With the Author's sincere Regards.

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A CATALOGUE OF PLANTS COLLECTED IN THE SALTON SINK

By

S. B. PARISH

PRINTED IN ADVANCE FROM "THE SALTON SEA: A STUDY OF THE GEOGRAPHY, GEOLOGY, FLORISTICS, AND ECOLOGY OF A DESERT BASIN." PUBL. 193. CARNEGIE INSTITUTION OF WASHINGTON, 1913.

WASHINGTON, D. C.
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CATALOGUE OF PLANTS COLLECTED IN THE SALTON SINK.

By S. B. Parish.

This catalogue is founded on collections made by Dr. D. T. MacDougal and by the author. A few additional references incorporate the short list of plants published by J. B. Davy in Bulletin 140, Agricultural Experiment Station, University of California, page 9. The numbers inclosed in parentheses are of the Parish collections; those numbered lower than 8200 were made between June 27 and July 4, 1912, those between that number and 8400 between October 8 and 24 of the same year, and those above 8400 in February, 1913. Stations without numbers are given from the author's field notes.

The MacDougal specimens are at the Desert Botanical Laboratory at Tucson. A set of the Parish specimens is in the author's herbarium, and nearly complete sets have been deposited in the herbaria of the Desert Botanical Laboratory, of the University of California, and in the Gray Herbarium of Harvard University.

Synonyms are printed in italic, introduced plants in small capitals.

LYCOPERDACEÆ.

Podaxon farlowii Massee.
In the alluvial soils of the Sink, in places that have been wet and are drying off. Mounds at the old beach east of Holtville (8128), Rockwood (8211), Meloland, El Centro, Coachilla (*L. A. Greata*).
This and the following species were determined by Mr. Lloyd.

Phellorina macrosperma Lloyd.
A single specimen in alluvium which had been recently flooded, on the mesa at Mecca (8212).
An African genus, of which, according to Mr. Lloyd, there have been but three previous collections in the United States.

ÆCIDACEÆ.

Negredo scirpi (Cast.) Arth. *Uromyces scirpi* Burr.
On the leaves and stems of *Scirpus paludosus*, New River near Rockwood (8217).
Abundant at this station, but not seen elsewhere. It has been collected on *Scirpus pacificus* at several stations in California. Determined by Dr. Arthur.

CHROOCOCCACEAE.

Chroococcus sp.
On a dripping iron water-pipe, Thermal (8201).

OSCILLATORIACEAE.

Oscillatoria formosa Bory.
On mud, Alamo river at Holtville (8204).

Phormidium luridum (Kuetz.) Gomont.
With the last species (8204 A).

Phormidium tenue (Mengh.) Gomont.
On a dripping iron water-pipe, Thermal (8201 A).

Schizothrix lardacea (Ces.) Gomont.
With the last species (8201 B).

NOSTOCACEAE.

Nostoc coeruleum Lyngbye.
In the small stream running from the railway waterworks at Mecca (8460).

BACILLARIDACEAE.

Amphora sp.
In the water of Salton Sea (MacDougal, 1908).

Gomphronema sp.
With the last species.

VOLVOCACEAE.

Chlamydomonas sp.
Developed in water taken from Salton Sea at Travertine Terraces, Feb. 8, 1913, by Dr. MacDougal, and used in cultural experiments at Tucson.

COELASTRACEAE.

Ankistrodesmus falcatus (Corda.) Ralfs.
With the last species.
The four last preceding species were determined by Dr. T. E. Hazen.

ULOTHRICACEAE.

Conferva utriculosa Kuetz. (?)
In a small stream from an artesian well at Mecca (8402).

OEDOGONIACEAE.

Œdogonium sp.
In the water of Salton Sea (MacDougal, 1908). Determined by Dr. Hazen.

CLADOPHORACEAE.

Cladophora crispata (Roth.) Kuetz.
In small streams from artesian wells at Mecca (8402, 8405, 8406, 8407). Determined by Mr. F. S. Collins.

Rhizoclonium hieroglyphicum Kuetz. var. **macromeres** Wittrock.
In the water of Salton Sea (MacDougal, 1908). Determined by Dr. Hazen. A variety of the same species was collected in a small pool at Thermal (8202).

ZYGNEMACEAE.

Spirogyra sp.
Sterile. In a ditch near Seeley (8203). Sterile Spirogyras were also collected in the small streams running from artesian wells at Mecca (8403A, 8404).

Mougeotia sp.
Sterile. In a ditch near Seeley (8203 A).
The above Algae, except as noted, were determined by Dr. W. A. Setchell.

DERMATOCARPACEÆ.

Dermatocarpon rufescens (Asch.) A. Zahlb.
A very few plants, in the shade of a rock, at base of the mountains southwest of Travertine Rock (8472).
Determined by Dr. H. E. Hasse.
A few sterile thalli of a second lichen were growing with the above species (8472A), and in the corrugations of Travertine Rock (8210).

MUSCI.

A small patch of a sterile moss was growing with the Dermatocarpon above mentioned (8411). Another sterile moss, apparently a different species, was found on the wet mud banks of the small stream flowing from the railway waterworks at Mecca (8482).

NAJADACEÆ.

Ruppia maritima Linn.
Filling the shallow current of Salt Creek near Seeley (8223).

GRAMINEÆ.

HOLCUS HALEPENSIS Linn. *Sorghum halepense* Pers.
A single clump near El Centro.

Pleuraphis rigida Thurb.
Rabbit Bay (MacDougal 219).
A common grass at higher altitudes in the desert; here a migrant.

PASPALUM DISTICHUM Linn.
Margins of canals, ditches, and reservoirs. Imperial Valley, Meloland (8094), Rockwood.
A common weed in cismontane California, but probably entering here from the delta.

ECHINOCHLOA COLONA Link.
A very common weed in irrigated land throughout the Sink. Holtville (8085, 8241), Mecca (8101), River bottom at Rockwell, Imperial, Brawley, El Centro, Thermal.
Very rare in cismontane California, and probably entering here from the delta.

Echinochloa zelayensis Schult.
Very common along the rivers and the irrigation canals and ditches in Imperial Valley. Holtville (8085), New River near Rockwood (8240), El Centro, Meloland, Brawley.
The type was collected at Zelaya, in the State of Queretaro, Mexico. It is the common *Echinochloa* of Mexico, extending into western Texas and Arizona, and now first reported from California. It occurs in the Colorado River bottoms near Fort Yuma, and is here an entrant from the delta. Readily recognized in the field by its narrow panicle with erect branches. Identified by Mrs. Agnes Chase.

