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Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

5. Rosa sp.

(P) See-avvie

Roots boiled, tea taken to stop diarrhoea.

6. Artemisia dracunculoides

(P) Coo-see wah-aba

Whole plant boiled, less than ½ cup taken once a day for a week as a tonic after childbirth.

7. Nicotiana attenuata

)P) Poo-ee bah-moh

NEW

Fresh moist leaves used as poultice on rheumatic pain
Eczema : poultice of fresh moist leaves applied and changed often. Used on all skin disorders.

Physic: A few leaves boiled in water. ½ cup taken.

8. Pentstemon deustus

NEW

(P) Too-buzz-sah-wop

Mashed green leaves placed on canker sores in mouth.

9. Artemisia spinescens

(P) Kuba-tah-cun-oh-quah

Stems and leaves used as a poultice to reduce swellings

10. Tetradymia comosa

(P) Toh-hah-see-goop

Stems boiled, tea for colds, cough, and stomachache.

11. Mentha occidentalis

(P) Pah-quanna-av

Tea from whole plant taken hot for cramps.
Solution used as a cooling wash for headache.

12. Parrya menziesii

NEW

(P) Toya-hoe-gob

Roots boiled, tonic after childbirth.

13. Osmorhiza occidentalis

(P) Pah-wah-gop-ish

Roots boiled, tea taken hot for stomachache
Roots boiled, tea taken for venereal disease.

14. Leptotaenia multifida

(P) Toh-sah-ah
Root chewed, smoked, and boiled for colds, cough.

15. Purshia tridentata

(P) Huh-nabbe

Leaves and stems boiled, solution used as antiseptic wash for skin eruptions.

Report No 116. (118

Oct. 1940

PAIUTE MEDICINAL USES OF SOME NEVADA PLANTS AT FALLON.

Rattlesnake Hill, Fallon Indian Colony.

Information secured by Percy Train, U.S. Bureau of Plant Industry, from the following informants:

Joe Springer, Paiute.
Frank Kaiser, Paiute.

Joe Springer is an elderly Paiute who speaks little English and Frank Kaiser is a young Paiute from Reese River who was used as an interpreter.

Medicinal Plants

1. Leptotaenia multifida

(P) Toh-aw-sah, or Toh-sah-ah

Root boiled, chewed, smoked for pneumonia colds, and influenza.

2. Purshia tridentata

(P) Huh-nabbe

Upper stems and leaves mixed with Cercocarpus ledifolius bark and boiled, tea cooled, taken often for chest pains, pain in lungs due to Tuberculosis.

3. Elymus condensatus

(P) Wah-havva

While Joe had not used this, he said his father had often told other Indians how to use the stiff blades to scrape granulated eyelids.

4. Pinus monophylla pitch

(P) Too-bap-e

Small rolled pills the size of an aspirin tablet are taken 5 at a time and swallowed to stop diarrhoea. The pitch must not be too soft when taken.

Pitch sugar candy chewed for sore throat.

5. Quamoclidion, Hermidium, or Mirabilis sp. (3 different plants See Train report. 11/29/40)

(P) He-wovey

Root boiled, small amount, less than ¼ cup taken for a physic.

*This is the first instance of a use other than for headache. It may be noted also that the Shoshones are strong on physic medicines, the Paiutes appear to use it but seldom.

6. Rosa sp.

(P) See-avvie

Leaves steeped, taken as a pleasant tea and a tonic in the spring months. beverage

7. Dalea polyadenia

(P) Moh-good-tu-hoop

Stems boiled, teataken hot for colds, stomachache.

8. Juniperus occidentalis

(P) Wah-pee

Branches burned, fumes inhaled for headache remedy.
Branches burned on top of stove as a fumigant after illness.
Berries washed, boiled, ½ cup tea taken hot to cause sweating and break up a cold.

9. Leptodactylon pungens

(P) no name known

This plant grows at Ione, and informant says the root is boiled, solution used when cool, as an eyewash.

10. Mentha occidentalis

(P) Pah-quanna-av

Tops steeped in water, used as a beverage. for stomach cramps, gas pains.

11. Agastache urticifolia

(P) Ki-bah pah-quanna-av, or:mountain water mint

Leaves only used. Fresh leaves mashed, applied to swellings.

12.Angelica sp.

(P) Bogo

Root dried in sun. Pieces chewed for sore throat.

13.Artemisia spinescans

(P) Kuba-tah-cun-oh-quah

Leaves and flowers boiled, strained, hot tea taken, ½ cup, to stop blood haemorrhages due to consumption.

Leaves only, mashed,applied as poultice to swellings and rheumatic joints.

14.Artemisia tridentata

(P) Sah-wavvy

Tops boiled, tea for colds and cough.

15.Ephedra viridis

(P) Soo-roop-ee

Tea made from boiling stems used as a beverage, as an all year round tonic for rundown condition. Tea taken often to stimulate circulation in limbs of old people.

16. Helianthella uniflora

(P) Ah-kuh

Roots mashed, heated on stove, applied hot as poultice on leg swellings or sprains. Reheated and changed often.

Report No 117 (121

PAIUTE MEDICINAL USES OF SOME NEVADA PLANTS AT FALLON, NEVADA.

Rattlesnake Hill, Fallon Indian Colony. Oct. 1940

Information secured by Percy Train, U.S. Bureau of Plant Industry, from following informants:

Annie Novice, Paiute
Bill Wiley, Paiute

Annie Novice is an elderly Paiute born in Fallon some 65 years ago. Her daughter is a cook at Stewart Indian School, and she has spent some time in Carson Valley and Virginia City. Bill Wiley was a visitor from Nixon, Pyramid Lake Indian Reservation, on his way to Stillwater to visit relatives.

Medicinal Plants

1. Psathyrotes ramosissima

(P) Coom-mash or Sebu-moh-goon-a-bu

Whole plant mashed, applied as snakebite poultice.

2. Dalea polyadenia

(P) Moh-goon-du-hoop

Stems boiled, tea for measles and stomachache.
Stems boiled, hot tea taken for colds.

3. Osmorhiza occidentalis

(P) Pah-wah-gop-ish
Roots boiled, tea taken to break a fever.
Roots boiled, taken as a mild laxative tea.
Root boiled, wash used for itching skin or skin rashes, eyewash
Roots boiled, mixed with Leptotaenia root, tea taken for venereal disease.

4. Cercocarpus ledifolius

(P) Too-be

Bark dried, boiled, tea taken over a long period for tuberculosis.

5.Monardella odoratissima

(P) no name known wild pennyroyal

Stems and flowers steeped in warm water solution used as a wash for sore and inflamed eyes.

Stems and leaves boiled, tea taken for indigestion.

Stems and leaves boiled, tea taken to settle an upset stomach after vomiting, not to cause vomiting.

6. Mentha occidentalis

(P) Pah-quanna-av

Crushed fresh leaves inhaled for headache
Poultice of crushed leaves applied to swellings.

7.Artemisia gnaphalodes

(P) Pah-wadz-oh-buh

Tops boiled, tea taken in dose of ½ cup to stop diarrhoea.

8.Artemisia spinescens

(P) Kuba-tah-cun-oh-quah

Fresh leaves mashed, poultice on swellings.
Tops boiled, hot tea taken for colds and cough.
Tops boiled, tea taken for venereal disease.

9.Artemisia tridentata

(P) Sah-wavvy

Tops boiled, hot tea taken for colds
Leaves boiled, warm solution as an antiseptic or soothing wash.

Leaves boiled, solution used as a wash on bad cuts.

10. Leptotaenia multifida

(P) Toh-sah-ah

Root boiled, chewed, smoked for colds, cough, flu.

11. Cicuta occidentalis

(P) Hah-ken-oop

Known to be poison, used by Indians for suicide.
Roots roasted in coals to a jelly-like paste
mashed, applied as warm poultice on rheumatic joints.

12. Juniperus occidentalis

(P) Wah-pee

Leaves on ebd branches boiled, tea for venereal disease.

Leaves boiled, tea taken hot for colds.

13. Zygadenus paniculatus

(P) no name known

Bulbs mashed, applied as a paste on swellings.

14. Gilia filifolia

(P) Sigh-yah-gava, or Neu-muh nooma baddo na-tizuah
(Stomach pains wash-out medicine

*Informants claim this is correct name for this plant, not Psathyrotes, as other Paiutes have given

Whole plant boiled, tea taken in dose of ½ cup for strong quick physic.
Also acts as an emetic.

15. Salvia carnosa

(P) Kah-nung- na-tizuabbe

*This name came from the Nixon man who may have heard it from California Indians as I note "ka-gung-tug-wab" as being Pit River in the combined report.

Most Paiutes call the plant, Too-bee she-gin-oop

Tea made by boiling tops used for pneumonia, ordinary colds, stomachache.

16. Pinus monophylla pitch

(P) Too-bah

Pine pitch eaten to stop diarrhoea.
Pine pitch boiled, hot tea taken for bowel trouble
" " " " " " " cold & fever

17. Veratrum californicum

(P) Pah-gah-givah, or: He-vee-nah na-tizuah
sore throat medicine

Roots mashed, bound on as poultice on sore throat, swollen neck glands due to tonsilitis

Roots boiled, tea taken for venereal disease.

18. Ephedra viridis

(P) Soo-roop-ee

Tea from stems used as a beverage and tea for colds

19. Physaria newberryi

(P) no name known except Tah-rah-gee-noob, which is also applied to all Astragalus with the big bladder pod seeds. It means, "pop when you step on it."

Roots soaked in warm water. Solution as an eyewash.

20. Pentstemon deustus

(P) no name known

Leaves boiled, solution for eyewash.

21. Purshia tridentata

(P) Huh-nabbe

Leaves and stems boiled, ½ cup taken for strong physic.
Leaves and stems boiled, tea for venereal disease
Leaves and stems boiled, solution for wash for skin eruptions, rash, itch.

Miscellaneous plant names:

Sampson)

Cleome sp. (P) Poh-goo-see-nooba * Don't ask Harry S. what this means. It will only upset his dignity and embarass you. Percy will explain if you wish!

Cymopterus sp. (P) Hoh-nee-voh-wee
Baileya pleniradiata (P) Comu-tah-cun-oh-quah.. rabbit food
Eriogonum inflatum (P) Who-gwappa-ah-soh .. wind plant
Marrubium vulgare (P) Who-see-tu-man-abba
Paeonia brownii (P) Pah-too-bah
Lewisia rediviva (P) Ki-need-yuh
Mimulus guttatus (P) Pah-tee-dah-wit, roots for food

Percy + Agnes Train

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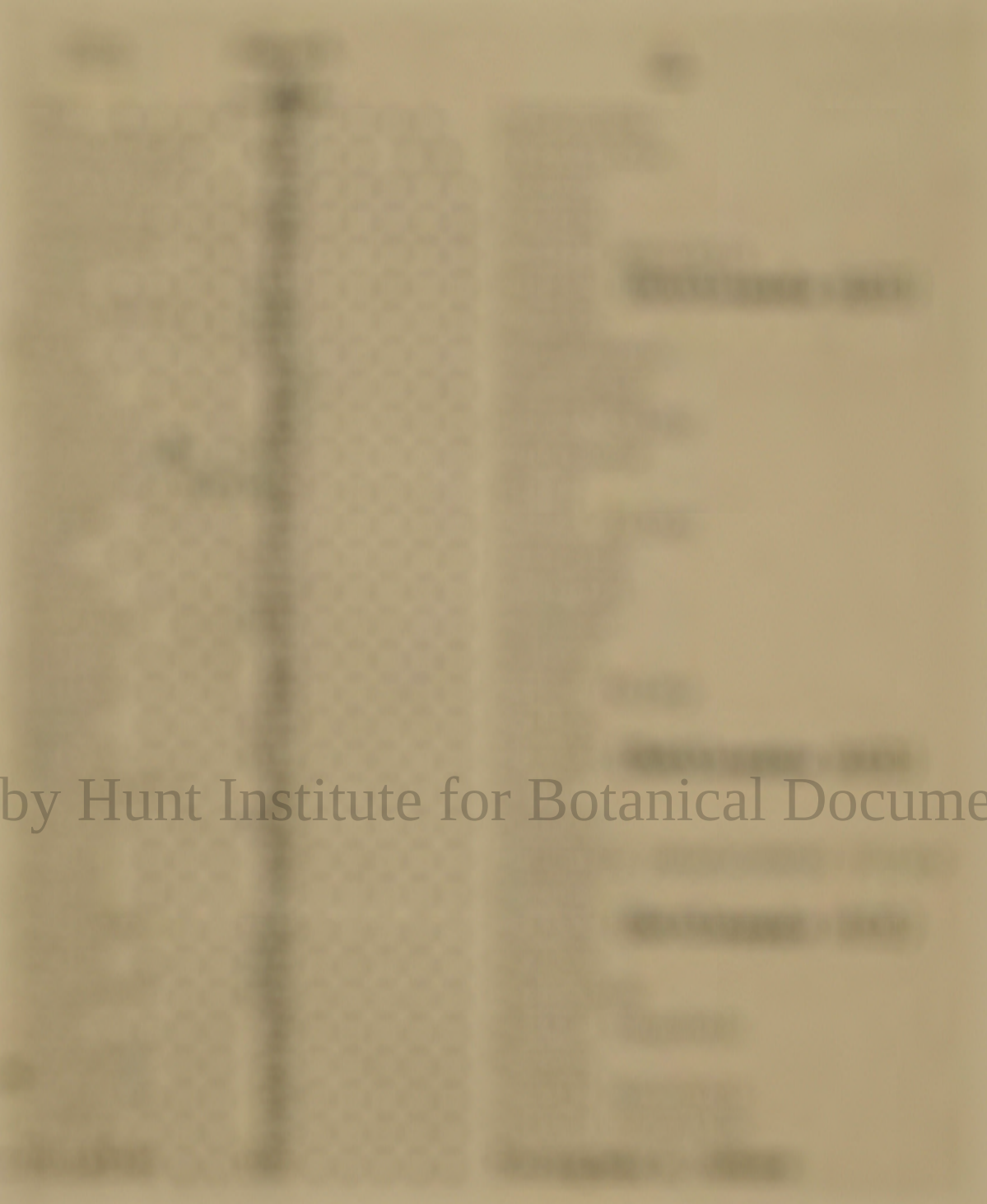
MISCELLANEOUS INDIAN PLANT NAMES. 1940 list.

at-sah tonegah (P)	Castilleja sp.
at-sah-wood-see-tahn-uh-bah (P)	Betula fontinalis
comu-tah-cun-oh-quah(rabbit food)(P)	Baileya pleniradiata
coo-see boh-go (S)	Cirsium sp.
eat-sah-at-sah-ab (P)	Cleome sp.
engat-sah-rumb (S)	Erigonum sp.
hee-voh-oh (P)	Caulanthus crassicaulis
hoh-nee-voh-we (P)	Cymopterus sp.
hoh-nee-voh-wee (P)	Cymopterus sp.
ki-need-yuh (P)	Lewisia rediviva
kuh-nib-ah)P)	Lewisia rediviva
mah-hah-goo-ah (S)	Mentzelia laevicaulis
mi-yah-pah (P)	Camassia quamash
moo-ee-ah-genga (S)	Equisetum sp.
nah-kah-no-gob (P)	Lupinus sp.
pah-doo-sie (P)	Allium sp.
pah-roh-tim-ah (S)	Geranium viscosissimum
pah-tee-dah-wit(roots for food)(P)	Mimulus guttatus
poh-goo-see-nooba (P)	Cleome sp.
poo-goosie-noo-ba (P)	Stanleya sp.
quee-duh-tee-nava (P)	Heliotropium sp.
See-tah (P)	Triglochin maritima
tah-pee-boh (S)	Cymopterus sp.
tah-uh-be (P)	Atriplex lentiformis
tah-qoop (P)	Balsamorhiza serrata
toh-tone-e-gahdah (P)	Castilleja sp.
too-coo-ba tonegan (P)	Oenothera sp.
too-coo-sah yah-gaba (P)	Pentstemon acuminatus

too-hoo (P)	Orobanche sp.
too-hoo hah-vah (P)	Heliotropium xerophilum
toy-ee-buh (P)	Typha latifolia
wee-hah-pon-ub (P)	Asclepias mexicana
who-goo-up (P)	Balsamorhiza hirsuta
who-gwappa-ah-soh(wind plant)(P)	Eriogonum inflatum
who-sah-be (P)	Betula fontinalis
wohzeek-quash (S)	Wyethia amplexicaulis
wong-guh-voo (S)	Balsamorhiza hirsuta
wye-ub (P)	Elymus sp.
yee-ah hoy-ah(evening flower)(S)	Oenothera hookeri



Train, Percy + Agnes

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ANALYSIS MATERIAL TO BE COLLECTED —1940

INDIAN NAME	COMMON NAME	USE
Cau'gee (P)	.....	Food
Ha'Kee'no'bu (P)	Wild Parsnip	Commit suicide
Ha'na'bee (S)	Buck Brush	Purge and emetic
Na'mu'good'du (P)	.....	Root-Sore throat & Colds Leaves-Rheumatism
Tui'pee (P)	Mahogony	Powdered root-sores Bark-Children's diarrhoea
Ca'ta'ree (P) Shaw'wa'eh (W)	Evergreen tree	Sap, Bark-Consumption Sap-Sores
Tah'ma'chee'wah (P)	.....	Food
Wah'da'ecau'bu (P)	.....	Roots-Indigestion
He'wor'bee (P)	.....	Root-delirium, sores
Pie'mu'cha'cau'pah (P)	.....	Root-Sores, Influenza
Orr'bu'na'tu'zuaah (P)	.....	Root-Cuts, Swellings, Any skin injury, influenza
Ah'nie (P)	.....	Eggs, Flu, T. B.
Pee'Poss (P)	Stink Bug	Eaten-T. B.
Hoo'ni'pui (P)	Small potatoes	Food
Hoo'pu' (P)	.....	Berries-Food
Wer'pui (P)	Wild current	Berries-Food
Ca'gnea'yah (P)	.....	Roots-Food
Pah'hee (P)	Tall Sunflower	Seeds-Food
Te'u'pah (P)	Pine nuts	Food
Ah'cha'Toya'wam (P)	Wild raspberry	Flu
Bah'ha'whi'da' (P)	Timber ants	T. B., Malaria fever
Pah'de'cha'quah	.....	Food
Pee'sha'pee (P)	Red mineral	Sores
Tau'jaah (P)	.....	Root-Colds, sore throat, swellings. Sap-Sores

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ANALYSIS MATERIAL TO BE COLLECTED

INDIAN NAME	COMMON NAME	USE
Pah'ya'pah	.....	Roots-Food
Pah'wa'cau'pish'	.....	Eye wash-Gonorrhoea Cuts-Bruises
Ya'pah	Sweet Indian Potato	Food
Hoo'ni'pui	Indian Sweet Potato	Food
Waah'waah'tu	Indian Potato	Food
Ya'huts	.....	Root-Food
Oh'paw'cha	.....	Leaves-Influenza
Wa'jau'bu	.....	Grippe
Ku'ha	.....	Seeds-Food
Tau'chee'tau'kneega'tu	.....	Root-Colds, Sore throat, cuts and sores, kidneys. Leaves-T. B., Cold.
Neu'du'pah'eh (P)	.....	Food
Ah'rey (P)	.....	Seed-Food
Wa'pee (P) Saa'Wah'bee (S)	..... Juniper tree	..... Leaves-Cold, Measles.
Tu'pah (P) Wa'pee (S)	Pine-nut Tree " " " " "	Sap-Gonorrhoea Pitch wood-Gonorrhoea Needles-Gonorrhoea
Baw'haw'beeh (S)	Sage brush	Leaves-Poisoning, Blood.
Ko'see'ah'ku Ah'Ku	Small Sunflower " " " " "	Seeds-Food
Hu'gneau (P)	.....	Roots-Food
Cha'na'bee (P),(S)	.....	Leaves-Vomit, Bowels
Tue'pee (P) Too'do'beeh (S)	.....	Bark-Children's Diarrhoea
Cau'gu'ah'da'na'bu (P) (See) Cau'aw'bu (P) Ta'bau'see'gueh (S)	.....	Root-Swelling, Rheumatism
Na'koo (P)	.....	Water Eat-Diarrhoea

ANALYSIS MATERIAL TO BE COLLECTED

INDIAN NAME	COMMON NAME	USE
Tau'no'caw'cha (P)	.....	Roots-Food, Urine
See'qua'tam (S)	.....	Roots-Bladder, Urine
Hee'paw' (S) Na'tu'sua (S)	.....	Leaves-Diarrhoea, Bowel disorders.
Ca'ju'kee'na'tu'sua (S)	.....	Roots-Purging
Saw'ree (S)	Aspen tree	Bark-Lung trouble, T. B.
Tu'ra'saa (P)	Love vine	Leaves, Branches-Preventive.
Ta'baw'see'quch (S)	.....	Root-numb(anesthetic)
Nu'mu'na'ca (P) Jau'hit'ta'ca (S)	Mushroom	Food
Pah'see'vee (P) See'vee (S)	.....	Blades-cold, fever.
Hoo'na'tu'su'ah (S)	..... .	Root-Sores, Burns, Diarrhoes.
Cha'ya'cu'pah (P) Hu'na'tu'su'ah (S)	.....	Plant-Liver.
Wou'ne'pe'ha'ree (P)	.....	Sap-Blood trouble, sore throat, cuts, and sores.
Ji'ney'boo'pah (P)	.....	Roots-Inflammation of eyes, swellings or sprains.
Wee'ne'da	.....	Roots, Seeds-Food
Cau'paw'ne'sha (P)	.....	Hunting
Ku'da'gu'pah-Na'tu'zuaah (P)	.....	Root, Tops-Liniment.
Tu'ka'wa'sun (P)	.....	Rat urine-Gonorrhoea
Hu'na'tu'su'ah (S)	.....	Plant-liver ailments.
Tu'ree'see'gu'no (P)	White sage	Leaves-Eye bath & Compress
Ku'pa'tu'ca'nu'ca (P)	.....	Leaves-Bruises.

