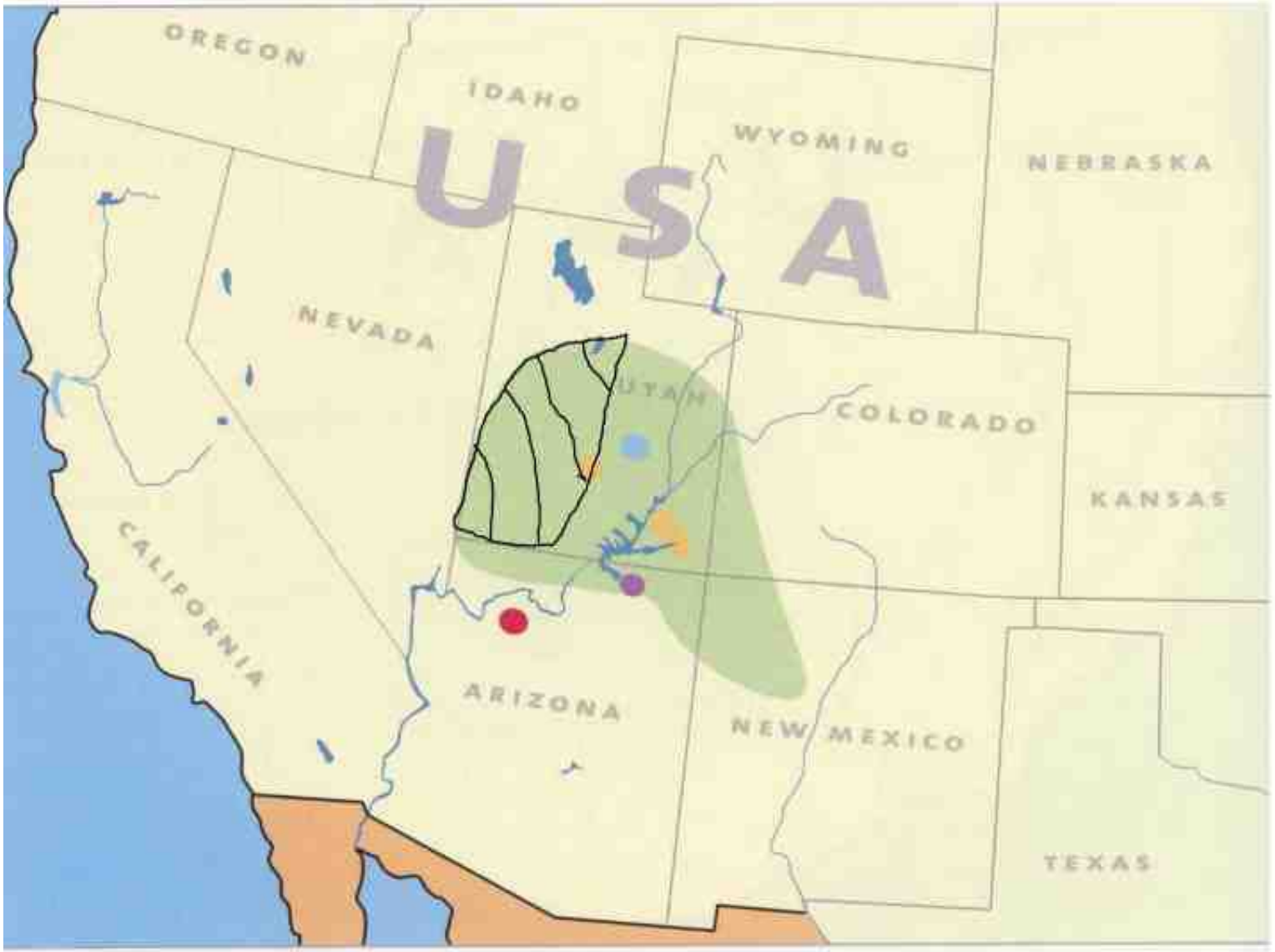
Navajoa peeblesiana ssp. *peeblesiana*

Navajoa peeblesiana ssp. *menzelii*

Navajoa peeblesiana ssp. *fickeiseniorum*

P. peeblesianus v. peeb. – NE AZ

P. peeblesianus v. fick. – N AZ



SECTION *PARVIFLORI* HOCHSTÄTTER I

- *Sclerocactus parviflorus* ssp. *parviflorus*
- *Sclerocactus parviflorus* ssp. *havasupaiensis* (S. havasupaiensis)
- *Sclerocactus parviflorus* ssp. *terrae-canyonae*
- *Sclerocactus parviflorus* ssp. *macrospermus*
- *Sclerocactus parviflorus* ssp. *variiflorus*