CENCHRUS CAROLINIANUS Walt.
Depauperate annual, 23 cm. high. Plains northeast of Mecca (8440).

GRAMINEÆ.—Continued.

SETARIA GLAUCA Beauv.
Widely introduced, but nowhere abundant, in the cultivated parts of the Sink. Streets of Brawley (8236), Mecca (8244), Thermal.

Aristida bromoides H. B. K.
Occasional in dry soil. Indio (8237), near Dixieland (8239), base of the range of mountains west of Travertine Terrace (8434).
A widespread but not abundant grass of the Colorado desert.

Aristida californica Thurb (?)
In sand-pockets, Travertine Rock (8238).
The spikelets had fallen, so that the identification is not positive. In California the species is confined to the eastern borders of the Colorado desert, thence eastward to Arizona and New Mexico.

Sporobolus strictus Merr.
Near Agua Dulce, at the northwestern end of Salton Sink (8242).
An Arizona species, now first detected in California.
This and the two preceding species were determined by Mrs. Agnes Chase.

Sporobolus airoides Torr.
A few large tussocks at Indio, and a single one between Calexico and Signal Mountain.
A species of wide distribution on the Pacific Slope, extending into Mexico.

POLYPOGON MONSPELLIENSIS Desf.
Imperial Junction Beach (MacDougal 101A). Mecca.
Not seen in Imperial Valley.
A common weed of cultivation in California.

CYNODON DACTYLON Pers. Bermuda grass.
Very common in irrigated lands, and about houses throughout the Sink. Indio, Thermal, Mecca, Rockwood, Brawley, Imperial, El Centro, Calexico.
Common throughout California except in the mountains and deserts.

CHLORIS ELEGANS H. B. K.
Common in cultivated lands and about streets throughout the Sink, always apparently introduced. Thermal (8247), Mecca. A reduced form 2 to 3 cm. high, plains northwest of Mecca (8441). Abundant at the Government Date Garden, Mecca (8100). Brawley, El Centro, Holtville.
Native of Texas and Mexico and an occasional waif in cismontane southern California.

Bouteloua arenosa Vasey.
Desert between Brawley and Salton Sea (8234) Bluffs of New River near Rockwood (8235), Brawley and El Centro, about streets, Rabbit Bay (MacDougal 221).
A species of northern Mexico, known in California only from the eastern borders of the Colorado desert.

Bouteloua barbata Lag. *B. polystachya* Benth.
In dry soil near Mecca (8102), Town Park, Holtville (8125).
In California known only from eastern part of the Colorado desert, passing east and south to Mexico.

Leptochloa imbricata Thurb.
Alamo and New River bottoms, and now become an abundant weed in irrigated lands and about towns throughout the Sink. Indio, Thermal, Mecca (8119), Holtville (8243), Brawley, Imperial, New River Calexico, Imperial Junction beach, (MacDougal 118).
Known in Imperial Valley as " water grass " because believed to be carried into the fields by irrigating water. Probably an entrant from the delta, as it occurs along the lower Colorado river. A few collections have been made in cismontane southern California, probably of waifs.

GRAMINEÆ.—Continued.

ERAGROSTIS MEGASTACHYS Link.
A depauperate form 1 to 2 cm. high, plains northwest of Mecca (8442).

Triodia pulchellus Hitchc.
In sand along the base of the travertine range, southwest of Travertine Rock (8434).
A common species of the lower Colorado desert.

Distichlis spicata Greene. Salt grass.
Common in moderately damp saline soil throughout the western part of the Sink. Thermal, Mecca, Mortmere, Dos Palmas, Agua Dulce.
Common throughout United States and Mexico.

Phragmites communis Linn.
In alkaline soil, Salton slough, near the Southern Pacific Railway station of that name (8068). Abundant at Travertine Terrace.

CYPERACEÆ.

Eleocharis capitata R. Br.
Dos Palmas, *Hall* 5984, May 4, 1905.
An infertile *Eleocharis* was seen at Travertine Terrace.

Cyperus erythrorhizos Muhl.
Wet bottoms of Alamo and New Rivers and along canals and ditches in Imperial Valley. New River near Rockwood (8234), Canal at Holtville (8237), New River at Calexico (8379, 8380), Ditches at Imperial and El Centro.
A widely distributed species eastward and collected at several places in central California, but not otherwise known from the State. It grows along the lower Colorado River and is probably an entrant from the delta.

CYPERUS ESCULENTUS Linn.
Abundant in the Government Date Garden near Mecca.

Cyperus speciosus Vahl. (?)
An immature specimen, only 3 cm. high, which probably belongs here, was collected on Obsidian Island by MacDougal (304). The species is common in the Colorado River bottoms at Fort Yuma.

Scirpus americanus Pers.
In saline seepage, Travertine Terrace (8427).

Scirpus olneyi Gray.
Common in springs at northwestern end of the Sink. Figtree John (8378). Dos Palmas, Mortmere, Travertine Point, MacDougal (409), Parish (8426).

Scirpus paludosus A. Nelson.
Common in the margins of New and Alamo Rivers and of the irrigation canals and ditches of Imperial Valley. New River at Rockwood (8249), Seeley and Calexico, Alamo River at Holtville, Irrigation ditches at Imperial (8376, 8377), Meloland (8093), and El Centro, Mecca, beaches (MacDougal 404).
The type was collected in Wyoming, and the species has been known heretofore only from that State and a few places in Utah. It grows along the Colorado River at Fort Yuma and is here an entrant from the delta. Identified by Dr. Nelson.

TYPHACEÆ.

Typha angustifolia. Linn.
Common in the margins of water and in marshy places throughout the Sink, Indio, Thermal, Mecca, Rockwood, El Centro, Calexico.

JUNCACEÆ.

Juncus cooperi Engelm.
Dos Palmas (8244). Figtree John Spring, Travertine Terrace (8428).
A rare endemic species of the California deserts.

JUNCACEÆ.—Continued.

Juncus balticus Willd.
Ditch along railroad south of Mecca (8455).

JUNCUS TORREYI Coville.
Three plants in drain of railway water-tank at Mecca.
An occasional species in cismontane southern California, but here evidently introduced.

LILIACEÆ.

Hesperocallis undulatus Wats.
A few plants on plain northeast of Mecca. Abundant further east in both deserts, extending thence into Arizona. The present station is probably the western limit.