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List No. 121

NEVADA DRUG PLANTS, ALPHABETICAL BY INDIAN NAME, COMPILED 1938.
Jim Henrichs

~~Index of Common~~ Names of Nevada ~~Indian~~ Indian Drug Plants.

ack-wee-donezee-yuh (S)	Pentstemon
ah-cha-toya-wam (P)	Rubus
ah-dye-eh-natu-zuaah	Solanum nigrum
ah-kerh (P)	Balsamorhiza sagittata
ah-kerh	Wyethia helianthoides Nutt
ah-kerh zip (S)	Wyethia
ah-ku (P)	Wyethia mollis
ah-kuh (S)	Helianthella uniflora
ah-ku-pu	?
ahn-guoip	Cucurbita foetidissima
ah-no-cup	Cucurbita foetidissima
ah-paw-cha (P)	?
ah wapi	Krameria canescens
ah-zah-div-oh-wip (S)	Crepis scopulorum
andra-vitch-gwanna (P & S)	Hypericum scouleri
a-ne	Orobanche ?
ane (P)	Orobanche
ange-tabishapi (S)	Chrysothamnus nauseosus spp.
ange-tabishap (P & S)	Tetradymia glabrata
aqui-he-binga (S)	Gilia floccosa
arno-cup (Moapa)	Cucurbita foetidissima
arnoko (S)	Cucurbita foetidissima
attem (S)	Dondia occidentalis
baal (W)	Juniperus
baduppa (W)	Frasera ?
baguana (S)	Mentha
bag-um-boh-nib (S)	Smilacina liliacea

ba-habe (S)	Artemisia sp
ba-habe (S)	Artemisia tridentata
bah-gun-don-bomb (S)	Smilacina liliacea
bah-hoe-gupi (S)	Equisetum sp.
bah-hoe-zee (S)	Eriogonum polifolium Benth. (?)
bah-hoe-zee (S)	Eriogonum umbellatum
bah-see-noo (S)	Equisetum sp.
bahn-zon-ip (S)	Prunus andersonii
bah-see-noo (S)	Equisetum
bah-soh-nip (S)	Catabrosa aquatica
bah-vah-hoe-be (S)	Artemisia tridentata
bal-nat-san (W)	Purshia tridentata
banabe (S)	Artemisia tridentata
bas-oh-nup (S)	Gilia congesta ?
bas-oh-wip (S)	Osmorrhiza occidentalis
bas-on-nup (S)	Gilia congesta
bass-o-wep (S)	Cymopterus globosus
bassowep (S)	Osmorrhiza occidentalis
batipa (S)	Paeonia brownii
batipava	Paeonia brownii
batipi (P)	Paeonia brownii
bau-hau-beeh (S)	Artemisia tridentata
bava-hope (S)	Artemisia
bav-oh-hoe (S)	Artemisia gnaphalodes
bav-oh-hoe-be (S)	Artemisia discolor
bawanater-sowah (S)	Arabis pulchra
bawa-na-tizua (P)	Chaenactis douglasii
baw-buh (W)	Chrysothamnus nauseosus
baw-gaw (S)	Veratrum

bawhobe (S)	Artemisia tridentata
bawia (P)	Agastache
baw-iumbe (S)	Artemisia tridentata
baw-oh-hoe (S)	Artemisia gnaphalodes
bay-quee-nut-zooh (S)	Chaenactis
be-ah boh-quah (S)	?
be-ah-kuk (S)	Wyethia amplexicaulis
bee-ah-du-hu (N. NevadaS)	Gilia congesta
bee-hee-vah (Austin S)	Gilia congesta
Bee-sha-no-go (S)	Crepis acuminata
bee-sha-wannup (Ely S)	Asclepias speciosa
behabe	Pinus - pine tree sugar
behabe (P)	Phragmites communis
bia bogo	Angelica breweri
biabogo (S)	Angelica breweri
bia-dubassop (S)	Veratrum
bi-heva (S)	Gilia pumila
bija-naka	Rumex crispus L.
bo-agup (P)	Balsamorhiza hookeri
bogo (S)	Angelica breweri
bo-gumbe (P)	Ribes aureum Pursh
boh-hoe-hi (S)	Artemisia tridentata
boh-so-ob (S)	Tetradymia spinosa
boo-eep-nut-zooh (Austin S)	Linum lewisii
bossoguey (S)	Osmorrhiza occidentalis
bossoquey (Elko S)	Osmorrhiza occidentalis
bossowey (Elko S)	Osmorrhiza occidentalis
bossowoip (S)	Osmorrhiza occidentalis
bossugwey	Thalictrum

brass buttons	Erigeron concinnus apahactis
buncjnut (Pap.); broomrape	Orobanche sp.
bucjnut (Pap.)	Simmondsia californica
butiwe (P)	Veratrum californicum
butter balls	Eriogonum ovalifolium
ca-ju-ku na-tu-sua (S)	?
canaigre	Rumex hymenosepalus
ca-ta-vee (P)	Abies concolor
cau gee (P)	Allium sp.
cau-gee-ah-da-na-bu (P)	?
cha-na-bee (P)	Prunus andersonii
cha-ya-cu-pah (P)	?
cha ya ka ba (P)	Hugelia filifolia Nutt.
ch-ponip	Anemopsis californica
chu-dupe (P)	Ephredra nevadensis ?
ci koi (Papagos)	Covillea tridentata
cikoi-haap	Insect galls on Covillea tridentata
coo-see-see-bup (S)	Tetradymia comosa
coo-see seebupi (S)	Tetradymia comosa
corren-nup pah-vee (P)	Berberis repens
co-see-suh-ee-wee (P)	Salix luteoserica
cupi-chuk (S)	Lupinus sp.
da-bel (W)	Artemisia tridentata
dabi-segaw (S)	Zygadenus
dabi-segaw (S)	Zygadenus paniculatus S. Wats.
daw-ji-yan (S)	Achillea lanulosa
daw-see-daya (S)	Iris missouriensis

daw-see-doya (S)	Iris missouriensis
deep-taw-ne-gah (S)	Phlox stansburyi
deep tonega (S)	Phlox stansburyi
de-vas (S) (seed)	Paeonia brownii
dimbashego (S)	Pentstemon deustus
dimbe-see-bup-ee (S)	Aplopappus nanus
din-ah-ee-go	Phlox canescens
dobi-segaw (P)	Zygadenus paniculatus
dodsa	Leptotaenia multifida
dogowah-gwanna (S)	Tetradymia spinosa
doh-numbe (S)	Cercocarpus ledifolius
doona (S)	Carum
donzia	Arabis
doo maya (S)	Arctostaphlos neradensis
doot-see-ab (S)	Artemisia spinescens
doot-un-zip (S)	Iva axillaris
doo-yah-gum-hoo (W)	Paeonia bwownii
dotsi-tone-e-ga (P)	Heracleum lanatum
doza (S)	Leptotaenia
duabove	Parosela polyadenia
duh-na-ee-go (S)	Gilia filifolia
dum-bassop (S)	? = Veratrum ?
dunie	?
dunumbe (S)	Cercocarpus
durumbe (S)	Ephedra
durunzip (S)	Iva axillaris
e-bee	white earth
ee-shu-tone-ub (P)	Smilacina liliacea
ee-shu-wannup (S)	Clematis
egui-tonega (P)	Linum

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e-kee-voe-eh-ta (P)	Asclepias sp. ?
e-kee-voe-eh-ta (P)	Asclepias speciosa
enga-mowanna (S)	Gilia aggregata
enga-mutz-oh-wanna (Eureka S)	Aquilegia formosa
enga-pah-wee-ub (S)	Rumex sp.
enga-pawia (S)	Rumex crispus L.
enga wana (S)	Apocynum hypericifolium
equi-tone-zee-ah (S)	Erigeron
e-sa-donup (P)	Smilacina stellata
esag wena (P)	Thalictrum
e-sag-wena (P)	Clematis
esagwena (P)	Clematis ligusticifolia
esah-wana (S)	Clematis ligusticifolia
eshadonup (P)	Smilacina
e-shuh-tone-ub (P)	Smilacina liliacea

four o'clock	Hermidium alipes
goina-kumbe (S)	Sphaeralcea sp.
goina kumbe (S)	Sphaeralcea ambigua
goosh-hube (S)	Salix exigua Nutt.
goos-pah	?
goina-kumbe (S)	Sphaeralcea
goosh-hube (S)	Salix exigua
gunga (S)	Lewisia rediviva
guy mohpu (P)	Monardella odoratissima
hah-tee (S)	Cicuta occidentalis
hah-tee (S)	Conium maculatum

hah-ton-bish (S)	Cicuta occidentalis
ha-ka-nup (P)	Cicuta occidentalis Greene
ha-kee-no-bu (P)	Cicuta occidentalis
hape	Wyethia amplexicaulis
haw-ken-noop (P)	Angelica breweri (Apparently a mistake in collecting, th should be Cicuta.) (W.A.A.)
haw-ken-noop (P)	Cicuta occidentalis
hee-paw na-tu-zuaah (S)	?
he-na-va	Purshia tridentata
he-wov-bee (P)	Hermidium alipes
he-wo-ve	Rumex
he wovey (P&S)	Hermidium alipes
hewovey (P)	Hesperonia retrorsa
hoe-kni (S)	Gilia congesta ?
hoe-kni (S)	Gilia pumila Nutt.
hoeni (S)	Gilia pumila
hoe-ni (S)	Gilia congesta
hoh-nib (S)	Lomatium sp.
hohohwi (Pap.)	Simmondsia californica
homo'mo dap'apele (W)	?
hoo-boo (P)	Sambucus melanocarpa
ho-o-kiwa (Pap.)	Cereus greggii
hoona (S)	Gilia pumila Nutt.
hoo-nah (S)	Gilia pumila
hoo-na-via (S)	Sambucus melanocarpa
hooni (S)	Gilia pumila
hooni (Elko)	Gilia pumila
hoo-nut-zooh (S)	Aster leucanthemifolius
hoowi-up ?	Alnus

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howumba	Juniperus sibirica
huh-nabbe (S)	Cowania stansburyiana
huh-nabbe	Purshia tridentata
huh-na-bee (P)	Purshia tridentata
hunabe	Purshia
hunabe (P&S)	Purshia tridentata
hunape (S)	Purshia tridentata
nu-na-tu-su-ah (S)	?
hunavi (S)	Purshia tridentata
ik-nish (Klamath)	Cymopterus globosus
impetigo plant	Allionia
impetigo plant	Mirabilis laevis, Hermidium alipes
ishubgoofwa (P)	Argemone hispida
i'zaibe (P)	?
ja-ney-boo-pah (P)	?
jojoba (Pap.)	Simmondsia californica
jue-tu-pee (P)	Ephedra
ka-gung-tug-wab (Pit River)	Salvia carnosa
kane-na-tesua (P)	?
ka-ner-theh (P)	Lewisia rediviva
kandgda (P)	Lewisia rediviva
kanutch (P)	Lewisia rediviva
ka-wan-nat-us-wape (powdered twigs)	Ephedra
kawdanup (P)	Berberis repens
key-gah-da-goop (P)	Balsamorhiza hirsuta ?
key-gah-da-goop (P)	Balsamorrhiza hirsuta
kih-nid-yuh (P)	Lewisia rediviva
Kinni-Kinnic (S)	Arctostaphylos nevadensis

koge-u-donup (P)	Zygadenus venenosus
koggie-a-den-up (P)	Zygadenus
kogi-a-donup (P)	Zygadenus
kogi-a-donup (S)	Zygadenus paniculatus
kogi-desme (W)	Zygadenus
koh-see-wah-ab (P)	Artemisia ghaphlodes
koide (P)	Cirsium
ko-no-gip (S)	Sambucus
koono-gibu (P)	Sambucus
koon-no-gip (P)	Sambucus caerulea
koon-noo-gee (S)	Sambucus
koon-noo-gip (P)	Sambucus melanocarpa
kose-wich	Asclepias speciosa
ko-se wi up (P)	Artemisia gnaphalodes Nutt.
ko-se-wiup (P&S)	Artemisia gnaphalodes Nutt.
kosiak	Balsamorhiza sagittata
kosiak (P&S)	Wyethia ?
kosi-tsube (P)	Salix argophylla Nutt.
kube (P)	Artemisia spinescens
ku-da-gu-pah-na-tu-zuaah (P)	?
kuh-eeb tah-kuh-no-gwah (squirrel's food) (P)	Artemisia spinescens
kui (Pap.)	Prosopis velutina
kui-haap (Pap.)	Phoradendron californicum
ku-na-tu-ca-nu-ca (P)	?
ku-pa-tu-ca-nu-ca (P)	Artemisia ?
ku-si-ak (S)	Balsamorrhiza sagittata
ku-siginobe (S)	?
linná-huh-nabbe (Ely S)	Purshia tridentata

little he-wa-be	?
little hewovey (P)	Hesperonia retrorsa
mag-gel (W)	Ephedra
ma-good-du-hoo	Parosela polyadenia (Torr.) Heller
ma-goo-du-hoo (S)	Hesperonia retrorsa
ma-good-te-hoo (P)	Parosela polyadenia
ma goo te-hup (S)	Parosela polyadenia
ma-go-te-hupi	Parosela polyadenia
magoo-ti-hope	Parosela ?
ma mosee-yait (W)	Artemisia
mogoko	Phragmites communis
mo-goon-du-hu (S)	Parosela polyadenia
mogurup	Thamnosma montanum
moip (S)	Datura meteloides ?
mo-moap	Datura meteloides
momono kaiyu (P)	Eryggium alismaefolium
moss, yellow	Everina vulpina
mo-zookpaddas (W)	Cicuta occidentalis
mu-gu-ter-hoo-pee (P)	Parosela polyadenia
mu-gu-tu-hoo-pee (P)	Parosela polyadenia
mu-ha (P)	Sphaeralcea
mu-ha (P)	Sphaeralcea ambigua
na-boo (P)	?
na-mu-good-du (P)	Pentstemon deustus
nah-ga-ha bah-hoe-be (S)	Tetradymia canescens inermis ?
na-ka-donup	Eriogonum ovalifolium
naka-donup (P)	Eriogonum caespitosum Nutt.

na-ka-donup (P&S)	Eriogonum umbellatum
na-mu-good-du (P)	Pentstemon deustus ?
nemasaw (S)	Lithospermum ruderale
nemishaw (S)	Lithospermum ruderale
newa-tama (P)	Paeonia brownii
nom-ish-aw (S)	Lithospermum
notmisha (S)	Lithospermum ruderale
numa-naka (S)	Sphaeralcea
numu-sa-na-caw (P)	Lygodesmia spinosa
nupitchi (S)	Anemopsis californica
nut-zooh-boh-hombi (S)	Abronia turbinata
oha yanga (S)	?
oh-ha koy-ah (S)	Eriogonum ovalifolium
oh-ha-see-bup-e (S)	Chrysothamnus viscidiflorus
oh-ha tone-zee-ah (S)	Eriogonum umbellatum
oh-hoe-buh (P)	Elymus condensatus
ooh-ess-saun-um (S)	Evernia vulpina
oo-see-gwadsebu (P)	Epilobium ?
ootsolich (W)	?
orr-bu-na-tu-zuaah (P)	?
pa-al (W)	Juniperus utahensis
paal-luwe-it (W)	Monardella odoratissima
pa-au-bis	Ribes
pa-au-bis (P)	Ribes aureum Pursh
pabui sawabae (P)	Artemisia gnaphalodes Nutt.
pa-ca-ge-vie (P)	Aralia ?
paguana (S)	Mentha penardi

pa guidobe	Porophyllum leucospermum
pah-ca-gee-bu (P)	Veratrum californicum
pah-hoé-be (P)	Artemisia tridentata
pah-kwana (S)	Mentha
pah-na-din (S)	Paeonia brownii
pahobe (S)	Artemisia tridentata
pah-oh-pimb	Acacia
pah-qwanna (S)	Mentha
pah-rig-quibby (P)	Salix nigra
pah-ronzee-yah (S)	Achillea lanulosa
pah rump	Sorghum halapense (L.) Pers.
pah-sag-ee-duh (S)	Iris missouriensis
pah-see-vee (P)	?
pah-sue-gee-pu	Paeonia brownii
pah-vah-bah-hoe-be (S)	Tetradymia canescens inermis ?
pah-wa-cau-pish (P)	?
pah-wah-capi (S)	Osmorrhiza occidentalis
pah-wah-guh (S)	Aquilegia formosa
pah-waw-cub (P)	Aquilegia formosa
pah-weé-ub (P)	Rumex sp.
pah wha na habu (P)	Aquilegia
pah-wah-pee (P)	Libocedrus decurrens
pah-what-na-abe (P)	Mimulus guttatus
pah-wee-ub (P)	Rumex
pahwi (Pap.)	Phaseolus acutifolius
pam-i-ooh (Ely S)	Aquilegia formosa
pam-moo-hah (S)	Allium sp.
pannonzia (S)	Achillea lanulosa
pa-no-sa-mobe	Polygonum

pa-no-sa-mobe	Hermidium alipes
paquanah (S)	Veronica (?) Spec. n. g. should be Mo Mentha
paquanah (P)	Mentha penardi
para gibe (P)	Gilia aggregata
pa-shoa-eh (W)	Salix
pasowoip (S)	Osmorrhiza occidentalis
pasowoip (Ruby Valley S)	Osmorrhiza occidentalis
pas-sa-gida (S)	Iris missouriensis
pat-sur-malle (W)	Rosa
pav-ah-hoe (Ely S)	Berberis repens
pava-hobe (S)	Artemisia gnaphalodes
pava-hobe (S)	Tetradymia canescens
pawaga (P)	Thalictrum
pa-wa-rabish (P)	?
pa-we-na-tus-wa (P)	Gilia floccosa
pa-we-up (P)	Rumex crispus L.
pawia	Rumex sp.
pawiup (P)	Rumex and Polygonum mixed
pa-wi-up (P)	Rumex
pawiup	Rumex crispus L.
pee-gee-wanna (S) (Means milk hemp)	Asclepias speciosa
pee-sha-pee (P)	red earth
pie-mu-cha-can-pah (P)	?
pu-ena-nut-tiz-zooh (S)	Linum lewisii
po-enna-tiz-wah (P)	Linum lewisii
pogombi (S)	Ribes sp.
pogu-danop (P)	Iris missouriensis
poh-oh-bis (P)	Ribes
poku-erop (P) (Means Poison)	Iris missouriensis Nutt.