Scl. parviflorus v. parv – NE UT

Scl. parviflorus – NW CO

Scl. havasupaiensis – N AZ

SECTION *PARVIFLORI* HOCHSTÄTTER II

Sclerocactus whipplei ssp. *whipplei*

Sclerocactus whipplei ssp. *busekii* (Scl. sileri)

Sclerocactus whipplei subv. *aztecia* (Scl. cloveriae)

Scl. whipplei – SE UT & NE AZ

Scl. cloveriae – NW NM

Scl. cloveriae brackii – NW NM

Scl. sileri – N AZ

SECTION *PARVIFLORI* HOCHSTÄTTER III

Sclerocactus glaucus

Sclerocactus wrightiae

Scl. glaucus – NW CO

Scl. wrightiae – central UT

SECTION *MESAE-VERDAE* HOCHSTÄTTER

Sclerocactus mesae-verdae

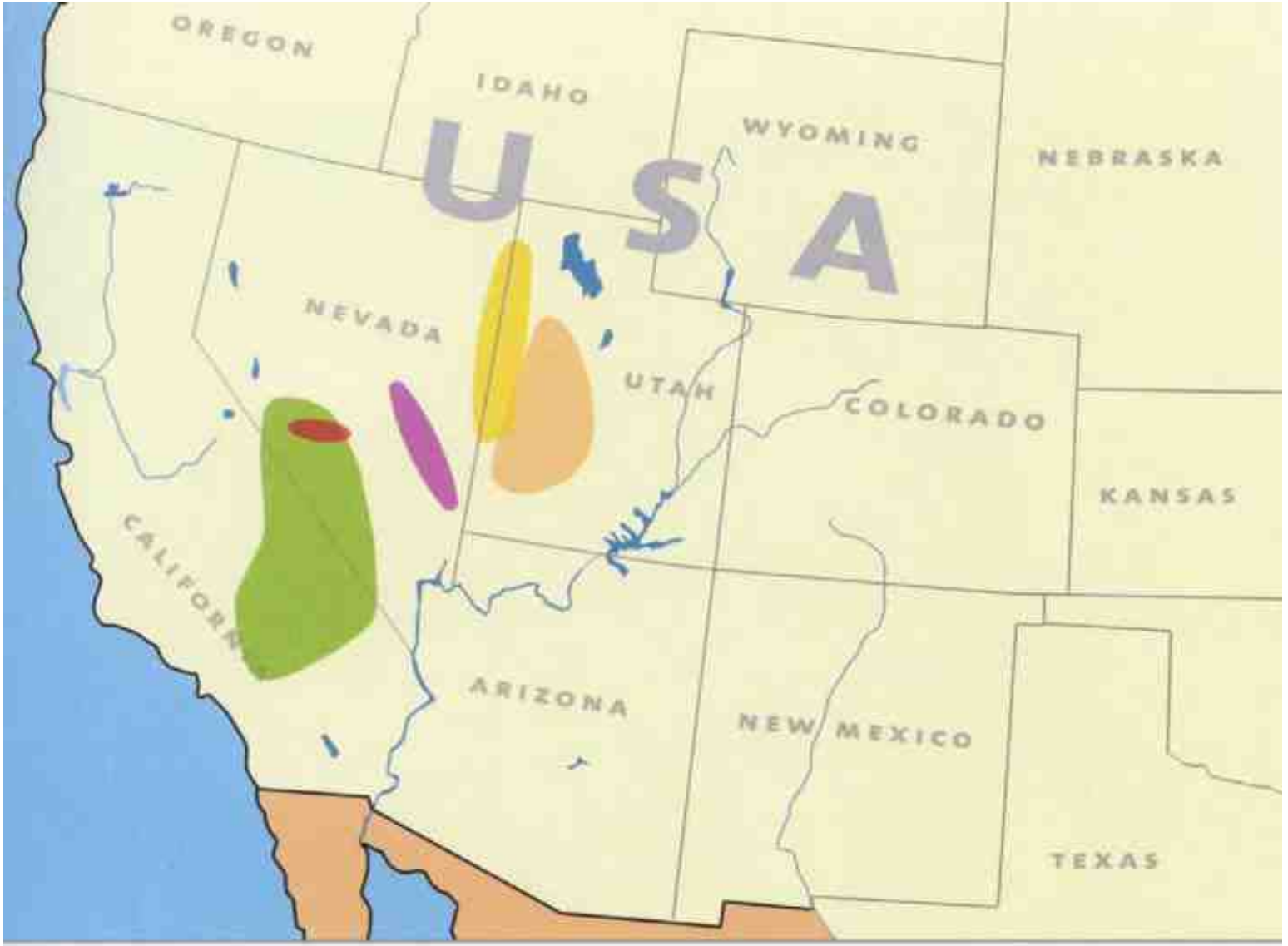
Sclerocactus wetlandicus ssp. *wetlandicus*