PALMACEÆ.

Washingtonia filifera Wendl.
A group of a few trees in the alkaline flats near Mecca, two trees in Dos Palmas Spring.
The species is endemic in Coahuilla Basin, and there are extensive groves, not far from the margin of the Sink, north of Indio. The two trees at Dos Palmas have leaves whose petioles are unarmed throughout, the first mature trees thus unarmed which have been seen, except in cultivation. They belong, therefore, to the variety *microsperma* Beccari. But the varieties of this species are founded on insufficient characters and are merely forms.

SAURURACEÆ.

Anemopsis californica Hook.
Moist saline soil bordering Dos Palmas Spring. Frequent in similar soil, notably in southern California and as far north as Sacramento River.

SALICACEÆ.

Salix nigra Marsh.
River banks, springs, and damp soil throughout the Sink. Mecca, Dos Palmas, New River near Rockwood, Holtville (8079), Rabbit Bay (MacDougal 213).
Possibly the variety *vallicola* Dudley (*S. vallicola* Britton), but our material is insufficient for certain determination. *S. gooddingii* Ball is apparently the same as Dudley's variety, but I have seen no authentic specimens. While the reference of these desert trees to the species *S. nigra* is not entirely satisfactory it may suffice for the present.

Salix exigua Nutt. *S. longifolia* Muhl. in part.
Abundant in river bottoms and along irrigation canals in Imperial valley. New River near Rockwood (8383) and Calexico, Alamo River at Holtville and east of Calexico, Irrigation canals at Meloland (8092) and Brawley.
Throughout the southern California deserts, and reaching the cismontane borders.

Populus macdougalii Rose.
In the bottom lands of the Alamo and New Rivers, as an entrant from the delta. Also, frequent in cultivation in all parts of the Sink. Mecca (8130, 8385, 8471), and MacDougal (128), Indio (8470). According to Indian testimony the Delta cottonwood was unknown in the upper end of the Sink before the construction of the Southern Pacific Railroad, when trees were brought from Yuma and planted at several of the stations. From these trees were derived those now growing about the Indian settlements. There are no indigenous trees in this part of the Sink. The Delta cottonwood occurs along the Colorado River in the neighborhood of Yuma and is especially abundant bordering the dif-

SALICACEÆ.—Continued.

Populus macdougalii Rose.—Continued.
fluents of the delta. It differs from *P. fremontii*, which is frequent in central and southern California, in its smaller size, the lighter color of the mature trunks, the whitish gray of the bark of the limbs, and its smaller leaves, which are truncate, instead of cordate, at base, and are twice as broad (10 to 12 cm.) as high, and short-pointed at the apex.

LORANTHACEÆ.

Phoradendron californicum Nutt.
Common on *Prosopis glandulosa*, *P. pubescens*, and somewhat less so on *Olneya tesota*, *Cercidium torreyanum*, and *Parosela spinosa*, throughout the ranges of these trees in the Sink.

POLYGONACEÆ.

Rumex berlandieri Meisner.
Along rivers and in moist soil in Imperial Valley. Holtville (8078), Meloland, El Centro. Also on Obsidian Island (MacDougal 30, 109A) and Imperial Junction Beach, (MacDougal 32).
Eastward through Arizona and New Mexico to Mexico. An entrant from the delta. Not previously reported from California.

POLYGONUM LAPATHIFOLIUM Linn.
In a few places along an irrigation canal, half way between Calexico and Signal Mountain (8078). Similarly at Meloland.
Frequent in cultivated grounds in central and southern California.

Eriogonum trichopes Torr.
In dry detrital soil near Mecca (8291).
A common species of the Californian deserts.

Eriogonum thomasii Torr.
Obsidian Island, (MacDougal 27, 114).
A common species of the Colorado Desert.

Eriogonum plumatella Dur. & Hilg.
Caleb (8290), Durmid (8060), Obsidian Island (MacDougal 205).
A widely distributed species of the Californian deserts.

Eriogonum deserticola Wats.
Big Island, (MacDougal 416).
An endemic species of the Colorado Desert.

Chorizanthe rigida T. & G.
In dry detrital soil at Durmid (8061).
Common in similar places throughout the Colorado desert.

CHENOPODIACEÆ.

CHENOPODIUM MURALE Linn.
An occasional weed about houses, Mecca, Brawley.
Common in many parts of California.

ATRIPLEX SEMIBACCATA. R. Br.
Abundant along the railway near Imperial (8252).

Atriplex fasciculata Wats.
Streets of El Centro (8090), Imperial Junction Beach, and Obsidian Island (MacDougal).
The type was collected near Daggett in the Mojave Desert.

Atriplex lentiformis Wats.
In wet saline soil throughout the Sink. Indio, Thermal (8266), Alkaline flats, Mecca (8116, 8264, and MacDougal), Dos Palmas (8265), Caleb. Along ditches, Imperial. Bottom lands of New River at Brawley and Calexico, Mouth of Salton Slough. Travertine Wash (MacDougal 9), Obsidian Island MacDougal 411). Imperial Junction Beach (MacDougal 106).
A species of the California deserts extending into Arizona; also collected in lower San Joaquin Valley.

CHENOPODIACEÆ.—Continued.

Atriplex polycarpa Wats.
Common in damp alkaline soil throughout the Sink. Indio, Thermal. Alkaline flats, Mecca (8262), Beach at Mecca (MacDougal 405), Travertine Terrace (MacDougal 821, 222A), Obsidian Island (MacDougal 45), Imperial Junction, El Centro, Banks of New River at Calexico (8261).
A species of the Californian deserts and adjacent Arizona.

Atriplex linearis Wats.
In dry detrital soil, Durmid (8073), Imperial Junction beach (MacDougal 108). In alluvial soil, Holtville (8258). Between Brawley and Salton Sea (8253).
A Sonoran species, reaching Arizona, and now first reported from California.

Atriplex hymenelytra Wats. Desert Holly.
In dry detrital soil in the northeastern part of the Sink, where it is abundant, and occasionally elsewhere. Mecca, Caleb, Salton, Durmid, Bertram, Obsidian Island (MacDougal 33, 48, 414).
A species of the Californian deserts extending into Arizona.