poo-eena-nut-tiz-zooh (S)	Linum lewisii
poo-eena-tiz-wah (P)	Linum lewisii
poo-gooey-ru- (P)	Iris missouriensis
poohinatesua (S)	Aplopappus stenophyllus Gray
poohinatesua (S)	Pentstemon deustus ?
poo-hinatsu (P)	Linum lewisii
poohi-tonegezianga	Linum
pooh-wee-buh-hoon (Ft. McDermitt) (P)	Nicotiana attenuata
poonone (S)	Curcurbita foetidissima
puce saw-wa-bae	Salvia carnosa
pu-ena-nut-tis-zooh (S)	Linum lewisii
pu-ena-tiz-wah (P)	Linum lewisii
puhi-pah-moo (P) (Owyhee)	Nicotiana attenuata
pui-bax (S)	Nicotiana attenuata
pwui-bamo (P)	Nicotiana
pyno-zocca (P)	Osmorhiza ?

quee-bah-noop (P)	Urtica breweri
quee-duh-kwana (P)	Lupinus
quee-duh-qwanna (S)	Cleome serrulata
quee-duh-quen-ah (S)	Lupinus sp.
que-quawn-oop	Urtica
ques-on-quas	Linum
quita woyumb	Linum NHs
quita woyumb (S)	Linum lewisii
quoin-oh-combee (S)	Sphaeralcea
quoin-oh-conbi (S)	Sphaeralcea munroana
q'we-ba-no-ber (P)	Urtica breweri

red four o'clock	Hermidium alipes

saa-mah-bee (S)	Juniperus
sada-kaitsa (S)	Balsamorhiza sagittata
sa-gadonzia (S)	Phlox stansburyi
saga donzia (S)	Arenaria
sagotiembuh (S)	Berberis repens
sah-nah-goop-a-rah (S)	Grindelia perennis
sah-nah-goop-ah-rah (S)	Grindelia squarrosa serrulata
sah-tone-zee (Eureka S)	Gilia congesta
sah-tone-zee (Eureka)	Gilia pumila
sah-tone-zee-yung (Eureka S)	Gilia congesta
sah-wavvy (P)	Artemisia tridentata
sah-av-ah (P); sah-avah (P)	any weed, such as dandelion
sah-wavvy (P)	Artemisia tridentata
sammabe (S)	Juniperus utahensis
sam-mape (S) - berries	Juniperus utahensis
sammopo (S)	Juniperus
samoko (S)	Ptiloria exigua pentachaeta
samoko (S)	Ptiloria pauciflora
sana-abu (P)	Aplopappus stenophyllus
sanaka-para (S)	Grindelia squarrosa serrulata
sanape (P&S)	Pinus
sawabae (P) & (S)	Salvia carnosa Dougl.
sawabae (P)	Artemisia
sawabae (P)	Artemisia tridentata
sa-wa-bee (P)	Artemisia tridentata
saw-vee (S)	Populus
scu-wa-ta-paw-jits (S)	Gilia aggregata
sebu (S)	Pentstemon deustus
sebu mogoonobu (P)	Psathyrotes annua

see-a-bui (Eureka S)	Rosa sp.
see-avvy (P)	Rosa
see-a-wimb (Moapa)	Rhus trilobata
see-babe (S)	Tetradymia canescens inermis
seebape (S)	Chrysothamnus nauseosus spp.
see-cau-ah-bu (P)	?
see-goop (P)	Chrysothamnus
see-gup-ee (P)	Aplopappus nanus
see-gu-pee (P)	Chrysothamnus nauseosus var.
see gu pee (P)	Chrysothamnus viscidiflorus
see kope	Apocynum cannabinum var. glaberimum
see-kope (S)	Lygodesmia
see kope (S)	Ptiloria exigua
see-lat-aho (W)	Lilium parvum ?
see-na-tiva (P)	Mentha
see-raw-buh	Zygadenus
see-vah-sun-e-quoh (S)	Chrysothamnus nauseosus, var. ~~consimil~~ consimilis Hall
see-vee (S)	?
seg-we-bee (P&S)	Eriogonum sphaerocephalum
sessop (S)	Chrysothamnus nauseosus spp.
shapui (P)	Smilacina stellata
shapui-tsi ni-bube (S)	Smilacina
shaw-wa-eh (W)	Abies concolor
she-dimaba (W)	Smilacina ?
shee-shub (S)	Eurotia lanata
shugilatse (W)	Balsamorhiza sagittata
si-gua-gump (P&S)	Leucocrinum montanum
sigupi (P)	Chrysothamnus nauseosus, ~~var. consimil~~ consimilis Hall
singabe	Populus
singabe	Populus trichocarpa

sissop (S)	Eurotia lanata
sissop (P&S)	Eurotia subspinosa Rudb.
siwitcuris (Pap.)	Rumex hymenosepalus
soanatesua (P)	Tetradymia canescens inermis
soanatesua (P&S)	Tetradymia glabrata
soarungtse-anga (S)	Gilia pumila
sogo divohah (S)	Phlox canescens
so-go du-yembi (Eureka S)	Berberis repens
sogo-tiembuh (S)	Berberis repens
soo-rumpee (S)	Ephedra sp.
stop	Aster scopulorum
sugilatse (W)	Balsamorhiza sagittata
sun-oss-ee-goop (P)	Parosela polyadenia
su-qua-tam (S)	?
ta-bas-see-gueh (S)	?
taba emlu (W)	Thalictrum
tabassop (P)	Veratrum californicum
tah-beese-ee-goh (S)	Zygadenus
tah-beese-see-goop (P)	Chrysothamnus viscidiflorus
tah-beese-ee-goop	Tetradymia canescens
tahp-a-day (Eureka S)	Physaria
tah-see-vuh (P)	Sericotheca microphylla
tah-veh-see-go (S)	Zygadenus sp.
tapeka (S)	Angelica breweri
ta-se-tanega (P)	Achillea lanulosa
ta-su-pa (P)	Leptotaenia multifida
tau-chee-tau-knee-gah-tu (P)	Angelica sp.

tau-chee-tau-ne-gah (P)	Mentha penardi
tau-jaah (P)	Leptotaenia multifida
tea-con-no-give (P)	Rumex
tem paiute (S)	Gilia aggregata
tem paiute (S)	Gilia aggregata
ten-paiute (S)	Gilia aggregata
ter-cau-no-give	Rumex sp.
thin-na (S)	Cirsium
tia-aug-wa-ni-gib (Pit River)	?
tia-eng-wa-ni-gib	?
tim-ba-hay (S)	Gilia aggregata ?
timpiute	Gilia aggregata
tin-ah-ee-go (S)	Leptodactylon pungens
tin-ah-ee-go (S)	Lygodesmia spinosa
tin-ah-piute (Austin S)	Gilia aggregata
ting-wee-buh (S)	Chamaebatiaria millefolium
tobassop	Veratrum californicum
tobi (P)	Cercocarpus
todsa (P&S)	Leptotaenia multifida
todsa (S)	Leptotaenia
todsa (P)	Leptotaenia multifida
todsa (P&S)	Leptotaenia multifida
todzi-tanega (P)	Achillea lanulosa Nutt.
todzi-tinne-abu (P)	?
todzi-tonega (P)	Achillea lanulosa
toe-tee-tone-ega (P)	Achillea lanulosa
tohaak	Wyethia helianthoides Nutt.
toh-aw-saw-ve (P) (S)	Leptotaenia multifida

toh-gowah-dama (P&S) (means snake teeth)	Tetradymia spinosa
toh-hawk-quee (P)	Asclepias
toh-no-be (S)	Lygodesmia spinosa
toh-rumbe (S)	Ephedra sp.
toh-sup (S)	Leptotaenia multifida
toh-yuh-tu-yuh-bu-huh (S)	Berberis repens
toisa (S)	Leptotaenia multifida (?)
toisa (P&S)	Leptotaenia multifida
tok-quee (S)	Astragalus sp.
toobe (P)	Cercocarpus ledifolius
toobe-buh-ah (P)	Cercocarpus ledifolius Nutt.
too-bee (P)	Cercocarpus ledifolius
toobi (P)	Cercocarpus ledifolius
too-buss-zee-bee (P)	Pentstemon deustus
too-do-beeh (S)	Cercocarpus ledifolius
too-du-zip (S)	Iva axillaris
toom-bee see-bupe (S)	Gutierrezia sp.
too-numbe (S)	Cercocarpus ledifolius
too-room-be (S)	Ephedra nevadensis
too-rumbi (S)	Ephedra viridis
to-tee-tone-e-ga (P)	Achillea lanulosa
tots-seeb (S)	Sericotheca microphylla
towotsic	Juniperus sibirica
toya-pah-kwana (S)	Agastache urticifolia
toya-tim-ba-zip (S)	Salvia carnosa
toya-tim-buzz-ip (P)	Salvia carnosa
toya-tu-yah-bu-huh (Owyhee S)	Berberis repens
twagida (S)	Argemone hispida
tsaiyarrabuh (P)	Gilia floccosa

tsanavi	Prunus andersonii
tsa-na-vi (P)	Symphoricarpos longiflorus
tsapuwi (P)	Ribes
tsiebuwi (P) (name for the galls.)	Rosa
tsiavi	Rosa chrysocarpa
tsiavi (P&S)	Rosa
tsini-bube (P)	Smilacina
tsini-bube (P)	Smilacina stellata
tsoho mozick (W)	Parosela polyadenia
tsube (P)	Salix
tsube (P)	Salix argophylla Nutt.
tsube (P)	Salix exigua
tsube (P)	Salix hindsiana
tsube-ha (P) (willow sugar)	Salix (honey dew)
tsugilatse (W)	Balsamorhiza sagittata
tsurupe (P&S)	Ephedra
tsurupe (P)	Ephedra nevadensis ?
tua-ono-gibu	Polygonum ? (spec. n.g. Data applies to Rumex sp.)
tua-ono-gibu (S)	Rumex venosus S. Wats.
tuba-peha (P)	Pine nut sugar
tubassop (S)	Veratrum californicum
tu-baw-cha-yo-caw-son	?
tube-manabe (P)	Heliotropium oculatum
tube-manabe (little puke) (P)	Heliotropium oculatum Heller
tu-be-segi-nobe (P)	Salvia carnosa
tube-sigino (P)	Salvia carnosa
tube-siginobe (P)	Salvia carnosa

tu-bi-cai	Euphorbia arenicola
tue-ago-nome (W)	Paeonia brownii
tue hoo (P)	Orobanche
tue-poe (P)	Cercocarpus ledifolius
tuha-konobe	Polygonum
tuha-konobe (P)	Rumex venosus
tuh-boo-oy (P&S)	Greens like lettuce
tuh-veep	Eurotia lanata
tumanabe (P)&(S)	Heliotropium oculatum
tu-pah (P)	Pinus monophylla
tu-pasi-wup-wee (P)	Pentstemon deustus ?
turumbe (S)	Cercocarpus ledifolius
tu-rumbe (S)	Ephedra nevadensis ?
tu-tumbe (S)	Ephedra nevadensis
tu-tu-mo	?
tu-va-saa (P)	Cuscuta
tu-vee-see-gee-no (P)	Eurotia lanata
	Salvia carnosa
unda-vich-quana (S)	Mimulus guttatus
wa-ak (P)	Balsamorhiza sagittata
wa-ap	Juniperus
wa-ha-nane (W)	Lygodesmia spinosa
wah-da-e-caw-bu (P)	Angelica sp.
wah-gup-ee (S)	Artemisia tridentata
wah-hava (P)	Elymus condensatus
wa-jau-ba (P)	Artemisia
wah-numb (S)	Caulanthus crassicaulis
wa-pee (P)	Juniperus

wah-pee (W)	Pinus monophylla
wah-puee (P)	Juniperus utahensis
wainatsu (S)	Rumex hymenosepalus
wainatsu (S)	Rumex venosus
wa jau bu	Artemisia sp.
wa-jo-bu (P)	Artemisia heterophylla
wam-bona (S)	Smilacina
wam-see (W)	Gilia congesta ?
wana (S)	Apocynum cannabinum var. glaberimum
wa-na (P)	Asclepias cryptoceras S. Wats.
wanda-vah-sah (Eureka S)	Veratrum californicum ?
wanda vasa (S)	Veratrum californicum
wape	Juniperus utahensis
wape	Pinus ?
wa-pee (P)	Juniperus monosperma
wapi	Juniperus
wapi (P)	Juniperus utahensis
wapi-pui (S)	Evernia vulpina
wapi-pui (S)	Juniperus utahensis
wapi-tonega (P)	Juniper gall - also moss on juniper
wap-pui (P)	Juniperus occidentalis
washoe bankus (W)	Nicotiana
wawic (Pap.)	Anemopsis californica
wee-ne-da (P)	Brodiaea hyacinthina Baker
we-ha (P)	Apocynum hypericifolium
wem-see (W)	Achillea lanulosa
wenna-zoh-see-bupe (S)	Chrysothamnus puberulus
wer-cau-cau-bee (P)	Phragmites communis
we-yeah	Quercus
white four-o'clock	Hesperonia retrorsa

white four-o'clock	Allionia
wia-sib	?
wie-ah-pah-na-bu (P)	Asclepias ?
wie-wor-cha-bu (P)	Asclepias ?
wimnup (S)	Pinus monphylla Torr. & Frem.
wisha (P)	Apocynum cannabinum var. glaberimum
wisha (S)	Asclepias cryptoceras
wiutu (P)	Achillea lanulosa
wive (S)	Gilia aggregata
wo-cau-cau-pu (S)	Phragmites communis
wogaybe	Opuntia
wom-boh-nomb (S)	Smilacina vagnera
woodie (P)	Plantago major
wood-un-de-kan (P)	Ribes
wo-orra (S)	?
wor-daah-e-gau-bu (P)	Sphenosciadum capitellatum
wou-ne-pe-ha-vee (P_S)	Pinus
wunda vassop (S)	Veratrum californicum
wunda-vassop (S)	Veratrum californicum
wungobe (P&S)	Abies concolor
wya-sag-e-duh (Ruby Valley S)	Argemone hispida
wy-ron-zip (S)	Elymus condensatus
ya-paw-taw-the (P)	Eriogonum ovalifolium Nutt.
ya-paw-taw-the (P)	Eriogonum sulphureum ?
yarrube	Mineral
ya-temp (P)	Covillea tridentata
ya-tue-bee	Mineral
ya-tump	Covillea tridentata
ye-duts (P)	Cymopterus globosus

ye-luts (P)	Cymopterus globosus
zah-gah-gee-hee- (S)	Iris missouriensis
zing-gah-boh (Ely S)	Argemone hispida

(157)

List No. 122 ~~125~~

INDIAN DRUG PLANTS, ANALYSIS MATERIAL COLLECTIONS, ALPHABETICAL

BY SCIENTIFIC NAME

Compiled 1 9 3 8

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COLLECTIONS OF ANALYSIS MATERIAL - INDIAN DRUG PLANTS

alphabetical by plant name

Achillea lanulosa Nutt.
"yarrow"; "todzi-tonega", "wiutu" (P); "pa-ron-zia", "daw-ji-yan"(S); "wem-see"(W)
G&H 1323, H 439
Occurs generally as a weed along roadsides and in fields. Indians of entire state know and use the plant.
For sores, boils, felons or swellings: fresh leaves mashed for poultice, or boil entire plant for poultice; sometimes make infusion of the plant and wash sores with it.
Saddle sores, cuts or boils of horses: wash with the boiled infusion.
Toothache: chew leaves or else insert a piece of the root in the cavity, the latter said to kill the nerve.
Headache: smell the green leaves.
Sore eyes: boil leaves, strain and use as eye wash.
Haemostatic after childbirth: drink a cup of the infusion twice a day for a week.
General purpose tonic: drink tea from leaves for blood tonic, colic, dyspepsia; drink tea from root as a laxative, and for bladder trouble.
Gonorrhea: boil 3-4 lbs. of the plant in water, bathe in water, and drink two cups of the infusion while it is hot. Repeat bath and drinks frequently.

Aplopappus nanus (Nutt.) D.C.Eat.
"see-gup-ee"(P); "dimbeseebupee"(S)
T 1203
Diarrhea or stomach trouble: drink tea made from whole plant.
High fever or grippe: drink hot tea made from boiled plant.

Argemone ~~hispidocarulea~~ platyceras Link.& Otto
"prickly poppy"; "ishubgoofwa"(P); "tsa-gida", "zing-ga-o"(S)
A 5833 (seed), A 5905 (roots).
Occurs generally along desert roadsides.
Toothache: Grind seed, either dried or cooked, and apply; also root dried and bits inserted in hollow tooth to stop pain.
Skin sores: seed ground and applied as a poultice.
Sore eyes: grind seed and make infusion for eye wash.
Grey hair: grind seed and use as a shampoo to prevent grey hair.

Artemisia ~~spx~~ ludoviciana Nutt.
H 488
In high mountains, near Carson City, Nevada. El. 7,500. Plant grows rather commonly in sparse colonies. This material collected because it bears resemblance to B&S 40, B&S 48, an Artemisia in which the green leaves are used in a compress for headache. The fumes of the burned leaves are inhaled for grippe.

Artemisia ~~dixxxxxx~~? dranculoides Pursh
"sagebrush"; "pava-hobe"(S); "koss-wiup"(P)
T 1180, T 1202.
Snake Range, White Pine County, Nevada. Dry rocky slopes.
This material collected for trial in the uses reported for various species of the genus.
Sore throat or neck glands, tonsilitis: Mash the plant and use as poultice to bind on the neck. A tea of the plant is drunk also.
Menstrual disorders (especially yojng girls): a tea is made of dried leaves; also used as a steam bath.
General tonic: drink tea from leaves.
Liniment: use crushed green leaves.
Rheumatism: packets of steamed leaves placed on affected parts; also bruised fresh leaves employed.
General tonic: tea from leaves or whole plant.
Headache: drink the tea or use the leaves as a compress.
Fever in babies: use steeped leaves and apply externally to reduce fever.
Eye wash: tea from leaves.
Tonic after childbirth: drink 2-3 cups daily of tea from boiled roots.
Colds: drink tea made from leaves or inhale fumes of burning leaves.
Shampoo: infusion of leaves.
Physic: drink solution of boiled plant.

Artemisia gnaphalodes Nutt.
"western mugwort"; "kow-see-wah-ab" (P); "bav-oh-hoe"(S)
T 1218
Stomach trouble: drink tea from boiled plant.

Artemisia spinescens D.C.Eat.
"bud sage"; "kuheeb tah-kuh-nogwah"(P)
B&S 89
Heavy cold: drink tea from steeped stems and leaves.
Bladder trouble: boil leaves and flowers and drink brew in cases of urine retention.

Artemisia tridentata Nutt.
"big sagebrush"; "sawabee"(P); "pahobe"(S)
B&S 6
Colds or coughs: drink one-half cup of tea made from leaves or whole plant. Also mash green leaves and smear on chest. Sometimes, raw leaves eaten. One report recommends tea from the whole plant for coughs, and tea from the leaves for colds.
Fevers: drink hot tea from steeped leaves to produce sweating.
Emetic: hot tea from plant.
Indigestion: chew green leaves.
Inflamed eyes: compress of steeped leaves.
Shampoo: wash with infusion of leaves. Said to stop falling hair.
Deep cuts: wash with infusion of leaves.
Baby powder: old, dried leaves collected from the plant and powdered.
Swollen legs: steeped leaves used as poultice.
Physic: drink tea (probably large quantity or very strong).

Asclepias speciosa Torr.
H 436
Latex used to cure sores or ringworm. Latex also used as chewing gum.
Coughs and tuberculosis: boil root and drink one-half cup twice a day.

Asclepias mexicana Cav.
A 5542
Snake bites: make poultice of crushed green plant, or soak dry plant in boiling water and use in same manner.

Astragalus ~~kentrginoxus~~ diphysus A. Gray
A 5549
Reported as cause of wholesale poisoning of bees. Material for trial as insecticide.

Balsamorhiza sagittata (Pursh) Nutt.
"balsam root"; "kosiak"(S); "ah-kerk"(P); "tsugilatse"(W)
A 5711, T 1115
Aromatic gum of root used as chewing gum.
Colds, emetic: roots steeped and drunk.
Swellings, insect bites: apply poultice of crushed root.

Berula erecta (Huds.)Cov.
T 1093
Material requested by Dr. Bieter.