Sclerocactus wetlandicus ssp. *ilseae* (Scl. brevispinus)

Scl. mesae-verde – NW NM

Scl. wetlandicus – NE UT

Scl. wetlandicus/brevispinus – NE UT



SECTION *SCLEROCACTUS* HOCHSTÄTTER

- *Sclerocactus polyancistrus*
- *Sclerocactus nyensis*
- *Sclerocactus pubispinus*
- *Sclerocactus spinosior* ssp. *spinosior*
- *Sclerocactus spinosior* ssp. *blainei*

Scl. polyancistrus – Central NV

Scl. spinosior – Central UT

Scl. spinosior blainei – E NV

Scl. pubispinus – W UT

Scl. nyensis – Central NV

Scl. nyensis – Central NV

TOUMEYA PAPYRACANTHA (ENGELMANN) BRITTON & ROSE

Toumeya papyracantha (Sclerocactus papyracanthus)

T. papyracantha – Central NM

T. papyracantha – TX

Cultivation

- Potting soil
- Growth times/Watering schedule
- Seed germination

Potting soil mixes

- I have tried numerous mixes/recipes!
- Peat-based - 25% Metromedia 352, 25% white pumice, 50% builders sand.
- Coir based - 25% coir, 25% red pumice/scoria, 50% builders sand
- Native soil based - 25% fine mesa soil, 25% red pumice/scoria, 50% builders sand
- I like the native-soil base mix the best for almost everything!
- The common way for these plants to die is root-rot with the stem turning a nasty brown-orange.

Repotting?

- Most mixes need replaced every few years
- Why? Mineral buildup, depletion of nutrients, change in soil “structure”, *old & tired, ….*
- Repotting seems to work better in the early Spring – ~March in Abq. Early Fall is OK for vigorous plants.
- I like to remove most of the old soil by shaking, rubber mallet,...
- Check the roots and do surgery! When doing surgery, I use 10% clorox/water solution and a sharp knife.
- I let the roots dry and heal for a few days and then plant them in dry soil. I water lightly a few days to 2 weeks later depending on plant size & vigor, air temperature, season, *phase of the moon...*

Growth times/Watering schedule

- Most of these plants are Spring and Fall growers! (P. sileri is Spring only)
- Water (flood) them ~~weekly when they are growing! Wait until soil is slightly damp before watering again.
- Water slightly (sprinkle) when they are not growing! During the Summer, plant dehydration with wrinkling and small ones going underground is not unusual. 30% shade-cloth helps!
- During the Spring and Fall, I use a small amount of fertilizer. In a gallon of water, I put ¼ tsp Miracle Gro 20/20/20, ¼ tsp ammonium sulfate, and 1 tsp vinegar. Note that I use a native-soil mix!

Germinating seed

- Old seed is better! 3-5 years old works well. I have germinated 20 year old seed this year.
- Treating the seed like normal cactus seed (keeping it warm and moist) results in very low (~zero) germination.
- Planting the seed in pots about Jan. 1 and letting it freeze/thaw outside for the Winter and early Spring helps!
- I plant the seed in a native soil mix, burying it about 1 seed diameter and then sprinkle gravel over the top

Germinating seed

- Germination starts in mid-Spring (April) for cold-country species (P. simp., S. spin.) and may continue through Fall. Seed may take 2-3 years to germinate, so try to not over-water and rot it.
- In the Spring, sprinkle pots daily for a 2 week period and keep them damp.
- Then, mist lightly for a few weeks and try again later. You are trying to keep the seedlings alive without rotting them as well as not rotting the ungerminated seed.
- Summer rains are great! But you may need to protect the pots from excess rain if it gets truly wet. Window-screen/shade-cloth and gravel prevent soil erosion from the rain.
- Depending on the species, age,... 1% - 80% germination rates are possible. 20% is a good goal!

Growing seedlings

- Seedlings require more water than adult plants!
- Seedlings may slow down in the summer, but do not let them dry out.
- Its easy to over-water and rot them too!
- I try to repot at about 2 years of age, sooner if the pot is packed. I like the 2.5” sq, large bottom pots for a number of reasons...
- First flowers occur at 3-4 years

Germination box

A frame with window screen fits over the top.

Seedlings

Multiple germination ages – T. pap.

Multiple germination ages – S. parv.

The scenery in P/S/T country is nice too!