Atriplex canescens James.
One of the most abundant and widespread plants of the Sink, in both moderately damp and arid soils. The wings of the fruit vary greatly in size and in the development of the teeth.
Wings deeply toothed: Bluffs of New River at Calexico (8074), Holtville (8077), between Brawley and Salton Sea (8254), Caleb (8255, 8256), El Centro, Durmid, Obsidian Island (MacDougal 41, 47, 118), Imperial Junction Beach (MacDougal 52).
Wings entire, or nearly so: Holtville (8257), Imperial (8259), Rockwood.
A species of extended range in the arid west, throughout the deserts, and occasionally in other parts of southern California.

Atriplex saltonensis Parish.
Mesa at Mecca (8452).
Known only from the type collection.

Spirostachys occidentalis Wats. *Allenrolfia occidentalis* Kuntze.
In alkaline soil throughout the Sink. Alkaline flats at Indio, Thermal and Mecca (8099), mouth of Salton Slough (8071), Caleb, Mortmere, Figtree John, Travertine Terrace in fruit (8437), Rockwood, Borders of Salton Sea near Westmoreland, New River at Calexico.
A species widely distributed in the western deserts.

Suaeda torreyana Wats. *Dondia moquinii* A. Nelson.
In alkaline soil throughout the Sink. Alkaline flats at Indio and Thermal, Mecca, (MacDougal,) Rockwood, Imperial, El Centro.
A species widely distributed in the western deserts and frequent in cismontane southern California.

AMARANTHACEÆ.

Amaranthus palmeri Wats.
River bottoms in Imperial Valley and now an abundant weed in irrigated lands. Holtville (8269), Imperial, Brawley, New River at Rockwood and Calexico, East Bay of Obsidian Island (MacDougal 412).
A species of the southern Colorado desert extending into Arizona. Here an entrant from the delta.
A. chlorostachys Willd. is reported in Davy's list. There is no specimen from the Basin in the herbarium of the University of California, and Davy's record was doubtless founded on an erroneous determination of a specimen of *A. palmeri*.

AMARANTHACEÆ.—Continued.

AMARANTHUS CALIFORNICUS Wats.
Common in Imperial Valley in cultivated and waste grounds, also abundant in bottom lands of Colorado River at Fort Yuma. Probably introduced into Imperial Valley through irrigation canals.

Cladothrix oblongifolia Wats.
Frequent in dry detrital soil at the northeastern end of the Sink, and occasional elsewhere. Durmid (8067), Caleb (8298).
Mountains and mesas of the eastern part of the Colorado desert and adjacent Arizona.

NYCTAGINACEÆ.

Abronia aurita Abrams. *A. villosa* Wats. in part.
In light soil throughout the Sink. Dixieland, Westmoreland, Calexico (8294), Mecca (8474), Sands near Travertine Rock.
Frequent in the Colorado Desert.

AIZOACEÆ.

Sesuvium sessile Pers.
Frequent in wet alkaline soil throughout the Sink. Mecca, Mouth of Salton Slough, Borders of Salton Sea northwest of Brawley, New River bottoms near Rockwood and Calexico, Imperial Junction (MacDougal 110), Carrizo Sands (MacDougal).
In California this species has been collected in San Joaquin Valley and in both the Mojave and the Colorado deserts.

CARYOPHYLLACEÆ.

AGROSTEMA GITHAGO Linn.
A single plant noted along the railway in Imperial Valley. As yet known in California only as an occasional waif.

PORTULACACEÆ.

PORTULACA OLERACEA Linn.
A very rare weed about houses. Mecca, Brawley.
This cosmopolitan weed is abundant in the older-settled parts of California.

Calandrinia ambigua Howell. *Claytonia ambigua* Wats.
Indio (March 1881, April 1884, Parish).
An endemic species of the Colorado Desert, seldom collected.

CRUCIFERÆ.

Lepidium lasiocarpum Nutt.
In alluvial soil, coming up freely in places where water has dried off. Abundant on mesa land which had been flooded by leakage from a canal, Rockwood (8296), Imperial Junction Beach (MacDougal 51). In a small basin in the mounds east of Holtville. Near Westmoreland. Alamo River, according to Davy's list.
A species of the western deserts.

Dithyraea californica Harv.
Plains near Mecca (8451, 8457, 8478). Sands near Travertine Terraces.
Common northwest to San Gorgonio Pass.

Streptanthus longirostris Wats. *Guillenia longirostris* Greene.
Mesa northeast of Mecca (8444, 8473).
A common species of the Colorado Desert.

BRASSICA NIGRA Koch.
Sparingly along a roadside near Imperial.
A common weed in the cultivated parts of California.

CAPPARADACEÆ.

Wislizenia refracta Engelm.
Borders of Salton Sea (MacDougal).
From Texas to the desert borders of California, and in the San Joaquin Valley.

RESEDACEÆ.

Oligomeris glaucescens Camb.
Borders of Salton Sea (MacDougal 112, 114), Obsidian Island (MacDougal 41), dry desert between Brawley and Salton Sea, near Mecca (8443).
In California in the deserts along the southern borders of the State, and occasionally on the lower coast, without doubt indigenous.

LEGUMINOSÆ.

Prosopis glandulosa Torr. Mesquite.
A tree of wide distribution in the Sink, occurring wherever its roots are able to reach moist soil. Abundant in the alkaline flats from Indio to Mecca. River bottoms in Imperial Valley, Dunes at Indio, and mounds east of Holtville and Calexico, Dos Palmas, Westmoreland, Alamo River near the Mexican boundary (8270), Obsidian Island (MacDougal 1308), Rabbit Bay (MacDougal 210).
A common species of the Californian deserts and occasional in cismontane southern California.

Prosopis pubescens Benth. *Strombocarpus pubescens* Gray. Screwbean.
Range of the preceding species except in the dunes. Thermal, Mecca, Caleb, Dos Palmas, Durmid in dry channels of the mesa, Calexico, Rabbit Bay (MacDougal 210), Obsidian Island (MacDougal 30, 117).
A common species of the Californian deserts, thence southward into adjacent Mexico. A single group grows on the dry banks of the Santa Ana River between San Bernardino and Redlands in cismontane southern California. Smaller than the preceding species and apparently able to endure greater aridity.

Cercidium torreyanum Sarg. *Parkinsonia torreyana* Wats. Palo Verde.
In detrital soil at northern end of Sink, most frequent along washes. Between Mecca and Red Cañon, Caleb, Travertine Rock.
Colorado Desert and adjacent Arizona and Mexico.