Ceanothus velutinus Dougl.
"snowbrush", "mountain balm"; "correnup"(P); "mahdonumbe"(S)
A 5882
Colds and lung trouble: drink tea from leaves.

Cercocarpus ledifolius Nutt.
"mountain mahogany"; "toobe"(P); "turumbe"(S)
H 445
Heart tonic: tea from inner bark drunk; also tea from leaves.
Weak lungs: scrape off outer bark, using only inner bark. Remove this and let dry. For use it is boiled and taken as a potion.
Sore eyes: use bark as tea wash.
Sores, wounds, swellings or blood poisoning: bark alone, or bark and leaves ground and steeped to use as poultice. Also, bark is powdered and used to dust on sores.
Burns and cuts: sawdust from wood promotes healing.
Hemorrhage: drink steeped inner bark to check hemorrhage
Smallpox: use tea from bark as a wash.
Dye: boiled bark yields a red dye; buckskin is dyed red by soaking in water with the bark.

Chaenactis douglasii (Hook.) H. & A.
"bawa-na-tizua"(P)
A 5817
Heart depressant: tea from whole plant.
Swellings and sprains: poultice from mashed leaves.

Chimaphila umbellata var. occidentalis (Rydb.)Blake
"~~crinsten~~ pine" Princes
B&S 1
Kidney complaint: whole plant taken as tea. Supposed to control urine at night and to flush kidneys by day. It is reported that three doctors in Reno, Nevada, use this plant in their prescriptions.

Chrysothamnus viscidiflorus and Chrysothamnus spp.
"rabbitbrush", "seebape"(S); "segupi"(P)
T 1133, B&S 31, H 489 (stems and leaves), H 489 (flowers), T 1179.
General tonic; tea from dried leaves and flowers.
Colds: tea from leaves; sometimes crush the leaves in water to drink or to use for bathing.
Stomach trouble: tea from leaves.
Chewing gum: chew small nodules that occur on basal part of stem, near ground.
Yellow dye: secured from flowers, according to one report outside Nevada.

T1133 Chryso viscidiflorus Nutt
T1179 " parryi (Gray) Greene
B&S 31 Chryso nauseosus var.
H 489 " " (Nutt) Hall
~~H 489~~ " " speciosus

Cicuta occidentalis Greene
"poison parsnip"; "hawkenup" (P); "hahtee"(S)
H 442
Snake bite: root mashed and made into poultice for application. Said to reduce the swelling and to deaden the pain.

Cleome sp. lutea Hook.
A 5526
Material sent for trial as an insecticide.

Conium maculatum L.
"hah-tee"(S)
T 1253
No use reported for Nevada, but in literature the root is said to contain a narcotic.

Cuscuta sp.
"dodder"; "tuvasaa"(P)
B&S 81
Birth control: eat the plant, about a handful, followed by smaller amounts.

Ephedra ~~spp.~~ nevadensis S. Wats.
"blue ephedra"; "turumbe" (S)
T 1263
Sores: boiled plant used as a poultice.

Ephedra spp.
"Indian tea"; "tarupe"(P); "turumbe" (S)
M 596
General purpose tea from twigs. Often mixed with Cercocarpus or Gilia aggregata as cure for gonorrhea.
Colds or influenza: mixed with roots of Leptotaenia multifida.
Also, infusion of twigs boiled down to take for colds.
For deferred menstruation, thin blood, stimulant to urination: tea from twigs.
As blood purifier: disordered stomach: boiled stems for tea.
Coffee substitute: ripe seed are parched and ground.
Sores: grind up the plant and use as powder; sometimes used as a poultice, mixed with pine pitch.

Eremocarpus setigerus Benth.
A 5870
Plant has curious odor of malic acid. Reported to be used by California Indians as a fish poison. In the literature (Chesnut, V.K. - Plants used by the Indians of Mendocino Co., Calif. - Contr. U. S. Nat. Herb. 7. 1902) the fresh leaves are said to be bruised and applied on chest as counter-irritant for internal pain. A decoction of the plant is used as bath to reduce fevers, or a weak decoction taken for chills and fevers.

Erigeron ~~conspicuus~~ concinnus aphanactis Gray
"brass buttons"
A 5818
Cramps: boil the plant and drink the tea.

Eriogonum ~~sp.~~ umbellatum Torr.
"bah-hoe-zee"(S)
T 1193
Rheumatism: boil or mash roots and use as poultice.

Eriogonum umbellatum Torr.
"sulfur flower"; "nakadonup"(P)
H 346
Colds and diarrhea: drink hot tea from roots.

Gilia aggregata
"trumpet phlox"; "tem paiute"(S); "paragibe"(P)
A 5881
Gonorrhea: tea from whole plant is taken over a long period of time, also used as a wash. Said to be drastic cathartic, especially the tea from the root. One method of taking: drink a cupful of the tea once a day until it begins to irritate, then stop for a few days and repeat again. Sometimes combined with Ephedra for venereal disease. To reduce weight: same tea also used.

Gilia ~~aggregata~~ pumila Nutt.
"hooni"(S)
T 1245
Influenza: tea from dried plant taken, 1 cup before breakfast for two successive days.
Colds: drink tea from steeped plant.
Blood purifier or tonic: drink brew from boiled plant; also acts as physic and emetic.
Gonorrhea: make tea of the plant, either fresh or dried, drink daily before breakfast. Is said to cure in a month. Some Indians mix it with Pentstemon deustus, mashed, raw and used as a wash.
Dropsy: drink tea made from whole plant and also use as poultice on the affected part.
Chronic ulcers, swellings: also wounds: use poultice of boiled plant, or bathe with infusion. One case was cited, of two years' standing, which was cured after one month treatment, by drinking tea and bathing affected part, together with sunbaths at short intervals.

Grindelia squarrosa serrulata (Rydb.)Stey.
"gumplant"
A 5737, T 926.
Bladder trouble: boil entire plant and drink the hot tea.
Expectorant: colds: pneumonia: tea made from the upper, resinous portions.
Dropsy and smallpox: drink tea from steeped plant.

Heliotropium ~~curassavicum~~ oculatum Heller
"tumanabe" (P & S)
B&S 75, T 1266.
Emetic: boil plant and drink the tea.
Gargle: tea from root.
To induce urination: tea from root taken in small amounts.

Hugelia filifolia Nutt.
B+S. 45

Hermidium alipes S.Wats.
"hewovey" (P & S)
M 574
Sores: dry the roots and use as powder.
Headache: root infusion boiled until thick and then applied externally or is taken as potion.
Dye: yellow dye for basketry said to be obtained from boiled roots and stems.

Gilia eremica var. zionis Craig
~~Hugelia filifolia Jeps.~~ floccosa Gray
"chayakaba" (P); "pawenatuswa" (P)
Hen 96, B&S 45
Tuberculosis: tea from dried plant, especially for children.
Stomach disorders: boil a handful of the plants in 1 pint of water, drink a cupful of the tea every day until relieved.
Same tea is used as emetic and physic; by drinking continuously, one finds the action not drastic, it is said.
For sores and eyewash: the tea is used.

Hypericum scouleri Hook.
"St. John's wort"; "andra-witch-gwanna" (P & S)
H438
Eyewash: tea from whole plant.
Foot bath: for aching feet, plant merely soaked in water and water used to bathe members.

Iris missouriensis Nutt.
"wild iris"; "pokuerop"(P); "pahsagedup"(S)
H441
Toothache: small piece of root inserted in cavity said to kill the nerve and stop the pain.
Gonorrhea: tea from boiled roots said to be positive cure; also used as a wash; or the root mashed and applied externally to venereal sores. Sometimes the seed are combined with the roots to make the brew.
Bladder trouble: the roots are boiled and produce a bitter liquid having the color of whiskey. Warm tea from boiled root used also for colds and stomachache.

Iva axillaris Pursh
"poverty weed"; "durunzip"(S)
A 5730, T 1254
Diarrhea, colds and stomach cramps: tea from steeped or boiled roots is taken either hot or cold.
Insecticide: it is reported that Italian gardeners used a solution of the boiled plants to spray their vegetables.

Juniperus ~~sppx~~ utahensis (Engelm.)Lemmon
"sammabe"(S); "wappui" (P)
H443, H 401
Colds: boil 1 cut of leaves in 1 quart of water and drink freely. Also, sometimes inhale fumes of burned leaves. Sometimes mixed with leaves of Artemisia tridentata to make a tea.
Kidney trouble: tea of leaves or berries.
Swellings: use either tea from the leaves as a wash or the crushed leaves as a poultice.
Severe hiccoughs: tea from the fruits.
Rheumatism: burn branches over a fire and then place patient on the branches to make a sort of sweat bath, also drink the tea.
Fumigant: leaves burned on top of stove to protect against smallpox.
Birth control: tea made from fruits in autumn. A cupful of brew, taken on three successive mornings, is said to have permanent effect.

H 471 Lepto pungens var squarrosa Gray

"prickly phlox"; "tina-ego"(S)
H 471, ~~T 1253~~ T 1252 (not T 1253)
Eye trouble: i.e. inflammation or swelling - tea from boiled plant as a wash.
Stomach trouble: tea from boiled plant.

Leptotaenia multifida Nutt.
"balsam root"; "tosa"(P); "tohsup"(S)
A 5465, B 601
Familiar to all the Indians, and has many medicinal uses, the more common being for coughs and colds, or tuberculosis. For this purpose it is used in various ways: dry the root, cut into small chips. These may then be boiled, in water to cover for 30 minutes and the brew taken as tea. The dried chips may be smoked as cigarettes or in pipe, and is sometimes mixed with dried Nicotiana attenuata or other species. Another mixture: equal parts of cedar leaves, old leaves of Artemisia tridentata old leaves of Chrysothamnus, and root chips of L. multifida, add water to cover and boil. Strain and drink. Also mix root chips with pine pitch, burn on live coals and inhale the fumes.
Some years ago, during an influenza epidemic, a druggist in Carson City sold a commercial preparation of the root.
Sore throat: chew small pieces of dry root as lozenges.
Asthma or bronchial troubles: use powdered root as snuff or smoke chips in cigarette or pipe.
Emetic: when taken as a strong tea, in weaker form is used for tonic.
Fevers: used as external wash and internally as weak tea.
Smallpox: apply external wash of crushed leaves and roots.
Sores or cuts: use exuded oil of freshly cut root; pulverized root is powdered and put on sore; also dry root can be boiled and the oil skimmed off the surface of the water.
Trachoma or gonorrheal eyes; put one drop of fresh oil in affected eye.
Swellings: mash root and use as poultice.
Gonorrhea: drink tea from boiled root, either dried or fresh; the fresh root is sometimes combined with fresh root of Rumex hymenosepalus.
Distemper in horses: exercise the horse until he is breathing heavily and then make him inhale fumes from burning root chips.

Linum lewisii Pursh
"wild flax"; "pooena-tiswa"(P); "pooena-nut-iz-oo"(S)
T 1142
Swellings: leaves mashed and used as poultice; used in same manner for poultice over the gall bladder.
Sore eyes; tea from steeped leaves used as a wash, or steeped leaves used directly as a poultice.
Sore throat: use poultice of steeped leaves.
Diarrhea: tea from whole plant or from leaves alone.
Stomach disorders: tea from whole plant.

Lithospermum ruderale Dougl.
"nomishaw"(S)
T 919
Diarrhea: tea from dried root either soaked or boiled, used also for dyspepsia.
Birth control: two reports claim that tea from the root, if taken daily, will result in freedom from child bearing for six months. Sometimes given to the man also.

Lupinus spp.
"quedukwana"(P); queduquena"(S)
T 1181, T 1255
Bladder trouble and failure to urinate: tea from whole plant or tea from seed. Use until relieved.

Lygodesmia spinosa Nutt.
"numusanacaw" (P); "tonobe" (S)
B&S 32
Chewing gum: resinous pellets on roots and branches are gathered and chewed. Looks like white rubber.
Tonic: tea from mashed, boiled roots.
[illegible] tea to stop vomiting.

Dougl.?

IP Coll
8925 T1181 → Lupinus laxiflorus
8999 T1285 " Tenellus
Dougl.?

Malva rotundifolia
G&H 1099
After birth infections: take tea made from entire plant. Used also for farmyard animals and is then used as a douche.

Mentha ~~laxata~~ x penardi (Briq.)Rydb.
"spearmint"; "seenativa"(P); "pah-kwana"(S)
M 532
Fevers: tea made from entire plant, except the root, and used as cooling agent. Tea from the leaves for fever in babies.
Colic in babies: tea from leaves.
Headache, stomach ailments, indigestion: tea from roots taken hot or warm.

Mimulus guttatus
"monkey flower"; "pah-what-nabe"(P); "undavichquana"(S)
Wounds or blood poisoning: poultice made of fresh leaves.

Mirabilis laevis
"white four o'clock"; "hewovey"(P)
B & S 87
Sores: root dried, pulverized and used as a powder.
Headache: drink tea from boiled root, also bathe head.
Lung trouble, dropsy: boil roots with roots of Leptotaenia multifida and drink the tea.
Colds: steep the leaves and drink as tea.
Chronic indigestion: boil the root one-half hour and drink the brew.
Yellow dye: secured from the boiled root.
One group of Indians insist that the root of this plant is not medicinal because it is too fibrous. The same group claim that the name "hewovey" applies only to Hermidium alipes.

~~Monarda sp.~~ Monardella odoratissima Benth.
"guy mohpu"(P)
H 479
Female trouble: tea from flowers and upper half of stem is excellent regulator for female trouble;
Colds: also used as a beverage for colds.

Nicotiana ~~spx~~ attenuata Torr.
A 5888
Sores: pulverized plant used as a dust.
Cuts: apply chewed leaves.
Hives or itch: bathe in water of soaked leaves.

~~Odostemonxfremontiix~~ Berberis repens Lindl.
"Oregon grape"; "sogotiembuh"(S); "corenup pahwee"(P)
N&L 598
Hemophilia, rectal hemorrhage: roots boiled and tea taken.
Bladder and Kidney trouble: roots boiled and tea taken.
Colds: small amount of solution from boiled root added to whiskey and taken for coughs.
Venereal disease (gonorrhea)? - roots boiled and tea taken.
Dye: the root also yields an orange dye.

Orobanche multiflora Nutt.
"broomrape"; "tue hoo" (P)
G & H 941
Plant usually eaten like asparagus, but it is said that the juice from the boiled plant is used for colds in the head, while tea from the dried stems is used for lung trouble. One report indicated that eating the bulbous base cured piles.

Osmorrhiza occidentalis (Nutt.)Torr.
"sweet anise"; "basowep" (S)
T 936
Colds: tea made from roots; also for general physic and stomach trouble.
Heavy colds or pneumonia: mix with Leptotaenia multifida.
Diarrhea: tea from dried roots. Mashed root used as poultice for abdominal pains and for snake bite.
Measles: roots and leaves boiled to make a wash for external use.
Venereal disease: drink tea from boiled roots.
Delousing chickens: roots and leaves steeped and used as a wash.

Paeonia brownii Dougl.
"wild peony"; "batipi"(P); "pahdadin" (S)
A 5725
Colds and lung trouble: steep root and drink tea.
Sore throat: such a small piece of the root, do not chew but renew when the flavor is gone.
Sores and burns: grind ripe seed and apply as poultice, and plant is powdered and applied.
Kidney trouble: steep seed and drink the tea before each meal.
Eyewash: ripe seed are ground and solution used.
Nausea: drink tea made from the root.

~~Parosela polydenia~~ Dalea polyadenia Torr.
"magoonduhu" (P & S)
A 5537, B&S 2
Colds: steep the twigs and drink the hot tea, also inhale the fumes.
Tuberculosis: small handful of twigs boiled in two cups of water for some time, strain and drink hot.
Diarrhea: make strong infusion and drink; a weaker infusion used for stomachache.
Sores: scrape off the oil glands and pulverize, use as a powder.

Pentstemon deustus Dougl.
"white pentstemon"; "too-buzsebe" (P & S)
A 5814
Sores: use powdered dry leaves.
Swellings; roots and leaves ground and made into poultice.
Stomachache in children: leaves boiled and tea given.

Petrophytum ~~elatius~~ caespitosum (Nutt.)Rydb.
T 955
No use reported. Related genera are used medicinally.

Phragmites communis Trin.
B&S 9, B&S 54
"wer-cau-cau-bee" (P)
In fall a profuse exudate appears on leaves and sheaths. This, apparently, is the result of insect punctures. Exudate is gathered in great quantities by the Indians and is used to make a sort of candy. It is said that the 'sugar' brings $5.00 per pound.

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Plantago lanceolata L.
H 440
(see under P. major)

Plantago major L.
"plantain"; "woodie" (S)
B&S 30
Wounds or bruises: raw leaves mixed with leaves of Clematis are applied; or wilted leaves are coated with any good oil and applied directly to the affected part. Will not leave scar.

Polygonum ~~xxxxxxx~~ buxiforme Small ?
"knotweed"
A 5736
Material requested by Dr. Bieter

Potentilla glandulosa Lindl.
A 5879
Laxative: one species reported to be used, boiled.

Prunus andersonii A.Gray
"desert peach"; "chanabee"(P); "tsanavi"(S)
B&S 37
Colds: tea from boiled leaves, also used as a beverage.
Tuberculosis: scrape off the outer bark, use the inner bark to make the tea. Also chew the mashed twigs and swallow the juice.

Prunella vulgaris L.
T 944
Material requested by Dr. Bieter

Psathyrotes annua (Nutt.) Gray
"sebu mogoonobu" (P); "waha ohabubinga" (S)
G&H 1313
Toothache: dried leaves are chewed.
Stomachache and urinary disorders: tea made from entire plant and taken until relief is obtained.
Eyewash: dried plant is steeped and the solution used.

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Pteridium aquilinum pubescens Underw.
"bracken"
H 472
No use reported in Nevada but has been reported in other states.

Pterospora andromedea Nutt.
Not numbered
Material requested by Dr. Bieter

Purshia tridentata (Pursh)D.C.
"antelope brush"; "hunabe" (P & S)
B&S 39, T 1221
Measles: leaves and flowers, or inner bark, boiled and tea taken to bring out the measles spots. Employed along with this is the external wash made from the boiled root of Wyethia amplexicaulis.
Smallpox: make cold infusion, drink tea from leaves and use either the tea or raw mashed leaves as a wash. Sometimes used as a preventative by drinking the tea and anointing the body with crushed leaves.
Colds and sore throat: boil one-half cup of twigs and leaves in one quart of water and drink the tea; also tea is made from the branches.
Emetic and physic: boil handful of leaves in water to cover and drink the tea; whole ripe seed also made into tea for same purpose, leaves chewed for physic.
Venereal disease (gonorrhea?): leaves mixed with Ephedra and made into tea will cure the disease if taken over a long period of time.
Sore eyes: tea from bark used as eyewash will clear up pus.
Spores: inner cortex pulverized and used as dust.
Hemorrhage: drink tea from inner cortex.

(174)

Rosa spp.
"tsiavi" (P & S)
H 444
Sores: inner cortex pulverized and used as powder.
Swellings: grind the inner cortex and apply as poultice; or boil the whole plant and bathe swollen knees, stop when skin turns yellow.
Colds: use the outer bark or dry the root and grind to make tea.
Diarrhea: make tea from the roots.
Dye: boil the bark and roots to make yellow basketry dye.

Rumex xxx crispus L.
"dock"; "pawiup"(P); "enga-pawiup"(S)
A 5832, T 1136, B 623
Rheumatism: mash root and use as poultice or liniment.
Blood purifier: drink tea made from steeped leaves and roots.
Dropsy: drink tea made from seed and leaves.
Sores: poultice made from mashed, raw root.
Stomach disorders: drink tea from boiled root.

Rumex xxxxxxxxxxxxxx venosus Pursh
"sand dock"; "tuha-quonokeva" (P); "wianutzu" (S)
M 598
Burns or sores: root dried, powdered and applied as paste, sometimes dusted on affected part.
Sore throat: powdered root is swallowed.
Colds: drink tea from steeped roots.
Dye: unpeeled roots are boiled and used to dye basketry a yellow color. Ephedra is added to set the color.

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Salvia carnosa Dougl.
"purple sage"; "tube-siginobe" (P); "toyatimbazip (S)
B&S 3
Colds and pneumonia: boil 1 cup of leaves in a quart of water and drink as tea; also mash the leaves and smear on chest and cover. Sometimes the leaves and flowers are boiled to make the tea.
Used also for headache and stomachache.
Eyewash: use hot or cold tea from boiled leaves.

Sambucus xxx velutina Dur. & Hilg.
"elderberry"; "koonogibu" (P); "koonugee" (S)
A 5806
Diarrhea: drink infusion of dried flowers, or of boiled roots.
Haemostatic: apply bruised leaves.
Swellings: either raw or boiled used as poultice
This is favorite remedy to apply to caked breasts.

Sarcodes sanguinea xxx Torr.
"snow plant"
H 59
Dried stalks made into tea for pneumonia, supposed to build up blood.

Senecio xx triangularis Hook.
H 344
This particular species has not been reported to have a medicinal use in the state. Crushed leaves of other species are reported to be used as a liniment.

Smilacina xxx stellata (L.)Desf.
"false solomon seal"; "eshadonup" (P); "wombohnomb" (S)
H 337
Swellings or boils: mash raw root, or soak dry root, and apply as poultice.
Delayed menstruation: drink tea from whole plant or from root.
Stomach disorders: drink tea from boiled root.

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Solanum villosum Mill.
"ah-dye-eh-natu-zuaah"
B&S 66
Diarrhea: eat one-half cup of the raw fruit; or make a hot tea by boiling a cup of the raw fruit. Formerly was used to purify bad drinking water by boiling the fruits and drinking the juice.

Sphaeralcea munroana
"desert mallow"; "goinoconbi" (S)
Hen 327
Colds: leaves boiled and tea taken hot.
Swellings: grind the root, heat and use as poultice.
Gonorrhea: boiled roots or whole plant, used as tea.
Birth control: drink hot tea from boiled roots; also burn the plant and make a vapor bath over the hot ashes. Said to be effective for one year.

Sphenosciadium capitellatum A.Gray
H486 → "wor-daahegaubu" (P); dueebohquoh" (S)
Sore throat: chew small piece of the root.
Pneumonia: drink hot tea from boiled root.

~~xxxxxxxxxxxxxxx~~ Stanleya arcuata Rydb.
A 5540
Material requested by Dr. Bieter.

Thalictrum fendleri Engelm.
"meadow rue" "pawaga" (P)
A 5880
Perfume: from crushed seed.
Gonorrhea: weak tea from boiled roots will cure the disease if taken over a long period of time.
Colds: tea from rootstock.

Triglochin ~~xxx~~ maritima L.
A 5847
Considered to be poisonous to stock

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Urtica gracilis Ait.
"nettle"; "q'we-banober" (P)
H 493, T 1132
Urtica breweri S. Wats.
Colds: boiled leaves taken as tea.
Grippe or pneumonia: make vapor bath by putting leaves on heated ground and placing patient on top; the fumes are inhaled.

Veratrum ~~xpx~~ californicum Durand
"skunk cabbage"; "pahcageebu" (P); "tubassop" (S)
H 343, B&S 5
Boils, cuts, swellings, blood poisoning: raw root mashed and used as poultice.
Snake bite, or other poisonous bites: use poultice of raw, mashed bulb, or the dry rhizome can be powdered and used as a paste.
Severe pain: other than in the stomach, drink tea from root, should be weak or else will prove emetic.
Sore throat or nece glands: rub affected parts with pieces of raw bulb.
Birth control: tea from root taken daily will give temporary safety.

Verbascum thapsus L.
"mullein"
H 435
No use reported from Nevada but is important medicinal plant in other states.

Wyethia
~~Wyethia~~ amplexicaulis Nutt.
G&H 1042
Foot itch: green leaves placed in shoe.
Pains: use ground root as poultice.
Emetic: soak root in water overnight, drink the water in three doses.
Measles: mash root and use as body wash.

Wyethia mollis Gray
H 437
See uses for root under Wyethia amplexicaulis.

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Zygadenus elegans Pursh

"death camas"; "kogi-adenup" (P); "tahvehseego" (S)

~~xxxxxxxx~~, T 850 n+L.617 = Zygadenus sp.

Used externally only.

Swellings, sores, rheumatism, sprains, aches: mash raw bulb and apply as a paste or poultice.

~~Unidentified~~ Ligusticum filicinum S. Wats.

T 1172

This plant, as yet unidentified, has not been reported as having economic use, but the material might be tested for some of the qualities reported in other members of the family.

SAMPLE SPECIMENS ONLY OF INDIAN DRUG PLANTS - NEVADA

B&S 51 Asclepias speciosa Torr.
"ekee-roe-ehta" (P)
For coughs, especially tuberculosis: boil the root and drink one-half cup of the brew, twice a day.

M 663 Cucurbita foetidissima H. B. K.
"arno-ko" (S); "arno-cup" (Moapa)
Gonorrhea and syphilis: weak tea made from root is said to be a positive cure. The patient suffers hardship while taking it.
Maggots: in wounds are killed by treating with tea from the root.

M 668 Datura meteloides DC.
"jimson weed"; "no-moap"
Root and seed are narcotic. Sometimes taken by Indians to produce trance in fortune telling.

M 635 Leucocrinum montanum Nutt.
"sand lily"; "siguagump" (P & S)
Swellings and infected sores: grind the roots to a soapy consistency and apply. Also used to bathe very ill people.

M 643 Pinus sp.
"sanape" (P & S)
This pine pitch is cleaned, melted and used as poultice on warm cloth for boils, blisters, throat and chest infections. Especially good for pneumonia.

M 667 Thamnosma montana Torr.
"desert rue"; mogurup"
Smallpox: drink tea from the plant. Female ailments: use tea as a wash.

B&S 68 ~~xxxxxxxx~~ Abies concolor Lindl.
"ca-ta-vee" (P)
Tuberculosis: drink 1 teaspoonful of the bark exudate once a day; also drink tea from boiled bark.
Cuts: smear with the exudate and bandage.

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MINERALS

Mineral
"yarrube"
Collected by Mrs. Murphey.
Used by Indian doctors and said to be a definite cure for gonorrhea. Taken internally: 1 saltspoonful in water on each of three successive days. Rest three days and begin again. Continue until cured. Uterine hemorrhage: treated in same way. Treatment is said to be expensive because the source of the mineral is known but to a few Indians. It is said to occur in pockets.

Red earth
"pee-sha-pee" (P)
B&S 36
This fine dust is used in a variety of ways: to dust on navels of new-born babes; and as a deodorant under the arm; also for sunburn. For sores: apply mashed root of Leptotaenia multifida, and mashed twigs of Parosela polydenia, then sprinkle with the red earth. Used also as war paint.

White earth
"e-bee" (P)
B&S 65
Eat a small lump for heartburn. Repeat freely until relieved. Also used as white paint as decoration on face or body.

Mineral
"ya-tue-bee" (P)
B&S 61
Take a pinch in a cup of water for heart ailments. Unsed also in Indian rituals. (apparently same as "yarrube" collected by Mrs. Murphey).

TOTAL SHIPMENTS TO DR. BIETER

1938.

SHIPMENT NO.	I.P. No.	COLL. NO.	ANALYSIS MATERIAL
15	9056	T1309	Thamnosma montanum Torr. & Frem.
	9028	T1281	~~Larrea tridentata~~ Covillea tridentata(D.C.)Vail ~~var. glutinosa~~
	9079	T1332	Phoradendron californicum Nutt.
16	9032	T1285	Nicotiana ~~trigonophylla~~ palmeri A.Gray
		H 493	Paeonia brownii
		H 494	Leptotaenia ~~sp.~~ multifida
17	9360	T1613	Eriogonum inflatum Torr.
	9244	T1497	Salvia carnosa Dougl.
	9374	T1627	Euphorbia polycarpa Benth.
19	9417	T1669	Anemopsis californica (Nutt.)H. & A.
	9475	T1727	Eriodicyton angustifolium Nutt.
	9520	T1772	Juniperus siberica Burgsd.
	9500	T1752	~~Odostemon sp.~~ Berberis fremontii Torr.
	9451	T1703	~~Mirabilis froebelii~~ Quamoclidion froebellii glabratum Standl.
20	9542	T1794	Sphaeralcea ~~sp.~~ emoryi Torr.
	9591	T1843	Anemopsis californica (Nutt.) H.&A.
	9560	T1812	~~Undet. shrub~~ Petalonyx parryi Gray
	9533	T1785	Datura meteloides DC.
	9559	T1811	~~Borhaavia annulata~~ Boerhaavia leiosolena Torr.
24	9889	A5990	Balsamorhiza hirsuta Nutt. (roots & 3 sack leaves)
	9689	T1942	Cowania stansburiana Torr.
	9888	A5989	Crepis occidentalis Nutt.
	9657	T1910	Dondia sp.
	9910	A6011	Erigeron cocinnus aphanactis Gray
	9682	T1935	Krameria parviflora var. glandulosa (Rose & Painter) Macbr.
	9883	A5984	Parrya menziesii (Hook.)Greene
	9645	T1897	Phacelia ~~sp.~~ integrifolia Torr.
	~~9632~~	T18~~84~~44	Pluchea sericea (Nutt.)Cov.
		H 496	Purshia tridentata
	9755	T2008	Rosa woodsii Lindl.
	9757	T2010	Thamnosma montana Torr. & Frem.
	9677	T1930	~~Undet. "sch-roon"~~ Atriplex canescens (Pursh)Nutt.
	9676	T1929	~~Undet. (shrub)~~ Desmanthus illinoiensis(Michx.)MacM.
	9626	T1878	~~Undet. (shrub)~~ Mortonia utahensis (Cov.)A.Nels.
28	9791	T2044	Cowania stansburiana Torr.
	9795	T2048	Frasera ~~albomarginata~~ induta Tidestrom
	9796	T2049	Gilia aggregata (Pursh)Spreng.

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SHIPMENT NO.	IP no	COLL. NO.	ANALYSIS MATERIAL
28	9797	T2050	Physaria newberryii didymocarpa (Hook.)A.Gray
	10091	A6192	Hermidium alipes S.Wats.
		H 494	Leptotaenia multifida
	9807	T2060	Linum lewisii Pursh
	9789	T2042	Orobanche sp.multiflora Nutt.
	10121	A6223	Parosela polyadenia (Torr.)Heller
		H 498	Sarcodes sanguinea
	9908	A6009	Triglochin sp. maritima L.
	9674	T1927	Yucca baccata
	9675	T1928	Yucca mohavensis
29	11667	H 495	Smilacina stellata
		H 497	Argemone hispida A.Gray
	9749	T2002	Argemone hispida A.Gray
	9752	T2005	Rumex crispus L.
	9805	T2058	Garrya flavescens S.Wats.
	9813	T2066	Cucurbita foetidissima H.B.K.
	9891	A5992	Arabis sp. retrofracta Graham
	10085	A6186	Eurotia lanata (Pursh)Moq.
	10090	A6191	Hesperonia retrorsa Standley
	10090	A6191	Hesperonia retrorsa
	10091	A6192	Hermidium alipes S.Wats.
	10116	A6218	Sphaeralcea sp. parvifolia A. Nels.
	10169	A6271	Wyethia mollis Gray
		A6271	Wyethia mollis
31	9813	T2066	Cucurbita foetidissima H.B.K.
	9816	T2069	Rhus trilobata Nutt.
			Lupinus seed
	9833	T2086	Frasera albomarginata, induta Tidestrom
			induta
	9914	A6015	Chaenactis douglasii (Hook.)H. & A.
	9927	A6028	Crepis acuminata Nutt.
	10293	A6395	Ephedra sp. nevadensis S.Wats.
33	10284	A6386	Rumex venosus roots
34	10409	T2185	Ephedra viridis nevadensis S.Wats.
	10285	A6387	Lupinus sp. caudatus Kellogg.
36	10410	T2186	Eriodictyon angustifolium Nutt.
37	10121	A6223	Parosela polyadenia (Torr.)Heller
	10370	T2146	Phlox canescens dejecta Nels. & Kenn.

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SHIPMENT NO.	COLL. NO.	ANALYSIS MATERIAL
38	10424 T2200	Abies concolor
	10303 A6405	Artemisia spx heterophylla Nutt.
	10434 T2210	Covillea tridentata (D.C.)Vail
	10292 A6394	Gilia spx wilcoxii A. Nels.
	10575 A6482	Grindelia squarrosa serrulata (Rydb.)Stey. xserrulata
	9928 A6029	Pentstemon deustus
	10334 A6436	Phlox sp.
	A6397	~~Rumex venosus~~ a6386 (not a6397)
	10433 T2209	Sphaeralcea spx ambigua A. Gray ?
	10425 T2201	Symphoricarpos longiflorus albus (L.)Blake
40	10579 A6486	Equisetum spx kansanum Schaffn.
	10578 A6485	Euphorbia spx ocellata var. arenicola (Parish)Jeps.
	10419 T2195	Juniperus sibirica Burgsd.
	10432 T2208	Krameria parviflora var. glandulosa (R.& P.)Macb.
	10415 T2191	Sambucus spx melanocarpa A.Gray
	10569 A6476	Stipa spx occidentalis Thurb.
	10286 A6388	Zygadenus spx paniculatus Wats.
	10570 A6477	Pterospora spx andromedea Nutt.
41	10424 T2200	Abies concolor
	10430 T2206	Datura meteloides DC.
	10275 A6377	Monardella spx odoratissima glauca (Greene)Epl.
	10576 A6483	Populus spx trichocarpa Torr. & Gray
44	10487 T2263	Clematis ligusticifolia Nutt.
	10477 T2253	Ephedra nevadensis S.Wats.
	10427 T2203	Lupinus spx laxiflorus Dougl.
	10545 T2321	Phoradendron californicum Nutt.
	10580 A6487	Pinus monophylla T. & F. " " " "
	10478 T2254	Salvia carnosa Dougl.
	10721 A6628	" " "
46	10923 T2341	Berula erecta (Huds.)Cov.
	10813 A6720	Euphorbia spx glyptosperma Engelm.
	10614 A6521	Gilia spx wilcoxii nela.
	10916 T2334	Gutierrizia lucida Greene " "
	10544 T2320	Gutierrezia sarothrae (Pursh)B. & R. " "
	10924 T2342	Heliotropium spx xerophilum Cock. " "
	10336 A6438	Osmorrhiza occidentalis (Nutt.)Torr. " "
	10928 T2346	Psathyrotes spx annua (Nutt.)Gray
	10573 A6480	Veratrum californicum

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SHIPMENT NO.		COLL. NO.	ANALYSIS MATERIAL
54	10611	A6518	Angelica ~~sp.~~ breweri A.Gray
	11558	T2502	Aster leucanthemifolius Greene
	10894	A6801	Gilia ~~sp.~~ *eremica var. zionis* Craig
	11193	A7003	Heliotropium ~~oculatum~~ xerophilum Cock.
	10899	A6806	Psathyrotes ~~sp.~~ annua (Nutt.)Gray
	10963	T2381	" "
	10928	T2346	" "
	10612	A6519	Sphenosciadium capitellatum A.Gray
	10116	A6218	Sphaeralcea ~~sp.~~ parvifolia A. Nels.
60	11599	T2537	Achillea ~~sp.~~ lanulosa Nutt.
		H 147	Achillea ~~sp.~~ lanulosa Nutt.
	11646	T2585	Aplopappus nanus (Nutt.)D.C.Eat.
	11600	T2538	Asclepias tuberosa
	11563	T2507	Balsamorhiza ~~hirsuta~~ hispidula Sharp
	11635	T2573	Catabrosa aquatica (L.)Beauv.
	11628	T2566	Chamaebataria millefolium (Torr.)Maxim.
		H 48	Cercocarpus ledifolius
	10618	A6525	Gilia aggregata
	11642-a	T2581	Angelica ~~breweri~~ leporina S.Wats.
	11644	T2583	Gilia congesta
	10091	A6192	Hermidium alipes S.Wats.
		H 115	Iris missouriensis
		H 37	Purshia tridentata
	11643	T2582	Wyethia amplexicaulis Nutt.
	11637	T2575	Lygodesmia spinosa Nutt.
61	10673	A6580	Epilobium ~~hornemannii~~
	11659	T2598	Veratrum californicum Dur.
		T	Opuntia basilaris E. & B.
	11665	T2604	Tetradymia comosa tetrameres Blake

Analysis Material Shipped

Report No. 123 (185)

PRELIMINARY REPORT OF ~~SHIPMENTS MADE~~ 1 TO DR. BIETER FOR 1939-40 SEASON. INDIAN DRUG PLANT PROJECT, RENO, NEVADA.

SHIPMENT NO.		ANALYSIS MATERIAL	SACKS	WEIGHT
1	H131	Argemone hispida	2	
	T3303	Ceanothus velutinus	1	28 lbs.
2	H568	Rosa sp.	2	
	H569	Cuscuta sp.	½	14 "
3	T3421	Bas-un-dook-nut-zoo	2	
	T3422	Heuchera sp.	1	
	T3376	Smilacina sp.	½	
	(T3151 (A6596	Thalictrum sp.	½	
	A6009	Triglochin sp.	½	
	A3413	Clematis sp.	½	45 "
4	T2711	Phlox sp.	2	
	T2720	Eriogonum caespitosa	1	
	T3431	Chrysothamnus nauseosus speciosus	4	
	T3436	Astragalus diurnus	1	70 "
5	T3432	Ephedra viridis	5	
	T3429	Juniperus occidentalis	5	120 "
6	H570	Phragmites communis	5	
	T3436	Astragalus diurnus	2	
	T2720	Eriogonum caespitosus	1	57 "
7	T3431	Eriogonum sp.	3	
	H571	Chrysothamnus sp.	2	48 "
8	T3460	Lithospermum ruderale	6	
	T3461	Artemisia gnaphalodes	3	
	A6192	Hermidium alipes	1	
	T3453	Enceliopsis nudicaulis	½	136 "
9	T2002	Argemone hispida - seeds	1 pkg.	2½ "
10	T3458	Gilia congesta	1 pkg.	2 "
11	T3462	Grindelia sp.	4	
	T3465	Tanacetum vulgare	6	73 "

Total pounds to date - 595

Total sacks to date - 64

compiled Sept 1955

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TOTAL SHIPMENTS TO DR. BIETER

1938.

SHIPMENT NO.	COLL. NO.	ANALYSIS MATERIAL	SACKS	WEIGHT OF SHIPMENT
15	T 1309	Thamnosa montanum	1	
	T 1281	Larrea tridentata var. glutinosa	1	
	T 1332	Phoradendron californicum	1	30 lbs.
16	T 1285	Nicotiana trigonophylla	1	
	H 493	Paeonia brownii	1	
	H 494	Leptotaenia sp.	1	80 lbs.
17	T 1613	Eriogonum inflatum	1	
	T 1497	Salvia carnosa	1	
	T 1627	Euphorbia polycarpa	1	30 lbs.
19	T 1669	Anemopsis californica	½	
	T 1727	Eriodicyton angustifolium	½	
	T 1772	Juniperus siberica	1	
	T 1752	Odestemon sp.	1	
	T 1703	Mirabilis froebelli	1	24 lbs.
20	T 1791	Sphaeralcea sp.	1	
	T 1843	Anemopsis californica	1	
	T 1812	Undet. shrub	1	
	T 1785	Datura meteloides	1	
	T 1811	Borhaavia annulata	1	50 lbs.
24	A 5990	Balsamorhiza hirsuta (roots & 3 sack leaves)	4	
	T 1942	Cowania stansburiana	1	
	A 5989	Crepis occidentalis	2	
	T 1910	Dondia sp.	1	
	A 6011	Erigeron cocinnus aphanactis	2	
	T 1935	Krameria parviflora	1	
	A 5984	Parrya menziesii	2	
	T 1897	Phacelia sp.	1	
	T 1844	Pluchea sericea	1	
	H 496	Purshia tridentata	3	
	T 2008	Rosa woodsii	2	
	T 2010	Thamnosma montana	1	
	T 1930	Undet. "moh-roon"	1	
	T 1929	Undet. (shrub)	1	
	T 1878	Undet. (shrub)	1	284 lbs.