Olneya tesota Gray.
In detrital soil at northeastern end of the Sink, along or near washes; not seen on the western side. Near Mecca (8123), Mortmere, Dos Palmas.
Southern part of the Colorado Desert and adjacent Arizona and Mexico.

Parosela mollis Heller. *Dalea mollis* Benth.
Infrequent in arid soil. Mecca (8312, 8450), Dixieland (8311).
A common species of the California deserts, but apparently infrequent in the Sink.

Parosela emoryi Heller. *Dalea emoryi* Gray.
Widely distributed in arid soils throughout the Sink and notably abundant in the washes and detrital slopes of its northeastern border. Near Mecca. Mounds east of Holtville (8080), Caleb, Figtree John, Westmoreland, Obsidian Island (MacDougal 16).
A frequent species of the Colorado Desert.

Parosela schottii Heller. *Dalea schottii* Gray.
Abundant along the washes and on the detrital slopes of the northeastern part of the Sink towards its upper border. Between Mecca and Red Cañon, near Dos Palmas.

Parosela spinosa Heller. *Dalea spinosa* Gray.
Abundant along washes, in the northeastern and northwestern borders of the Sink, and increasingly so towards its upper margin. Mecca, Caleb, Dos Palmas, Figtree John.
A common species, bordering dry washes and in cañons, in the Colorado Desert, extending into Arizona.
The first leaves of *P. spinosa* seedlings, 5 to 6 in number, are oblong, 2.5 to 2.75×.5 to .75 cm.,

LEGUMINOSÆ.—Continued.

Parosela spinosa Heller. *Dalea spinosa* Gray.—Continued. glandular serrate and sparsely guttaté-glandular. At the height of about 3 cm. they are succeeded by spines 2 to 2.75 cm. long, sparingly set with pointed gands. The whole plantlet is densely appressed-pubescent.

SESBANIA MACROCARPA Muhl.
Along an irrigation canal near Imperial (8306) and said to occasionally occur along other canals.
At the above station it was spreading into the adjacent irrigated alfalfa field. It was here a weed of cultivation, brought in by the canals from the Colorado River, in whose delta it is abundant and indigenous. Although not seen along the Alamo or New Rivers, it is not improbable that it may also be a natural entrant. It is a weed in the Government Date Garden near Mecca, where it was sown to test its value as a cover crop, its roots being the host of nitrifying bacteria.

MELILOTUS INDICA All.
Adventive at Imperial.
A common weed in cold, damp lands in many parts of California.

Astragalus aridus Gray.
Coachella (*L. A. Greata*, Herb. Parish). Sandhills near Mecca (8467).
An endemic annual of the Basin.

Astragalus limatus Sheldon.
Frequent in arid soil throughout the Sink. Near Mecca, Caleb, Durmid. Between Brawley and Salton Sea (8271). El Centro, Meloland, Holtville (8081), Seeley, Westmoreland, Calexico.
It attains a much more luxuriant development when growing in moderately moist soil than in dry. Travertine Point (MacDougal 408, Parish 8429).

ZYGOPHYLLACEÆ.

Larrea tridentata Coville. *Covillea tridentata* Vail. Creosote bush.
Frequent in arid soil throughout the Sink, but scattered and not dominant. Caleb, Figtree John. Mounds east of Holtville and Calexico. Between Calexico and Signal Mountain. Near Westmoreland it occurs in abundance over small isolated tracts.

TRIBULUS TERRESTRIS Linn.
Common along railway tracks throughout their entire length, and extending into the streets of the towns. Indio, Mecca, Durmid, Imperial Junction, Brawley, Imperial, El Centro, Holtville, Calexico.
This weed has entered California in recent years along the Southern Pacific Railway, and is now common about most railway stations in southern California and spreading in streets of towns.

GERANACEÆ.

Erodium texanum Gray.
Plains northwest of Mecca (8449).
A common species of both deserts, and eastward to Texas.

ERODIUM CICUTARIUM L'Her.
In irrigated fields, Mecca (8469).
A common naturalized species throughout California, except the deserts and higher mountains.

EUPHORBIACEÆ.

Croton californica Muell.
In detrital soil towards the rim of the Sink near Mecca.
Abundant northward in the Basin and in many parts of southern California.

EUPHORBIACEÆ.—Continued.

Chamæsyce cinerascens Small. *Euphorbia cinerascens* Engelm.
Sand wash near Figtree John Spring (8306). Not before reported from California.

Chamæsyce parishii Millsp. ined. *Euphorbia parishii* Greene.
Sand wash between Mecca and Red Cañon.
The type of this little-known species was collected at Daggett, in the Mojave Desert (8113).

Chamæsyce polycarpa var. **hirtella.** Millsp. ined. *Euphorbia polycarpa* Benth. var. *hirtella* Boiss.
Dos Palmas (8304), Sand wash near Dixieland (8308), Figtree John (8245). Shores of Rabbit Bay (MacDougal). Sands between Travertine Rock and the adjacent mountains, abundant.
Abundant northward in the Colorado Desert.

Chamæsyce saltonensis Millsp. ined. n. sp.
Old beach-line near Calexico (8302), streets of Brawley (8305).

Chamæsyce setiloba Millsp. ined. *Euphorbia setiloba* Engelm.
In sandy or loose soil, in which it is often partly buried. Mounds at the old beach-line east of Holtville (8087). Sand wash in the desert southwest of Brawley (8301).

Chamæsyce serpens Millsp. ined. *Euphorbia serpens* H. B. K.
In hard detrital soil at Durmid (8066).
Not before reported from California. The above species of *Chamæsyce* were determined by Dr. Millspaugh.

MALVACEÆ.

Malvastrum exile Gray.
Plains northwest of Mecca (8447).
Common northward in the Colorado Desert and in the Mojave Desert.

MALVA PARVIFLORA Linn.
Adventive in several of the towns of the Sink, but nowhere abundant. Mecca, Brawley, El Centro.
An abundant weed in California.

Sida hederacea Torr.
Frequent in extensive societies, in moderately dry subalkaline soil, in the river bottoms of Imperial Valley. New River at Rockwood (8316) and Calexico. Also a troublesome weed in irrigated fields. Rockwood, El Centro, Meloland, Seeley, Westmoreland.
An entrant from the delta, where it is common.

Sphæralcea orcuttii Vasey & Rose.
Frequent in the arid alluvial soils of the southern and eastern parts of the Sink. Desert between Brawley and Salton Sea (8317), El Centro, Meloland (8097), Holtville, Dixieland, Westmoreland, Calexico, Durmid.
Suffrutescent; flowering at most seasons of the year. An endemic species of the Basin. This and the following *Sphæralceas* were identified by Dr. Robinson.

Sphæralcea emoryi Gray. (?)
Along railway tracks at Indio (8321).
Corollas lilac rather than brick-red, but otherwise agreeing with the ordinary form of this species, which is common in the Californian deserts.

Sphæralcea fendleri Gray.
Streets at Mecca (8318, 8451).
A species of western Texas, New Mexico, and Arizona. Not heretofore detected in the Colorado Desert, but occasional, in a varietal form, in cismontane southern California.

MALVACEÆ.—Continued.

Sphaeralcea angustifolia Don, var. **cuspidata** Gray.
A number of plants near Indio (8319).
This also is a plant of the same region as the last; not detected heretofore in California.

LOASACEÆ.

Petalonyx thurberi Gray.
Common in detrital soil throughout the Sink. Mecca, (8121), Caleb, Durmid, Figtree John.
A common species of the Colorado Desert.

ONOGRACEÆ.

Œnothera trichocalyx Nutt. *Anogra trichocalyx* Small.
Desert between Brawley and Salton Sea (8326).

Œnothera scapoidea Nutt. var. **aurantiaca** Wats. *Chylisma clavaeformis* Heller.
Obsidian Island (MacDougal 29). Abundant on plains northwest of Mecca (8445), and in sand at Travertine Terraces.
The above *Œnotheras* are common plants of the Colorado Desert.

CACTACEÆ.

Echinocactus cylindraceus Engelm.
A single large specimen in a wash near Figtree John, evidently carried down the wash when small, from the adjacent mountains, where the species is frequent. It does not properly belong to the flora of the Sink.

Opuntia echinocarpa Engelm. (?)
A single plant in a wash near Mecca, without fruit or flower. Like the previous species it was a migrant from the adjacent mountains.

ASCLEPIADACEÆ.

Asclepias subulata Decne.
A few plants in a wash near Agua Dulce at the southwestern end of the Sink.
Frequent in the washes of the mountains which border the Basin, here a migrant.

Philabertia linearis B. & H. var. **heterophylla** Gray. *Philabertella Hartwegii* var. *heterophylla* Vail.
Occasional in dry soil throughout the Sink. Agua Dulce, near Brawley (8327), Holtville (8081), mounds near the Alamo River east of Calexico (8327).
A common species of the desert, abundant in the Colorado River bottoms, and passing westward into cismontane southern California.

CUSCUTACEÆ.

CUSCUTA CALIFORNICA Choisy.
A few plants, parasitic on alfalfa, in the town park at Holtville (8080). Slight infestments on alfalfa, seen elsewhere in Imperial Valley, were probably the same.
A common indigenous species in many parts of California.

POLEMONIACEÆ.

Langloisia schottii Torr. *Gilia schottii* Gray.
A few plants in sandhills northeast of Mecca (8466).
A common species of the Colorado Desert.

HYDROPHYLLACEÆ.

Heliotropium curassavicum Linn.
A subordinate member of halophytic associations throughout the Sink; rarely dominant over limited areas, as on flats near Caleb. Mecca (MacDougal

HYDROPHYLLACEÆ.—Continued.

Heliotropium curassavicum Linn.—Continued.
5, 105), near Salton (8072), Obsidian Island (MacDougal 45), Dos Palmas, Rockwood, Borders of Salton Sea near Westmoreland, El Centro, New River at Calexico.
Widely distributed in California and in most of the warmer parts of North America.

Phacelia crenulata Torr.
A single plant, in the sandhills northeast of Mecca (8464).
Infrequent in the southeastern Colorado Desert and thence to Arizona and New Mexico.

Eriodictyon glutinosum Benth.
A single insulated society, occupying an acre or more near Indio.
This common species of cismontane southern California occurs in a few places on the desert slope, as at Whitewater. The present station is its farthest-known eastern and southern limits.

Nama hispidum Benth.
"Alamo river-bed" according to Davy's list. The specimen (Davy 7965) is in the herbarium of the University of California and the locality noted on the label is Calexico. It has also been collected at Palo Verde on the Colorado River.

BORAGINACEÆ.

Cryptanthe angustifolia Greene.
In a desiccated pool at the old beach east of Holtville (8124).
Common species of the Colorado Desert, extending into Arizona.

Cryptanthe barbigera Greene. (?)
Obsidian Island (MacDougal 25, 26). The specimens are too young for positive determination.

Cryptanthe costata Brandegee.
In sands near Travertine Terraces (8429). Sandhills near Mecca (8465).
An endemic species of the Colorado Desert. Determined by Mrs. Brandegee.

Krynitzkia micrantha Gray. *Eremocarya micrantha* Greene.
Sandhills northeast of Mecca (8464).
A common plant of arid soils in southern California, extending eastward to Arizona.

Coldenia plicata Coville. *C. palmeri* Gray.
A common xerophyte of the Sink, especially in detrital soil, but occasional elsewhere. Mecca, Durmid, Imperial Junction, Figtree John, El Centro, Westmoreland.
A common species of the Colorado Desert.

Pectocarya penicillata A. DC.
Mesa at Mecca (8448).
Common in arid soils in southern California.

LABIATÆ.

MENTHA CITRATA Ehrh.
In the stream from the railway waterworks, Mecca (8462).
Naturalized sparingly in cismontane southern California.

VERBENACEÆ.

Lippia nodiflora Michx.
In the moist soil of river bottoms in Imperial Valley. New River at Rockwood (8330) and Calexico (8332). Obsidian Island (MacDougal 38).
A cosmopolitan tropical species; in California known only along the lower Colorado and as above. An entrant from the delta.

SOLANACEÆ.

SOLANUM ELEAGNIFOLIUM Cav.
About railway station yards and tracks. Durmid, Imperial Junction (8104), Imperial, Meloland.
This weed entered southern California along the Southern Pacific railway, and is now widely distributed throughout its length in southern California, but is not abundant.

Physalis wrightii Gray.
Rare in river bottoms, but very common along canals and in irrigated lands, in Imperial Valley. Brawley, Imperial, El Centro, Meloland (8091), Rockwood (8338).
An entrant from the delta and apparently owing its presence here mainly to the irrigation system. It occurs also in the Colorado river-bottoms at Fort Yuma and is now for the first time reported from California. The type was collected in southwestern Texas.