Petalonyx parryi

Mortonia utahensis

Desmanthus illinoiensis

Atriplex canescens

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SHIPMENT NO.	COLL. NO.	ANALYSIS MATERIAL	SACKS	WEIGHT OF SHIPMENT
28	T 2044	Cowania stansburiana (2½)	3	
	T 2048	Frasera albomarginata(½)		
	T 2049	Gilia aggregata		
	T 2050	Physaria newberryii	1	
	A 6192	Hermidium alipes	2	
	H 494	Leptotaenia multifida	5	
	T 2060	Linum lewisii	2	
	T 2042	Orobanche sp.	1	
	A 6223	Parosela polyadenia	4	
	H 498	Sarcodes sanguinea	1	
	A 6009	Triglochin sp.	1	
	T 1927	Yucca baccata	1	
	T 1928	Yucca mohavensis	1	487 lbs.
29	H 495	Smilacina stellata	2	
	H 497	Argemone hispida	1	
	T 2002	Argemone hispida	1	
	T 2005	Rumex crispus	1	
	T 2058	Garrya flavescens	2	
	T 2066	Cucurbita foetidissima	1	
	A 5992	Arabis sp.	2	
	A 6186	Eurotia lanata	3	
	A 6191	Hesperonia retrorsa	2	
	A 6191	Hesperonia retrorsa	2	
	A 6192	Hermidium alipes	1	
	A 6218	Sphaeralcea sp.	2	
	A 6271	Wyethia mollis	2	
	A 6271	Wyethia mollis	4	274 lbs.
31	T 2066	Cucurbita foetidissima (½)		
	T 2069	Rhus trilobata (2½)	3	
		Lupinus seed		
	T 2086	Frasera albomarginata, var. induta	2	
	A 6015	Chaenactis douglasii	3	
	A 6028	Crepis acuminata	3	
	A 6395	Ephedra sp. nevadensis	4	230 lbs.
33	A 6386	Rumex venosus roots	4	108 lbs.
34	T 2185	Ephedra viridis	13	
	A 6387	Lupinus sp. caudatus	7	210 lbs.
36	T 2186	Eriodictyon angustifolium	11	110 lbs.

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SHIPMENT NO.	COLL. NO.	ANALYSIS MATERIAL	SACKS	WEIGHT OF SHIPMENT
37	A 6223	Parosela polyadenia	5	
	T 2146	Phlox canescens	2	56 lbs.
38	T 2200	Abies concolor	3	
	A 6405	Artemisia sp. heterophylla	4	
	T 2210	Covillea tridentata	4	
	A 6394	Gilia sp. wilcoxii	1	
	A 6482	Grindelia squarrosa serulata	9	
	A 6029	Pentstemon deustus	6	
	A 6436	Phlox sp.	1	
	A 6397	Rumex venosus	1	
	T 2209	Sphaeralcea sp.	5	
	T 2201	Symphoricarpos longiflorus	4	390 lbs.
40	A 6486	Equisetum sp.	4	
	A 6485	Euphorbia sp.	1	
	T 2195	Juniperus sibirica	3	
	T 2208	Krameria parviflora	2	
	T 2191	Sambucus sp.	1	
	A 6476	Stipa sp.	1	
	A 6388	Zygadenus sp.	1	
	A 6477	Pterospora sp.	1	173 lbs.
41	T 2200	Abies concolor	6	
	T 2206	Datura meteloides	2	
	A 6377	Monardella sp.	4	
	A 6483	Populus sp.	5	230 lbs.
44	T 2263	Clematis ligusticifolia	2	
	T 2253	Ephedra nevadensis	6	
	T 2203	Lupinus sp.	3	
	T 2321	Phoradendron californicum	3	
	A 6487	Pinus monophylla	6, wood	
		" "	2, pitch (cans)	
		" "	2, leaves	
	T 2254	Salvia carnosa	18	462 lbs.
	A 6628			

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SHIPMENT NO.	COLL. NO.	ANALYSIS MATERIAL	SACKS	WEIGHT OF SHIPMENT
46	T 2341	Berula erecta	1	
	A 6720	Euphorbia sp.	1	
	A 6521	Gilia sp.	2	
	T 2334	Gutierrizia lucida	1, roots	
		" "	2, stems, leaves	
	T 2320	Gutierrizia sarothrae	2, roots	
		" "	2, stems, leaves	
	T 2342	Heliotropium sp.	1, roots	
		" "	2, stems, leaves	
	A 6438	Osmorrhiza occidentalis	1, roots	
		" "	1, stems, leaves	
	T 2346	Psathyrotes sp.	1	
	A 6480	Veratrum californicum	3	190 lbs.
54	A 6518	Angelica sp.	1	
	T 2502	Aster leucanthemifolius	4	
	A 6801	Gilia sp. eremica	3	
	A 7003	Heliotropium oculatum	2	
	A 6806	Psathyrotes sp.	2	
	T 2381	" "	3	
	T 2346	" "	2	
	A 6519	Sphenosciadium capitellatum	1	
	A 6218	Sphaeralcea sp.	1	201 lbs.

Total pounds - 3,619

Total sacks - 297

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shipment additional in 1940

a 1497242	April 20 -	30
a 1675370	May 16	80
a 1675379	May 20	30
a 1675384	June 4	24
a 1675386	" 8	50
a 1675393	" 27	284
a 1676593	July 7	487
a 1676594	" 15	34
a 1676596	" 21	274
a 1676597	" 22	230
a 1676599	" 26	108
a 1676600	" 27	210
a 1676601	" 28	140
a 1676603	" 28	70
		2021 lbs

Total 2,021

aug 4 390

2,411 lbs.

A.S. shipments to Sinclair

No. 124

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Correspondence relating to Indian drug plant project.

File - Reports Aug. 1936

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Special Researc Fund, Dept. Agr. (Bankhead-Jones Act.)

Outline for Research Work Project

Title of project: Research on plants used by American Indians which may be a basis for new agricultural enterprises.

Assigned: Bureau of Plant Industy

Leaders: Supervisory B. Y. Morrison and -

Direct (to be selected)

Perspective: The American Indians developed through the centuries a vast body of information concerning native plants, their usefulness and effect on physiol ogic processes. This liberally admixed with ritual and myth has been handed down from generation to generation, but with the spread of the white man's influence is becoming lost rapidly. It is desirable as soon as possible to survey this field to separated fact from fancy and to find such plants as may be a basis for new agricultural enterprises and determine their adaption and possibilities of commercial production.

Objects: (1) To determine the native plants used by the Indians and the purposes real or assumed for which they were used.

(2) To determine by biological assay whether the plants used for special purposes actually have value for such purposes and, if so, what constituents the plants contain to give them such value.

(3) To determine the environmental conditions uder which and plants found of value do best, with a view to delimiting the areas where they might be grown and to developing propagating, cultural, harvesting and processing methods necessary to their commercial production and utilization.

(Note: The research will be restricted first to certain Indians of the Southwest, except as specific plants assumed by other Indians to have definite properties may come to the attention of the investigators.

Cooperation: Initial cooperation will be negotiated with the Indian Service of the Department of the Interior and with certain organized groups in the Southwest on the Indian and botanical phases of the problem. Physiological and pharmacological phases will be developed in cooperation with the Bureau of Animal Industry of this Department, and, as developments may dictate, with the Food and Drug Administration and the Public Health Service, or with other agencies.

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Bureau of Plant Industry:

Project Leader: Date

Bureau Chief: Date

Approved, and the following allotment of funds, including not to exceed $2,000 for salaries in the District of Columbia, and $0 for the purchase of passenger-carrying vehicles, for the fiscal year of 1937 are hereby authorized:

Bureau of Plant Industry . . . . . $11,000.

Secretary Date.

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Jan. 3, 1938

Memorandum for Dr. E. C. Auchter
Chief, Bureau of Plant Industry

Dear Dr. Auchter:

I should like to be prepared at the agricultural hearings to answer briefly as to accomplishments and present status of each of the research projects under the Special Research Fund. In order to do this I should have a statement of a few paragraphs from each of the project leaders

. . . . brief statement without too much detail emphasizing the following points: 1) The scope of the work to date, 2) agencies cooperating, 3) accomplishments of significance, especially whose which might be of interest to Congress, and 4) the probable research that must yet be undertaken before recommendations for practive can be made:

Title

No.

. . . . . .

SRF-2-36 Research on plants used by American Indians which may be a basis for new agricultural enterprises Leader-W.A.Archer

James T. Jardine

Director of Research
and
Chief, Office of Experiment Stations.

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(excerpt)

Minneapolis, Minn.
Nov. 18, 1936

Dear Mr. Morrison:

.....

I want you to know that Im becoming more and more interested in this medicinal plant problem. I certainly appreciate Mr. Richey's stand in talking to me so early about it. It takes a lot of time to think it all over, build it all into a coherent and clear program and then get up on top of it. I believe I am doing that however, and "believe" me Im enjoying it a lot. I even dream about it at night. Well, such is the workings of my mind, to prepare as fine a program in this field as is humanly possible. Within a few weeks Ill hope to send you some idea of what is going thru my mind.

Raymond N. Bieter

(196)

October 16, 1937.

Dr. R. N. Bieter,
Department of Pharmacology,
The Medical School,
University of Minnesota,
Minneapolis, Minn.

Dear Doctor Bieter:

I very much appreciate your letter of October 14 and took the opportunity this morning to talk it over with Mr. Richey. I find that he is planning to be in Chicago shortly and he has asked me to find out if it will be possible to see you in Minneapolis on October 25. He, of course, would like also to have the opportunity of meeting Doctor Diehl and any others of your staff whom he should meet at that time.

We are very much enthused over the progress you have made in outlining the work to be undertaken in Minneapolis.

Mr. Richey hopes to be able to see Doctor Jardine very shortly and as soon as he has conferred with him, we will be in much better position to answer your inquiry as to how long the project may go on and what funds may be allotted to it in the future. I feel rather certain, however, that we would be safe in saying that it could certainly go on for three or four years and that after this fiscal year there will be a larger amount available for this portion of the project than there can be this year on account of the allotments we have made for the botanical collections.

The other questions raised in your letter can be answered much more satisfactorily after we have a little more information here and probably when Mr. Richey can see you in person.

Very sincerely yours,

B. Y. Morrison,
Principal Horticulturist in Charge.

BYM.MMB
cc to Mr. Richey

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COPY

UNIVERSITY OF MINNESOTA
The Medical School
Minneapolis

Department of Pharmacology October 14, 1937.

Mr. B. Y. Morrison,
Principal Horticulturist in Charge,
Division of Plant Exploration and Introduction,
U. S. Department of Agriculture,
Washington, D. C.

Dear Mr. Morrison:

I was very glad to receive your letter of October 11th relative to the Medicinal Plant set-up. As far as my own position is concerned, your arrangements for me are entirely satisfactory. In case you don't know, my period of service here at the University is from Sept. 15 through June 15.

As regards a full-time assistant, I believe we can compromise on almost any salary comparable to equivalent Civil Service work. But before I go into this, I should like to describe for you how I propose to do this work.

During this past summer, I had no idea that you would be able to offer me any assistance. Therefore I began to think of ways and means for accomplishing the most experimental work, especially because the specimens were coming in at a high rate. The fundamental problem is to study the pharmacological action of these drugs; whole, and split apart or divided into their various chemical constituents. Besides the pharmacology, therefore, this involves extractive and chemical work. It so happens in our present civilisation that this extractive and chemical work is the chief activity of pharmaceutical chemists. As the University has an outstanding man in this field, in the nearby College of Pharmacy, it was only natural that I should go to him for this phase of the work. And as you can suppose, he had agreed to do this part of the work for me, and under my direction, or perhaps I rather should say, along the lines that my own pharmacological studies would indicate as promising. Thus together we could accomplish much more than I could alone.

Now, with your help, I should like to continue this arrangement. The grinding and extraction machinery alone would cost $1000. to $1500. to install. We in the medical school do not wish to duplicate this as long as the College of Pharmacy is well supplied. Our Dean, Dr. Diehl, concurs in this wish. Another reason for continuing this arrangement is that I should prefer to devote all my energy and time to the pharmacological action of these crude drugs and their constituents. For after all, if I cannot find any uses for these substances, we will have nothing of practical importance. This alone will be a difficult and most important task, and therefore I should prefer not to undertake the whole responsibility for the chemical preparations and isolations. You can perhaps realize the different fields of coordinate action when I tell you that, in my opinion, your group in the Division of Poisonous and Medicinal Plants is one largely of Pharmaceutical Chemists who are working without pharmacological direction. This is my opinion, arrived at during my few days in Washington a year ago. This, moreover, is not a

detrimental opinion of the men in this division. I am sure you can see that.

I should now also add that our own Professor of Pharmaceutical Chemistry, Dr. Glenn L. Jenkins, is just as interested in this work as I am. He has a class of 8 graduate students in Plant Pharmaceutical Chemistry. With my consent, at the beginning of this academic year, he issued to each student one of the Nevada plants for them to work up chemically. And before long I hope to begin some pharmaceutical work on them over here. The chemical study of each of these will take these students most of this academic year. You see, therefore, that the work is rather slow. I look at this work of these graduate students, and the work and supervision of Dr. Jenkins, as a contribution from us toward your ultimate goal. I also have one teaching assistant in our own department. His time is divided into one-half for graduate work and one-half for departmental work. This year his departmental work (other than his teaching) will be put in also on this Drug Plant Project. If possible, I also hope to have him work up his thesis in this field. This man's time and my own are also among the contributions from the University.

Now to return to the question of my assistant. If I were to obtain a trained pharmacologist, it would be necessary to pay at least $2400. per year. We have no one here available for such a position, and now that the academic year has started, I doubt that we could find a suitable person. If you wanted me to obtain such an individual, I would wish to be quite particular and that, of course, would take some little time.

Another arrangement we might use is as follows. We have a classification here called a Research Assistant who receives $125.00 per month. This appointment here usually runs either for nine months (with no vacation during the pay period), or for twelve months (with four weeks vacation during the pay period). A candidate for such a position must be at least a college graduate. Our junior medical students have received the B.S. or B.A. degree; consequently would be eligible here for such an appointment. They must also have the approval of the individual for whom they are to work and that of the Dean of the college concerned. Now if you would be able to supply me with two of these appointments, I would prefer to assign one to do pharmacological work here and the other to work on the pharmaceutical chemical aspects with Dr. Jenkins. Ordinarily, it is quite difficult to obtain full-time Research Assistants because students prefer to go to school, if they can afford it, or the graduates prefer to go out and practice medicine. At present, however, I believe I can find two men who would qualify for these positions. They are advanced students who cannot afford to finish this academic year. I know positively of one man, a junior medical student, who would be willing to take this position until October 1, 1938. This man has been conducting research for me in pharmacology for the past two years, and is entirely capable. I must admit, however, that at present I am not positive about the second individual.

A third arrangement that can be used is the Research Assistantship on a half-time basis. These people receive $600.00 for nine months of service or $750.00 for twelve months of service, with no leave on salary for vacation.

These "fellowships" are primarily for students working for the Master or PH.D. degrees. One-half of their time is for registration in the Garduate School. On this basis, if you could supply three or four of these positions, I, again, would assign one or two of these to Pharmaceutical Chemistry under Dr. Jenkins. These positions would again be hard to fill now that the academic year has started. But to plan, within six months or so, to fill positions like this for the next academic year would be relatively easy. I might add that six months ago I had two fine prospects, both of whom I could have taken on had I something to offer them. Well, I sent them both to Johns Hopkins, and there they are.

I am sure you realize that with any of these arrangements, some information as to how long this cooperative agreement will last would be worth while. Have you any opinion on this subject that you would care to transmit to me? From my standpoint, I am willing to carry on for a number of years. If you wanted me to obtain the services of a trained pharmacologist, what assurance could I give this person that the position would last for more than this academic year? The same thing is true of the part-time Research Assistants. I would hate to take them on for 1 or 2 years and then be forced suddenly to tell them that it is all off. On this subject, I wish you would be frank, brutally so if necessary.

Which of these three arrangements would be preferable, I can't say at present. I would rather that you think this matter over and then if you wish, write me again. Each of these classifications has its merits and benefits, and each has some drawbacks. To do the most work quickly, a trained pharmacologist would be the best bet. Over a long period of time, I believe the part-time assistants would be almost as good (assuming that approximately the same amount of money is used in each group). The full-time Research Assistant is excellent, if a good man can be found. The chief difficulty is, however, that a student without a doctor's degree wants to go to school, and the graduate wants a better job. If you prefer to start out this year on a small basis, and increase it next year - that would be satisfactory to me. What I am aiming to do in this letter is to give you a complete picture and then let you select whatever you can put through.

No, I have never seen a Memorandum of Understanding between this University and any other organization. Whatever is agreeable to you and to the administration here, I am sure will be satisfactory. Dr. Diehl has already instructed me to take over two research laboratories (one 12x22 ft., and one 22 x 23 ft.) for the pharmacological part of this project, and that is now being done. Later, if we need additional space, I am sure we can obtain more. Also, in the College of Pharmacy, we have available space. Do you want a detailed description of our research rooms and equipment?

I should imagine that the memorandum should have to do largely with me. I don't think that Dr. Jenkins in Pharmaceutical Chemistry, Dr. Larson in Bacteriology, or Dr. McKinley in Internal Medicine need come into the agreement. What I wish to do is to use the assistance of each as is needed. I have spoken to each again in this connection and I am sure we are all clear on this subject. However, if you have any other questions or suggestions along this line, do not hesitate to send them to me. It may be added, however, that the assistance to be obtained from Dr. Larson and Dr. McKinley will be much less than that obtained from Dr. Jenkins.

Now as to the question of an estimate for supplies and animals. As you know, I can't estimate this accurately as yet. As you can see, the first three items below are the most essential ones. I hope you will not consider these figures exorbitant. I have put these down as yearly estimates; however, next year (if it continues) you might find my estimates to be higher.

For extraction procedures; solvents, unusual chemicals, purchase and replacement of minor glass preliminary extraction apparatus	\$300 - \$500
For animals for pharmacological work; dogs, cats, rabbits, guinea pigs, rats, mice, and occasional other species as needed.	300 - 600
For bacteriological media for cultures for inoculation of animals	35 - 50
Total	\$625 - 1150.

Further, as regards supplies, will your funds allow the purchase of so-called permanent apparatus? By this I mean pieces of equipment for carrying out experimental procedures that will not necessarily wear out during the conduct of the experiment. Examples would be instruments for recording blood pressures and respiration or an apparatus with which to administer artificial respiration to an animal. If you allow such expenditures, even \$100 would be useful.

The same question arises in regard to the purchase of animal cages to house infected animals undergoing our proposed treatments. We can have cages made in the University tin shop at costs of from several dollars up to \$7 or \$8 (the usual price of most of our small animal cages) and up, per cage. We do not have available as many cages as I would like, so again if you are able and willing, any sum of money would add to our medicinal plant facilities.

I have mentioned these two above groups of items, first, to get your reaction and secondly, to let you realize that our facilities are not unlimited. I also have a Graduate Research Fund of several hundred dollars, part of which I hope to use for various things in this medicinal plant research. I have already ordered sixty dollars worth of equipment from this fund. In addition, however, if you are able to supply any funds for these purposes, it will help materially. If you should want a list ~~at~~ of any items, I'd be glad to supply it.

Lastly, I have one other item I wish to mention along the line of funds for this work, and that is for a service man. The University has the position of animal caretaker who receives \$1320 per year (with 2 weeks vacation during pay period) and also the position of service man at \$1080 to \$1380 per year (with 2 weeks vacation during pay period). If you could supply the money for a position like this, the man's duties would be a combination

of the above two classifications, namely to take care of the animals (clean cages, feed and water the animals and procure new supplies), do minor janitorial work, keep the apparatus in good repair, wash glassware, etc., or anything along this line pertaining to the medicinal drug project. I am sorry to say that in this line of work our University is not staffed sufficiently so that I could borrow this sort of service from our department or any other. Our department has one service man, but he already has too much to do to assume much more work.

I suppose I should add that heat, light, gas, water, routine equipment, etc., will be supplied by the University.

Now please understand, Mr. Morrison, I am not demanding a thing. If you give us nothing, I will still go along on whatblittle I have, as far as possible. On the other hand, whatever you can give us will be gratefully received and used to the best advantage. I don't mind telling you that the recent correspondence from you and Mr. Richey has resulted in our Dean taking a keen interest in this work. In fact, the first thing the Dean did was to instruct me to take over our two choicest research rooms for the project, and they were not mine previously either. So what I hope to do, with your help, is to set up a very workable, neat and clean set of experimental tools, so to speak, that he, you, Mr. Richey, and I all will be proud to look at, watch and use. I do not want to be extravagant, but I do want workable "stuff" kept in perfect condition, so that our waste time and materiall will be at a minimum.