Physalis crassifolia Benth.
A single plant at the base of the range southwest of Travertine Rock (8435).
A migrant from the desert mountains, where it is a common chasmophyte in both deserts.

Datura discolor Bernh.
Streets at Mecca (8335), and along a road in the flats a few miles west, along a canal at Dixieland (8336). In somewhat damp soil, not far from the borders of Salton Sea, at Caleb and Agua Dulce.
This Mexican species grows in the bottom lands of the Colorado River at Fort Yuma, where it appears indigenous. In the Sink it is an entrant from the delta, apparently recent. The stations at Agua Dulce and the Mecca flats are all on land flooded by the recent Salton Sea; that at Caleb is slightly above the late highwater mark. It thus maintains the ambiguous character assigned it by Gray in the Synoptical Flora, where it is insufficiently described.

Datura meteloides DC.
Indio.
Common in southern California, occasionally reaching the western borders of the desert, and reappearing in the bottom lands of the Colorado River at Fort Yuma.

Nicotiana trigonophylla Dunal.
A few plants in a wash at Caleb (8333), and three in crevices of Travertine Rock.
A common chasmophyte in the cañons of the desert mountains, and occasionally in washes from seed carried down by floods. In the sink only as a rare migrant from higher altitudes.

N. glauca. Indio. McGregor

BIGNONIACEÆ.

Chilopsis linearis Sweet. *C. saligna* Don. Desert Willow.
A few trees at Caleb, where the seed had evidently been brought down a wash; common in cañons and along the courses of washes in the detrital soils of the Basin, but it belongs to higher altitudes than those of the Sink.

PLANTAGINACEÆ.

PLANTAGO LANCEOLATA Linn.
Abundant in a few lawns at El Centro.
A common weed in southern California.

Plantago fastigiata Morris.
Abundant on the plains northeast of Mecca (8446). Dried remains collected near Dixieland are probably the same.
A common species of the Colorado Desert, extending into Mexico.

CUCURBITACEÆ.

Cucurbita palmata Wats. Wild gourd.
Occasional throughout the Sink, notably in washes. Mecca, Caleb, Westmoreland.
A common species of the Colorado Desert, but most abundant in cañons.

LOBELIACEÆ.

Nemacladus adenophorus Parish.
On dry mesas. Salton (*Hall*).
An ephemeral winter annual of detrital plains, common in both deserts.

COMPOSITÆ.

Hofmeisteria pluriseta Gray.
A few plants growing in the crevices of Travertine Rock. The species is a common chasmophyte of the mountains of the Colorado Desert, whence here a migrant.

Brickellia californica Gray, var. **desertorum** Parish.
A few plants at the base of the range southwest of Travertine Point.
Frequent in the desert mountains, from which it is here a migrant.

HETEROTHECA GRANDIFLORA Nutt.
Along the boundary-line road near Calexico; evidently a recently introduced weed.
Indigenous, but more commonly a weed of cultivation, in cismontane southern California.

Isocoma veneta var. **acradenia** Hall. *I. acradenia* and *I. eremophila* Greene.
The most widely distributed plant of the Sink, where it is common in both physically and physiologically dry soils. Mecca (8117), and (MacDougal 402), Imperial, Westmoreland, Brawley, El Centro, Travertine Terraces (MacDougal 23), Indio (8353), Thermal (8343) in damp alkaline soil, are tall forms, with large branching inflorescence. Mecca (8350), in like soil, has few-toothed leaves and represents the *I. eremophila* form. Desert between Brawley and Salton Sea, in dry alluvium (8351), has rather broad, entire leaves and agrees with *I. acradenia*. Dixieland (8353) on artifically moistened alluvium, is 5 dm. tall, the numerous involucres solitary at the summit of pedicels 2 to 5 cm. long. About Durmid and Imperial Junction low forms, with the inflorescence almost capitatly condensed, are common.
A plant of such wide distribution as *Isocoma veneta*, and capable of accepting such varied edaphic conditions, necessarily responds with a complex of ecological forms. The student who has before him even large suits of herbarium material may be content to define what appear to him valid species, but which field study would convince him could be sustained at most only as more or less uncertain forms and varieties. Treated in this light it might be advantageous to give subspecific names to some of the more marked of these forms, but if too rigidly defined they might be identifiable only with the type specimens.

Aster spinosus Benth.
Moist soil along the Alamo and New Rivers, and a pestiferous weed in irrigated lands, in Imperial Valley. New River at Rockwood and Calexico, Brawley, Imperial, El Centro, Meloland, Holtville, Westmoreland. Salton (MacDougal 120), Obsidian Island (MacDougal 202, 203).
An entrant from the Delta. Known to farmers of Imperial Valley as "wild asparagus," from a resemblance of its matted roots to those of that vegetable.

COMPOSITÆ.—Continued.

ASTER EXILIS Ell, var. AUSTRALIS Gray.
A frequent weed about towns and in fields. Thermal. Mecca, Brawley, Imperial, El Centro, Westmoreland, Obsidian Island (MacDougal 306, 413).
A common weed in California; probably introduced in Imperial Valley by irrigation, as it is the form most abundant in the Colorado river-bottoms.

ERIGERON CANADENSIS Linn.
A frequent weed about towns and in fields. Thermal, Mecca (8358), Rockwood, Brawley, El Centro.
Common in many parts of California.

Conyza coulteri Gray.
In the alkaline flats at the northwest end of the Sink. Thermal (8357), Mecca (8356).
Occasional at low altitude in southern California, in soil more or less alkaline.

Baccharis sarothroides Gray.
Mounds along the old beach at southeastern border of the Sink. Near Alamo River east of Calexico (8349), and east of Holtville.
In California confined to the southern border, and thence into Arizona and Mexico.

Baccharis sergiloides Gray.
A few shrubs, in subalkaline soil, near Agua Dulce (8436).

Baccharis glutinosa Pers.
Common along rivers and about springs in most parts of the Sink. New River bottom near Brawley, Rockwood (8354), and Calexico, Alamo river near Calexico, Thermal, Mecca (8127, 8347), Obsidian Island (MacDougal 44, 113, 204, 302).
A species extending south and east to Arizona, Colorado, and Mexico, and extensively distributed at low altitudes in California; but most abundant in the Colorado Desert.

Baccharis viminea DC.
About the moist borders of Dos Palmas Spring (8348).
A common species of cismontane southern California, here quite out of its normal range.