I am inclosing my own application blank, filled out, but I shall not send any others until I hear more from you. I hope this letter gives you the necessary information. If you want more, please write for it. I shall wait with pleasure further word from you.

Very sincerely yours,

Raymond N. Bieter,

RNB:H
Inc.

COPY

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UNIVERSITY OF MINNESOTA
The Medical School
Minneapolis

Deapartment of Pharmacology

October 30, 1937.

Dear Mr. Morrison:

Because Mr. Richey told me that he would not be back in Washington for a few days, I am writing to you for some information.

On page 5 of the proposed Memorandum of Understanding (A copy of which I assume you have) is a note to the effect that the University of Minnesota is to supply as cash expenditures and estimated value of facilities furnished, the sum of $2,000 in 1938 and $4,000 per year thereafter. My chief and the Dean would like some information and clarification on this point. Do you wish the University to supply a certain definite sum of money per year?

In this same table the Bureau of Plant Industry is to supply $4,000 in 1938 and up to $8,000 per year thereafter. In this connection our Dean asked me how much of this will be sent here and how much actually spent in Washington. For Example, I believe that Mr. Richey told me last Saturday in Chicago that all salaries would be paid direct out of Washington but that supplies and animals were to be purchased here. In other words will you send the University money from time to time to purchase these supplies and animals?

Mr. Richey talked over with me that arrangements for possible patents. We thought that the control should be held jointly by the Secretary of Agriculture and the University of Minnesota. The Dean was of the opinion that this would be satisfactory, but must talk to some of the other administration officials to make sure. Do you know, will any and all patents that come out of this, be public service patents and this devoid of any income for the holders?

Our Dean has been away until this morning so consequently I could not take up any of these matters sooner. I'm sure therefore we wont be able to start the agreement by November first.

If you prefer to let this letter await the return of Mr. Richey, that will be satisfactory to me.

With best wishes, I remain

Sincerely yours,

/s/ Raymond N. Bieter

MEMORANDUM OF UNDERSTANDING
between
THE MEDICAL SCHOOL,
THE UNIVERSITY OF MINNESOTA
and
THE BUREAU OF PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

Relative to:

Investigations on native plants to determine their drug or medicinal value.

Effective: November 1, 1937.

The object of these cooperative investigations is to conduct studies on native plants reported to be of drug or medicinal value, particularly by the American Indians, as to their occurrence, identity, reported use, possible chemical nature and agricultural value; together with a survey of existing literature bearing upon these investigations.

It is understood that while both parties are interested in fundamental research, the Bureau of Plant Industry is primarily concerned with results which would lead to the determination of plants of authentic drug or medicinal value, and to their production as agricultural crops, and the University of Minnesota with the verification of reported therapeutic values and further investigation of them.

These investigations are conducted by the Bureau of Plant Industry by virtue of authority included in the Act establishing the U. S. Department of Agriculture and the annual appropriation acts providing funds for the activities of the Bureau of Plant Industry.

A. The University of Minnesota agrees:

1. To furnish space for office and laboratory purposes, including heat, light, water and gas, and to provide for free use of available laboratory equipment.

2. To provide general supervision at the cooperative laboratories and technical assistance so far as may be possible through its staffs.

B. The Bureau of Plant Industry agrees:

1. To provide scientific direction of the cooperative investigations, and such additional technical assistants as may be necessary and available, and to pay travel and other expenses of its employees; to furnish bibliographical and clerical assistance and miscellaneous labor in so far as may be practicable.

2. To provide, in so far as possible, seeds and other plant material of probably value in these investigations. To furnish such supplies as may be necessary and mutually agreed upon.

C. It is mutually agreed:

1. That the details of the cooperative work shall be planned and executed jointly by the University of Minnesota through its Medical School, and such other Departments, bureaus, surveys, or divisions as may contribute to solution of the problems, and the Bureau of Plant Industry

through its Division of Plant Exploration and Introduction, or other interested Divisions. Outlines covering plans for the work and methods of procedure shall be prepared jointly, subject to revision by joint action as progress of the work justifies. Copies of these plans as required will be filed with the Head of the Medical School, University of Minnesota and the Chief, Bureau of Plant Industry.

2. A complete report of the results of the experiments shall be submitted each year by the individual or individuals in direct charge of the cooperative work, one copy to be furnished to the University of Minnesota and one copy to the Division of Plant Exploration and Introduction, Bureau of Plant Industry, such report to be delivered as soon as is practicable after the end of the year.

3. Either party to this agreement shall be free to use any of the results obtained in the undertaking in official correspondence, giving due credit to the other agency. It is understood that neither party will publish any results without first consulting the other. Publication may be joint or independent as may be agreed upon, always giving due credit to the cooperation and recognizing within the proper limits the rights of the individuals doing the work. In case of failure to agree as to manner

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of publication or interpretation of results, either party may publish data after due notice and submission of the proposed manuscript to the other. In such instances the party publishing the data will give due credit to the cooperation but will assume full responsibility for any statements on which there may be difference of opinion.

4. In the event that patentable inventions result from this cooperative activity, applications will be made for a patent to be dedicated to the public use, with or without retention of administrative control in the Department of Agriculture or the University of Minnesota as circumstances may warrant. The kind of patent and steps to be taken in each case will be determined by conference of the cooperating agencies, and in accord with Department Rules and Regulations.

5. Either party shall be free to install such equipment as may be needed and otherwise unavailable. Equipment purchased from Federal funds shall remain the property of the United States Department of Agriculture, subject to removal or other disposition upon termination of this agreement. Equipment purchased from State funds shall remain the property of the cooperating agency, subject to its disposition.

6. That the obligations of each of the contracting parties are contingent upon funds being available from which the expenditures legally may be met.

7. This memorandum of understanding is to define in general terms the basis on which the agencies concerned will cooperate, and does not constitute a financial obligation to serve as a basis for expenditures. Any and all expenditures from Federal funds in the Department of Agriculture made in conformity with the plans outlined in this memorandum of understanding must be in accord with Department Rules and Regulations, and in each instance based upon appropriate finance papers, such as lease, contract, requisition, letter of authorization, etc. Expenditures made by the University of Minnesota will be in accord with its rules and regulations.

8. No member of or delegate to Congress or resident Commissioner, and no officer, agent or employee of the Government shall be admitted to any share or part of this agreement or to any benefit to arise thereupon; and no convict labor shall be employed in carrying out the terms of this agreement.

9. Expenditures in any one fiscal year shall not exceed the amounts indicated below, including cash expenditures and estimated value of facilities furnished.

	Fiscal years		Future years
	1938	1939	
Bureau of Plant Industry.....	$4,000	$8,000	$8,000
University of Minnesota.....	2,000	4,000	4,000

Changes in amount may be made in advance of any fiscal year, with not less than ninety days notice.

10. This memorandum of understanding shall become effective November 1, 1937, and shall continue indefinitely, unless modified or discontinued by common consent. Requests for termination or any major changes shall be submitted to the other parties for consideration not less than ninety days in advance of the effective date desired.

_____ (Date)

_____
Head of Medical School,
University of Minnesota

_____ (Date)

_____
Chief, Bureau of Plant Industry

Approved: _____ (Date)

_____
Chief, Office of Experiment Stations

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AIR MAIL

November 2, 1937.

Dr. Raymond N. Bieter,
Department of Pharmacology,
The Medical School,
University of Minnesota,
Minneapolis, Minnesota.

Dear Doctor Bieter:

I am not waiting for Mr. Richey's return in answering your letter of October 30 in so far as I can. Of course, I do not know what Mr. Richey may have said nor how he may have expressed himself, but I have the feeling that none of the points which you raise are real difficulties but merely examples of things which you do not understand from lack of familiarity with our vocabulary.

On Page 5 of the Memorandum, Item No. 9, should be read in its entirety. As you may not have it before you at the moment, I quote it herewith:

> Expenditures in any one fiscal year shall not exceed the amounts indicated below, including cash expenditures and estimated value of facilities furnished.

Please look at that sentence very carefully. In the first place it indicates that the figures which are given are maximum; it says absolutely nothing about minimum. Also, it says "including cash expenditures and estimated value of facilities furnished. It very specifically does not say who is to furnish cash and who is to furnish facilities. It is my understanding that in this case we are to furnish the cash and you are to furnish the facilities. There may be some small incidental expenses which you will be expected to meet, but certainly it is not my understanding that you will have to produce $2,000 in cash or $4,000 next year or thereafter. This evaluation is supposed to represent the value of your advice and direction, rent of the room in which activities take place, the use of various instruments and apparatus, etc.

My understanding is that nothing in the way of cash will be sent to you to be administered. Persons who become the employees working on this project become thereby employees of the Department of Agriculture on field status and receive their checks from the Department of Agriculture through the mail. For such a project we have also what we

call a Letter of Authorization. This document is like a budget sheet in that it shows you the total amount of money for which authority is given in the making of purchases. The wording of the Letter also indicates just how this money may be spent, etc. I have no idea at the moment what the Letter of Authorization will be for this particular project.

I am sorry that I do not know what Mr. Richey may or may not have said about the possible patents. It is my understanding, although I am not certain, that they do not necessarily have to become public service patents. I think I am right in saying that it is sometimes rather difficult to determine what if any revenue may come to any individual through a patent.

Very sincerely yours,

B. Y. Morrison,
Principal Horticulturist in Charge.

BYM.MMB

(15)

Indian Plant Project

UNIVERSITY OF MINNESOTA
THE MEDICAL SCHOOL
MINNEAPOLIS

Dr. Bieter asked 11-11-37 in mail

(211)

DEPARTMENT OF PHARMACOLOGY

Nov 8 1937.

Mr B.Y. Morrison,
Principal Horticulturist in Charge,
Div. of Plant Exploration and Introduction,
Bureau of Plant Industry,
U.S. Dept. of Agriculture,
Washington, D.C.

Dear Mr Morrison,

In reply to your letter of Nov. 6th, all I can tell you about spending the money for salaries is what I obtained from a few penciled notes of Mr Richey. I only made a copy of them, as he did not offer them to me.

Here is what I have:

1 principal scientist, 1/4 time	1400.00
1 Underscientific aid (full time)	1260.00
4 " " (1/2 time each)	2520.00
Equipment & supplies	1070.00
Travel	250.00
Total	$6500.00

He further told me that I could purchase animal cages out of the above supplies budget. Also that I could have an "agent" for taking care of the animals etc, but that this person's salary would come out of the above salary budget.

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UNIVERSITY OF MINNESOTA
THE MEDICAL SCHOOL
MINNEAPOLIS

DEPARTMENT OF PHARMACOLOGY

Ive been pretty busy for the last 10 days giving some "health talks" to college students for the Minn. State Medical Assn., but Ill be thru on Nov. 10th. Consequently, I havent had time to go over these figures carefully. But there is no agreement between them and those I quoted to you in my letter of Oct 14th. For example, the full time Underscientific Aid is down for $1260.00 This position here calls for $125.00 per month, and this for 12 months does not amount to the above total. Does this position therefore carry less than $125.00 per month salary, or is it only for nine months. If the latter is the case, then Ill have no assistants during the summer. By this arrangement then, do you want me to work alone during the summer? I should prefer to have some assistants at this time. The same discrepancy holds for the ½ time aids. In addition, I havent decided whether to scrap approximately $1000.00 worth of this help in favor of an "agent" to take care of the animals etc, or not. If I did this, you see, I'd only have 4 one half time underscientific aids left.

So much for now. If you have any suggestions please send them. After Wednesday of this week, Ill go over this again and write you.

Sincerely yours, as ever,

Raymond N. Bieter.

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Extract

Washington, D. C.
Nov. 29, 1937

Dear Doctor Archer:

Mr. Richey has come back from Minneapolis but we have not yet received the signed agreement from Minnesota as to how our cooperation is to go on there. This means that we are still waiting to know what money we may need for that project for the balance of the fiscal year. We do know, of course, that we do not have enough in our whole budget to handle anything like the work that must be undertaken there or very much in the way of collection in Nevada next spring.

.....

I am extraordinarily glad that Mr. Richey had a chance of going to Minneapolis for he could see for himself the fine lot of material sent from Reno for Dr. Bieter's use and he could hear from the specialists in Minneapolis the expressions of appreciation without having them seond hand. We has already had a chance to tell Dr. Jardine how successfully that phase of the work has been prosecuted. Just as soon as I can mae a good opportunity to show him the bibliographical work of both Mr. Henrichs and Miss Grinnell, I think that conversions will be complete.

B. Y. Morrison

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Indian Plant Project

January 27, 1938.

MEMORANDUM FOR DR. E. C. AUCHTER Chief

Dear Doctor Auchter:

In so far as we can tell from our files in this Division, the Bureau of Plant Industry received first a memorandum from Doctor Jardine to Mr. Richey, dated January 14, 1936, which transmitted a letter of January 9, 1936 from Mr. John Collier, Commissioner, Office of Indian Affairs, to Hon. Henry A. Wallace. Attached to Mr. Collier's letter was a memorandum submitted by Dr. Julian Steward, Consultant Anthropologist, and Dr. H. Scudder Mekeel, Field Representative in Charge of Applied Anthropology, outlining "A plan for an Ethnobotanical Laboratory." From the Secretary's office this correspondence was first transmitted to Doctor Jardine who sent it on February 19, 1936 to Dr. H. G. Knight, Chief, Bureau of Chemistry and Soils. Doctor Knight's reply was dated February 25, 1936.

Doctor Jardine transmitted these communications of later date to Mr. Richey with a memorandum, dated February 28, 1936, so that by that time Mr. Richey had the entire file.

I think it would be interesting, in the face of later developments, to remember that in his transmitting memorandum of February 28, 1936, Doctor Jardine says, "Before answering the attached jacketed letter for the Secretary's signature, I should like comments from your Bureau inasmuch as the subject is largely botanical."

There was some informal discussion before Mr. Richey's reply of March 5, 1936 was sent on and it was my understanding that, although everyone felt that the project was a desirable one, no one in the Bureau of Plant Industry felt that it came entirely within our proper field. It approached most closely the interest of some of the former workers in Doctor Coville's unit, particularly the late Doctor Safford.

The proposal as it came from Mr. Collier was not confined by any means to Indian drug plants but had to do with all phases of plant study as it related to Indian life, agriculture and medicine, with religious uses also, if they can not be included under the medicinal headings.

It was also the general understanding that the Secretary said that he was interested in this project.

We do not have in our files copy of Doctor Jardine's final reply for the Secretary's signature to Mr. Collier.

We do not have in our files any copy of Doctor Jardine's letter transmitting various papers from the Indian Botanical Institute, but Mr. Richey returned this file to Doctor Jardine with a memorandum dated June 6, 1936. We do, however, have in our files copies of the correspondence of Dr. Alida C. Bowler, Secretary, Indian Botanical Institute Committee, writing on the letterhead of the Department of the Interior, Office of Indian Affairs, Field Service, from her official station, Carson Indian Agency, Stewart, Nevada, February 11, 1936, addressed to the Secretary of Agriculture on behalf of the Indian Botanical Institute Committee and asking for funds to support research. To support her request, she submitted a formal paper outlining a desired budget and giving the personnel of the committee. It should be noted that that committee did not have any representative of the Experiment Station of the University of Nevada as such. This paper was also supported by statements of Prof. Philip A. Lehenbauer of the Biology Department, University of Nevada, and by Mr. James R. Henrichs, who had been a graduate student of Professor Lehenbauer's and who was then in charge of a bibliographical project in Reno, originally carried on under F.E.R.A. funds and later carried on under W.P.A. direction with some assistance from the National Youth Movement. There is attached to our file a memorandum from me to Mr. Richey, dated June 24, 1936, commenting upon this project.

It is my understanding that Mr. Richey asked that this project be put in my Division on account of its botanical implications and because he felt that its preliminary stages should be in the botanical field. He hoped that if it had to be carried on to its proper pharmacological stages, someone might be found who could be added to the staff of our Division of Drug and Related Plants.

Mr. Richey had been making inquiries as to various persons who might be considered as suitable additions and had recommended to him the name of Dr. Raymond N. Bieter in the University of Minnesota. I think I am correct that at that time Mr. Richey hoped to obtain additional funds in the regular appropriation which would be used in conjunction with anything we might do for the Nevada project under the Bankhead-Jones Appropriation, and I think I am correct in saying that he hoped that Doctor Bieter or someone else might have been permanently appointed at this time.

Doctor Bieter came here and a general discussion of the project was carried on in Mr. Richey's office.

In October, 1936, I went to Reno to see what the situation was and was joined by Doctor Bieter at Omaha. We found that the Indian Botanical Institute was non-existent and that the committee consisted of Miss Alida C. Bowler, already referred to, with the addition of Dr. Charles L. Tranter, Dr. Philip A. Lehenbauer, Dr. Ross B. Wiler, Dr. S. Allan Lough,

and Mr. Meredith R. Miller. We were shown the work being carried on by W.P.A. funds (a Nevada State Project), the Carson Indian Agency where land would be available for botanical planting, if desired, the University botanical rooms, which were small and not suited for housing a large project.

I returned to Washington and reported virtually what had been said here and said that I believed that it would be just as well to forget the Indian Botanical Institute as such and to enter into cooperative arrangements with the University of Nevada, so that Professor Lehenbauer, Botanist of the University, Mr. Henrichs his former student, and the Library, which was already cooperating, might have direct cooperation with us. Any cooperation that we might offer Miss Bowler of the Carson Indian Agency would be purely cooperative and as informal as possible, an arrangement which seemed entirely agreeable to her. The only person apparently disappointed by the arrangement was Doctor Tranter, who hoped to become president of a large institution for which he had very elaborate plans and exceedingly expansive hopes.

In the opinion of all, it seemed desirable to make a plant survey of the State of Nevada as quickly as possible, since the whole state is not well known botanically, with at least a portion of the collectors persons who could talk freely and well with the Indians, gathering from them such lore as they could gather and supporting it by such botanical specimens as they could secure. It is my understanding that whatever lore these Indians of Nevada have is likely to become extinct with the passing of the present generations, since the younger Indians are not interested in this type of information and because little of the knowledge is written down and what records there may be are destroyed in many cases at the time of the death of the owner.

It was learned through Mrs. Harriett Spann, Director of the W.P.A. Project, that anything that we could do to assist by giving employment to members then on relief would be appreciated by the W.P.A. workers and their directors, since they could then use W.P.A. funds for other persons needing relief. They gave us every assurance that we might have duplicates of all their files and records.

As a result, the situation amounted to an informal cooperation with the W.P.A. Project and a formal cooperation with the University of Nevada.

Dr. W. A. Archer, who had been a collector for this Division for some time, was appointed to the project and undertook to organize the collecting crews. This type of collection was recommended by Professor Lehenbauer and most of the persons chosen were recommended by him. On account of the difficulty of travelling in Nevada, this type of collecting proved less effective than we should have liked. The Indian data were particularly to be gathered by three of these collectors. The data themselves have turned out to be of quite unequal value as some of the lore was not properly supported by botanical material.

The staff was reduced as quickly as possible at the end of the season and, as a result of the summer's work, there are 9,000 herbarium specimens, over 900 lots of seed, about one-half ton of experimental material for Doctor Bieter, and a very large collection of data cards together with the collectors' reports of the summer.

No formal arrangement had been made for the division of the funds since we were not at that time in cooperative relationship with the University of Minnesota, although it was informally understood that such an arrangement would be consummated. A larger proportion of our funds was used for the summer's collection than had been anticipated, very largely on account of cost of travel through the collecting areas and the shipping charges between Nevada and Washington and Nevada and Minneapolis.

By the time the arrangements were consummated with the University of Minnesota, the unobligated balance of the Bankhead-Jones allotment for the fiscal year 1938 was $639.36. There was, however, an L/A on which an unobligated balance remained of $ 200.45. This, however, would be needed very largely by Mr. Henrichs for the balance of the fiscal year.

The unobligated balance already referred to was possible only by the removal of Doctor Archer from this project to regular funds in the Division of Plant Exploration and Introduction.

The only persons remaining on this project are Mr. Henrichs, the leader, who is now on our payroll, Miss Grinnell, our librarian in Washington, whose bibliographic subjects supplement those possible in Nevada. Mrs. Nuttall, a stenographer for the project in Nevada, and four months' time allotted for Mr. Train, the most expert of our collectors.

I should like to propose that I take over on to my other regular appropriations, as of February 1, the salary of Miss Grinnell, and as of March 1 the salary of Mr. Henrichs. This will release $1,633.33 which may be added to the unobligated balance of $639.36, making a total of $2,272.69.

As compared with the estimated $4,000 indicated in our proposed Memorandum of Understanding with the University of Minnesota, we are $1,727.31 short of the total of $4,000.

Since it seems desirable that as much work be started as quickly as possible for the chemical, pharmacological and bacteriological investigation of the already collected materials, I hope it will be possible to have a supplementary sum allotted from the Bankhead-Jones Fund to this project.

It might be properly pointed out that no accounting is given of the time spent by our present botanical staff in Washington, paid on regular funds; for the handling of all the materials as they have come in; the clerical and accounting work that has been done, and the preparations which are under way for the agronomic tests of the seed materials which will be conducted in Maryland for the initial stages.

If our allotment of $15,000 is carried through for the next fiscal year, there will be no difficulty in arranging our affairs so that the $8,000 can be given to the University of Minnesota for its project. An analysis of the division of funds follows separately.

When this particular project was initiated, I believe it was hoped by Mr. Richey that it might be eventually supplemented by additions to our regular funds in the Division of Drug and Related Plants, a hope which has not become fact. If it had been accomplished, a general survey of the Indian drug materials of the whole United States would certainly have been contemplated.

If the project is to remain as it is, it seems to us that it would be highly desirable to bring it to a completion with a proper survey of the materials in the State of Nevada, part of which is not yet done, the completion of the work in the University of Minnesota, and the supplementary investigation of the agronomic phases under other appropriations in the Division of Plant Exploration and Introduction.

Very sincerely yours,

B. Y. Morrison,
Principal Horticulturist in Charge.

BYM.MMB
Encl.

Project No. SRF-2-36

Summary of Expenditures

BANKHEAD-JONES ALLOTMENT

F. Y. 1937

Original 1937 allotment of $11,000 approved by the Secretary under date of July 31, 1936. Allocated by the Director of Finance August 5, 1936. Less reduction of $2,405.00 signed by B. Y. Morrison and F. D. Richey June 28, 1937.

ALLOTMENT		$ 8,595.00
Salaries:		
Allen, Roy A.	(5/26-6/30)	$ 175.00
Archer, W. Andrew	(4/1-6/30)	799.98
Breene, Tim Louise	(5/10-6/30)	212.50
Brooks, Manning M.	(5/10-6/30)	212.50
Burke, Anna C.	(2/3-6/30)	518.00
Franklin, George E.	(5/20-6/30)	136.66
Goodner, Frank S.	(5/27-6/30)	113.33
Grinnell, Mary E.	(1/16-6/30)	916.63
Hancock, Newell F.	(5/10-6/30)	170.00
Henning, William G.	(5/27-6/30)	113.33
LaRivers, Ira	(5/10-6/30)	170.00
Lund, Lauritz	(5/10-6/30)	170.00
McKenzie, William E.	(5/27-6/1)	16.66
Miller, Loretta R.	(5/10-6/ 30)	283.32
Moore, Benjamin O.	(5/20-6/30)	136.66
Murphey, Edith V. A.	(5/15-6/30)	191.66
Nichols, Norman E.	(5/10-6/30)	170.00
Nuttall, Patricia W.	(5/24-6/30)	148.00
Rives, Benjamin A.	(5/27-6/1)	16.66
Sauer, Alice L.	(5/20-6/30)	170.83
Train, Percy	(6/17-6/30)	84.00
Total Salaries		$ 4,925.72
Freight on Government B/L's		41.48
Express on Government B/L's		110.50
Telegraph		22.67
Postage		3.78
Requisitions		805.02
L/A 722-P (Dr. Raymond N. Bieter)		241.85
L/A 813-P (B. Y. Morrison)		269.84
L/A 1134-P (W. Andrew Archer)		1,680.44
Total Expended as of January 28, 1938		8,101.30
UNOBLIGATED BALANCE as of January 28, 1938		$ 493.70

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Summary of Expenditures

BANKHEAD-JONES ALLOTMENT

F. Y. 1938

Salaries:

Allen, Roy A.	(7/1-9/30)	$ 450.00
Archer, W. Andrew	(7/1-12-15)	1,466.63
Breene, Tim Louise	(7/1-10-15)	437.50
Brooks, Manning M.	(7/1-8/31)	250.00
Franklin, George E.	(7/1-8/31)	200.00
Grinnell, Mary E.	(7/1-6/30)	1,841.59
Goodner, Frank S.	(7/1-8/31)	200.00
Hancock, Newell F.	(7/1-8/15)	150.00
Henning, William G.	(7/1-10-2)	306.66
Henrichs, James R.	(12/16-6/30)	1,300.00
La Rivers, Ira	(7/1-8/15)	150.00
Lund, Lauritz	(7/1-8/31)	200.00
Miller, Loretta R.	(7/1-9/30)	374.98
Moore, Benjamin O.	(7/1-8/31)	200.00
Murphey, Edith V. A.	(7/1-10/9)	412.50
Nichols, Norman E.	(7/1-8/31)	200.00
Nuttall, Patricia W.	(7/1-6/30)	1,440.00
Sampson, Harry	(8/27-10/15)	163.33
Sauer, Alice L.	(7/1-11/15)	381.49
Train, Percy	(7/1-10/31 and 3/1-6/30)	1,440.00
Total Salaries		$11,564.68
Freight & Express on Government B/L's		322.57
Requisitions		94.82
Telegraph		3.57
L/A 477/P		2,375.00
Total Expended or Obligated (1/20/38)		$
Total ALLOTMENT F.Y.1938		$ 15,000.00
Less expended or obligated		14,360.64
UNOBLIGATED BALANCE (1/20/38)		$ 639.36

L/A 477-P
James R. Henrichs

Transportation on Govt. T. R.'s	$ 37.15
Office Rent (Sept. Oct. & Nov.	135.00
Equipment & Supplies	98.54
Labor (Temporary not under Appt.)	186.66
Reimbursement to Collectors for mileage and purchase of plants and supplies	1,402.20
Total expended	$ 1,859.55
Obligated for Office Rent	315.00
Total expended or obligated	$ 2,174.55
UNOBLIGATED BALANCE AS OF 1/20/38	$ 200.45

BUDGET FOR 1938, 39

Washington, D. C. Bibliographer dropped		
Minneapolis, Minn.		$ 8,000.00
1 Principal Horticulturist (Bieter) 1/4 time	$1,400	
5 Under Sci. Aides (Agents) 1/2 time @ $750	3,750	
Equipment, supplies, etc.	2,600	
Travel	250	
	$8,000	
Reno, Nevada.		
1 Supervisor and Collector (Henrichs)	$2,400	
1 Clerk (Nuttall)	1,440	
1 Collector (Train) 7 months	1,440	
Office rent	540	
Travel, L/A, etc.	1,180	
	$7,000	7,000.00
		$ 15,000.00

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year 1938

Research on Plants used by American Indians which may be a basis for new agricultural enterprises - SRF - 2 - 36.

1. Scope of work: Bibliographical studies of printed data and of folk-data collected in the field.

Collection of seeds and plants of species said to be used by American Indians for any purpose, chiefly sanitary or medicinal.

Identification of such materials.

Analysis of such materials and pharmacological studies under modern laboratory methods.

2. Agencies cooperating:

Division of Plant Exploration and Introduction, Bureau of Plant Industry.
University of Minnesota
University of Nevada
Nevada State, WPA Botanical Project
(continuation of 365 - 4 - 3 - 2; new number not yet assigned).

3. Accomplishments:

In Nevada

Recording of 10,000 medical data cards for Washington files.

Collection of 3,619 lbs. of plant material for analysis and pharmaceutical tests.

Collection of (2,500) 12,500 species for botanical study in Washington office.

Completion of botanical survey in field except for two small areas.

Preparation of check list of Nevada plants.

In Minnesota

Studies of plants believed to be useful in raising blood pressure, the products to be used in the same fashion as epinephrine and ephedrine, have brought three related species to the fore. The studies to isolate the active principal have not been completed.

A preparation has been made from another Indian drug apparently effective in reducing the severity of attacks of Staphylococcus aureus.

A preparation of another plant has been secured that approximately doubles the duration of certain types of anesthesia.

A series of tests indicate nine plants productive of substances destructive to the pneumococcus group; three plant substances destructive to organisms in the tuberculosis group.

In Washington

Codification of data and verification and identification of all plant materials.

4. Probable research yet to be undertaken before recommendations for practice can be made.

In Nevada: Continuation of all phases, particularly of collection of folk-data and of crude materials for work in Minnesota.

In Minnesota: Chemical research to identify and isolate the active agency in all plants showing promise as curatives.

Pharmaceutical research on laboratory animals and eventually clinical hospital work with humans.

In Washington: (Contributed by P.E.I.) Preparation of flora and bibliographical codification of folk and other data.

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Here is some of our preliminary findings. We would like to have more of each of these. copy of letter from Bieter 1938

Leptotaenia multifida - has an antiseptic action on the Staphylococcus aureus (common cause of boils)

Iris missouriensis - questionable action on streptococcus (the common cause of bloodpoisoning)

Parosela polydenia - questionable action on pneumococcus (the common cause of pneumonia)

Grindelia squarrosa - also a questionable action on pneumococcus.

Lygodesmia spinosa - also a questionable action on pneumococcus.

Achillea Lanulosa - produces a peculiar rise in blood pressure.

Eriogonum sp "bah- hoe - zie" is very toxic to rabbits. (We have not tired Eriogonum umbellatum as yet.)

Thalictrum: - apparently improves the heart beat. Sonthing like the action of Digitalis

Mirabilis Laevis: - a fluid extract of this drug produces an action on blood pressure in the animal almost identical with ephedrine. Believe it or not but this may be a very important study.

We would like more of these plants also.

Purshia tridentata
Cerocarpus ledifolius
Pentstemon deustus
Ephedra - with special identification if possible.
Pterospera andromeda
Wyethia mollis
Zygodenus elegans
Sarcodes sanguinea
Triglochin (with identification)
Psothyrotes annua
Vagnera stellata
Malacothrix
Gilia congesta = G. pumila (see ident. list T1245.
Streptanthus
Sphenosciodum Capitallatum
Sphaeralcea munroana

Adenoma montana - a possible action on staphylococcus.

7 = sufficient material sent 1938

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1938

RESEARCH ON PLANTS USED BY AMERICAN INDIANS

The botanical work of this unit was directed from Washington, D. C., with Dr. W. A. Archer in the field. The total number of species transmitted was 2,500 which have been turned over to the herbarium of the National Arboretum in Washington, D. C. for identification and report.

With the exception of several small and somewhat remote areas, the entire flora of Nevada has been reasonably well collected with the result that it will be possible shortly to prepare the original draft of a Flora of Nevada which should be useful not only to botanical workers but also to the Forest Service and the Soil Conservation Service for their projects in that territory. The only existing flora of the area is incomplete and out of date.

All the work carried out by Doctor Archer and his collector and by the Washington office was contributed from the regular funds of the Division of Plant Exploration and Introduction.

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Copy

Reno, Nevada
March 2, 1939

Dear Mr. Morrison:

In answer to your letter of the 24th I am enclosing the reports asked for in your letter. You will find one report on the WPA project, one on the Bureau of Plant Industry Project and 2 reports by the chemist. Also enclosed in the Personnel of the WPA Project.

James R. Henrichs

encl.

1938- 2 Tons of a.s.

The Bureau of Plant Industry, Indian Drug Plant Project Report.

The Bureau of Plant Industry, Division of Plant Exploration and Introduction, Indian Drug Plant Project, stationed at Reno, Nevada has as its purpose the investigation of Nevada Indian Medicinal Plants and the collection of the flora of the State of Nevada. During the summer months the Bureau of Plant Industry places collectors in the field to obtain the native flora and Indian Medicinal Plant Information. This information is gathered by the collectors by contacting various Indian settlements, communities and individuals. Their findings are placed in reports and forwarded to the Bureau of Plant Industry office in Washington D. C. To date the southern and northern settlements of Indians in Nevada have been contacted, leaving the Western group to be covered this season. The collectors also gather analysis material for shipping to the University of Minnesota for pharmaceutical work. In the past year the Project shipped approximately 2 tons of plant analysis material and some 2000 specimens were sent to Washington for identification. One set of the plants collected is returned to the University of Nevada for their herbarium.

The Bureau of Plant Industry sponsors also, the Works Progress Administration Botanical project and supervises their work in compiling medicinal plant information. A report of this projects activities accompanies this one.

WORKS PROGRESS ADMINISTRATION PERSONNEL

Bohall, Leo	Plant mounting, used in drying and shipping analysis material.
Breene, Tim L.	Library research work, checking references and obtaining articles for abstracting in State, County and University libraries.
Dill, Minna	Typist. Typing cards.
Frost, Wm. E.	Plant mounting, used in drying and shipping analysis material.
Hill, E. Leland	Chemist, extracting aldehyde, from Artemisis tridentata.
Kent, Arthur	Mimeograph operator.
Marley, Mary	Typist, general office secretary.
O'Niell, George	Plant mounting, used in drying and shipping analysis material.
Patch, Chas. W.	Research worker - doing work on native plant collectors and used for various reference projects.
Ralph, Lena	Reference librarian.
Sampson, Harry	Indian medicinal plant informant, maps and collecting analysis material.
Smith, Mable	Research work in Nevada Museum on medicinal and State flora information.
Smith, Marie	Typist.
Stock, Wenzel	Plant mounting, used in drying and shipping analysis material.
Valo, Margaret	Typist.
Vanoni, Carlo	File clerk.

There are also six parttime National Youth Administration students, assigned to this project, who are engaged in typing.

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Works Progress Administration Botanical Project Work Report.

The Works Progress Administration Botanical Project, Work Project #509 sponsored by the Bureau of Plant Industry is primarily concerned in the compilation of information on the medicinal plants of the United States. The work on medicinal plants has been in progress for the past three and a half years and the information which has been obtained has been carded on 3 x 5 and 4 x 6 cards and filed. Two cards are made for each plant that is used in medicine, one copy being placed on file in the Reno office and one being sent to the Bureau of Plant Industry in Washington D. C. The information concerning medicinal plants is obtained mainly from Materia Medica's, Medical Botany's, Pharmaceutical Journals and various other miscellaneous publications. There have been approximately 1500 references covered on this subject and approximately 2000 to 2500 more references to cover. There are approximately 25,000 cards on medicinal plants on file. In addition to this file there is a common name file listing the common names of all the medicinal plants. There are approximately 30,000 common name cards on file. This file also acts as a cross reference file when only the common name is given.

Another phase of work being done by the Works Progress Administration project is a compilation of a check list of plants in Washoe County Nevada. The information concerning plants occuring in this county is placed on 3 x 5 cards and filed. The information taken for this list is, the name of the plant, common name, locality, collector, date collected and herbarium accession number, if given, and any information concerning the use of the plant. There are approximately 10,000 cards for this re-

ference list. Three herbaria and 200 publications have been covered to obtain this information. When this list is typed up it is to be forwarded to Washington D. C. for the checking of the synonymy of the plant names. The list then will be returned for re-typing and will then be turned over to the University of Nevada Botany Department to make a key to the genera and species of the plants listed. When this is completed it is planned to mimeograph the publication and make it available for use as a text on the Flora on Washoe County. In the publication, will be included, plant sketches which have been drawn by an artist formerly conected with our project.

In searching for the plants of Washoe County, many references have been checked which contain no information on the plants of Washoe County, but do contain information on plants found in the state of Nevada. These titles are kept for future reference. We are also endeavoring to obtain the biography's of all the plant collectors, from the earliest to the latest individuals who have collected plants in this State.

Another publication which has been completed and is awaiting binding is a check list of Tidestrom's Flora of Utah and Nevada. This check list has been typed by the Botanical project and checked by the Bureau of Plant Industry. It has been mimeographed and bound by the Botanical Project. Fifty-four copies have been made of this one hundred and twenty three page check list.

During the summer months when the Bureau of Plant Industry collectors are in the field, a small staff of Botanical Project workers ass-

ist in the collecting, drying and shipping of the plant analysis material which is obtained for the Bureau of Plant Industry Pharmaceutical investigations.

During the winter months the Botanical Project staff assist in the mounting of the Nevada set of the Bureau of Plant Industry collection of Nevada flora for the University of Nevada. To enable the work to be completed the project has purchased the mounting paper for this particular work.

A chemist is employed on the project, working toward the isolation of the aldehyde in Artemesia tridentata. The chemist's report accompanies this one as also the report on his findings on researching into the question of the alkaloid content of Ephedra nevadensis.

In addition to the work set forth in the above report this project acts in an advisory capacity for the Works Progress Administration problems pertaining to matters concerning plants and planting in general.

The staff at the present time consists of four people doing plant mounting: three labratory workers, for reference work: four typist: one file clerk: a chemist and two research workers.

Artemisia Tridentata

There are more than thirty varieties of plants classed as Artemisia scattered over the plains and mountains of the United States, which are collectively called sagebrush.

The most widely distributed of these shrubs is the one often designated as black sage, or Artemisia tridentata. The leaves of this plant yield an oil, the physicial constants of which have been determined. It has been found, by Adams and Oakberg, of the University of Nevada, that this oil is composed of several fractions with different boiling points and other properties. Adams and Oakberg found that the low boiling fraction had a constant boiling point of 61°C. at 650mm. pressure, and gave the characteristic aldehyde test with Schiff's reagent and readily produced a mirror with ammoniacal silver solution. They named this new aldehyde "Artemisal".

The purpose of the present investigation is to obtain enough of this low boiling oil to enable one to carry on the work from the point where the above left off. In this work an effort will be made to determine the molecular weight, to find some method of stabilizing the aldehyde, and also to have the medicinal value determined.

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Ephedra Nevadensis

Purpose:

To determine, if any, the amount of ephedrine in ephedra.

Procedure:

A comprehensive study of the literature was made, by consulting the Chemical Abstracts and other references, in order to determine the amount of work done by other workers. In this study, methods of determination that have been developed by these workers were tried out on known samples. After all available methods had been tried, the three that seemed to be the most suitable were chosen. They were, (1) The official Ephedra Assay of the "A.O.A.C." (2) The method used by the U.S.D.A. Bureau of Plant Industry, and (3) A combination of several methods in which the final identification is made by means of Microchemical Tests for Alkaloids.

Forty four samples of ephedra were received and analysed by the above methods.

Results:

No ephedrine was found in any of the samples received.

Conclusions:

The results of this investigation agree with those of Terry, Journal of the American Pharmaceutical Association Vol. XVI. No. 4, April, 1927, in which it is stated that he found no alkaloid present in E. californica and nevadensis.

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INDIANS RELATED TO AZTECS SAYS STUDENT

TEHACHAPI, Calif. (AP) — Studies by a Yale university graduate student have disclosed that the Piute Indians of Tehachapi are related to the Aztecs.

Maurice L. Zigmond of the Yale university department of anthropology, who has been studying language and culture of the Tehachapi Piutes for the last four years, declares their language is related to that of tribes residing through Nevada and Utah.

The Tehachapi Piutes, called "kawaiisu" by anthropologists, are also related linguistically to Texas tribes, he said.

"Contrary to popular opinion, the Piutes were never barbarians," Zigmond said. "Throughout their known history they have been civilized—in fact, more highly civilized in their own environment than present-day Americans.

Each Piute knew how to secure his own food, he explained, and how to maintain life under conditions impossible for the white man. Each knew how to build effective shelters of logs and thatch. They were exceptional basket-makers and were artists who painted brightly colored landscapes on stone slabs.

"With the coming of the white man, the culture of these Indians was destroyed," Zigmond said. "Tribal life disintegrated almost entirely and the white man's diseases decimated their ranks.

"Today the living aspect of their culture is the spoken language, which has been transmitted unaltered from mother to child in spite of adverse factors."

Zigmond's specialty is enthonobotany, in which he is particularly studying the uses to which the Piutes put the various plants of their environment. These plants were used for food, medicine and manufacture of various useful or artistic articles. His findings will be incorporated in his thesis toward a doctor of philosophy degree.