Pluchea camphorata DC.
About springs and in marshy places in the northwestern parts of the Sink. Alkaline flats at Mecca. Beach at Mecca (MacDougal 403), Imperial Junction beach (MacDougal 129), Figtree John Spring, Dos Palmas.
Frequent in like places, at low altitude, throughout California.

Pluchea sericea Coville. Arrowweed.
Very common in river-bottoms, about springs, and in damp soils generally, throughout the Sink. Thermal, Mecca, Mortmere, Dos Palmas, Rockwood, Imperial, El Centro, Calexico, Penguin Island (MacDougal 201).
Common in southern California, most abundant in the desert.

Dicorea canescens T. & G.
Occasional in moist, subalkaline soil. Indio (8366), as a weed in a young date garden, New River bottom Calexico (8365).
Colorado Desert and thence into Arizona.

Hymenoclea salsola T. & G.
Detrital mesas near Mecca. Rabbit Bay (MacDougal 209).
A common species of the Colorado Desert.

AMBROSIA PSILOSTACHYA DC.
Adventive at Imperial.
A common weed in California and in many parts of North America.

COMPOSITÆ.—Continued.

Franseria dumosa Gray. *Gartneria dumosa* Kuntze.
Frequent in detrital soil and occasional in light alluvium. Mecca, Caleb, Durmid, Westmoreland.
A characteristic species of the Californian deserts, extending into Arizona and Mexico.

Xanthium commune Britton.
Meloland (*W. W. Paccard*).

ECLIPTA ALBA Linn.
In the river-bottoms and very common along canals and in irrigated lands in Imperial Valley, and in waste places about the towns of the Sink. Mecca (8362), Rockwood, Brawley, El Centro (8089), Holtville, Meloland, Calexico. Obsidian Island (MacDougal, 4, 303).
A widely distributed subtropical weed, common along the Colorado river-bottoms at Fort Yuma and an entrant into the Sink from the delta. Not before reported from California.

Bebbia juncea var. **aspera** Greene.
Occasional along washes at the upper margin of the Sink at its northeastern end. Near Red Cañon, Dos Palmas.
A species of the cañons of the desert mountains, which barely enters the borders of the Sink.

HELIANTHUS ANNUUS Linn.
This common California weed is beginning to appear in the fields and towns of Imperial Valley. Brawley, Meloland, El Centro.

Encilia farinosa Gray.
Occasional on detrital soil at the northeastern end of the Sink. Salton, Caleb.
A common species of the California deserts, reaching westward into San Bernardino Valley, and eastward into Arizona.

Encelia frutescens Gray.
Rabbit Bay (MacDougal 214).
A widely distributed species in the cañons of the deserts of California, extending to Arizona and Utah. Here a migrant from the mountains.

Encelia eriocephala Gray.
Common on the plains at Mecca (8345). Obsidian Island (MacDougal 33).
Abundant in sandy soil in the Mojave and Colorado deserts.

BIDENS EXPANSA Greene.
A few plants in the stream from the railway waterworks, Mecca (8462).
An abundant indigenous species of cismontane southern California, but here evidently introduced.

Baileya multiradiata Harv. & Gray var. **pleniradiata** Coville.
A single plant in sandy soil, near Meloland (8095).
Common in lower altitudes in the California deserts, thence east to New Mexico.

Baileya pauciradiata Harv. & Gray.
~~Meloland (8095),~~ Dixieland (8368). Abundant in places in the mounds near the Alamo River, east of Calexico, and in sand at Travertine Terraces (8430).
A species of the eastern parts of the Californian deserts, and adjacent Arizona and Mexico.

Palafoxia linearis Lag.
Indio, as a weed in a date garden, Westmoreland. Abundant in places in the mounds near the Alamo River, where it becomes lignescent at base and more than annual (8364). Sands at Travertine Terrace.
A widely distributed species of the Colorado Desert, less frequent in the Mojave Desert, and extending into adjacent Arizona and Mexico.

COMPOSITÆ.—Continued.

Pectis papposa Harv. & Gray.
Frequent in alluvial soil, notably in the mound region of Imperial Valley, flats near Mecca (8371), bluffs at Rockwood (8370), mounds of the old beach east of Holtville (8083, epappose, 8084, pappose), mounds of the Alamo River east of Calexico, where plentiful in places, in both pappose and epappose forms (8372).
Southern border of the Colorado Desert, eastward to New Mexico.

ANTHEMIS COTULA Linn.
Adventive at a few places in Imperial Valley. Imperial. This old-world weed is common in southern California, whence it has probably been introduced here.

Peucephalum schottii Gray.
A few individuals grow in the crevices of Travertine Rock and at the base of the range southwest of it (8431).
This is a characteristic species of the cañons of the arid mountains of the Colorado Desert, and enters the Sink only under the exceptional circumstances here presented.

COMPOSITÆ.—Continued.

Psathyrotes ramosissima Gray.
Frequent along washes and on detrital mesas at the northeastern end of the Sink. Between Mecca and Red Cañon (8115). Obsidian Island (MacDougal 116).
Common in similar places in the Colorado Desert, and east and south into Arizona and Lower California.

Stephanomeria runcinata Nutt.
A few plants at Caleb (8367).
Occasional in the California deserts, and thence into Lower California.

SONCHUS ASPER Vill.
Occasional in the cultivated parts of Imperial Valley. Brawley, Imperial, Mecca (MacDougal 123). Obsidian Island (MacDougal 31).

SONCHUS OLERACEUS Linn.
Very common in the cultivated parts of Imperial Valley. Brawley, Imperial, El Centro. Mecca Flats (MacDougal 127).
These two sow thistles are abundant weeds of cultivation in California, and owe their presence here to the recent settlement of the valley.

The following table gives the approximate altitudes of the localities in feet:

Agua Dulce	— 150	Estelle	— 180	New River at Calexico	— 20
Brawley	— 115	Figtree John	— 150	New River at Rockwood	— 185
Caleb	— 200	Holtville	— 15	Rockwood	— 160
Calexico	— 2	Indio	— 20	Salton	— 200
Coachella	— 71	Imperial	— 70	Seeley	— 50
Dixieland	— 50	Imperial Junction	— 125	Thermal	— 130
Dos Palmas	— 3	Mecca	— 190	Travertine Rock (base)	— 150
Durmid	— 200	Meloland	— 50	Travertine Terraces	— 190
El Centro	— 50	Mortmere	— 175		