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A checklist of Mojave Desert lichens, USA

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Abstract: After adjusting for synonyms and misdeterminations, 279 species in 89 genera are documented herein for the Mojave Desert. This catalog is based on species lists reported in nine peer reviewed publications and includes a general overview of the Mojave Desert in terms of climate, environmental sensitivity, vegetation, and geology. It also includes brief information about each of the eight general collection areas (two papers cover the same study area), as well as a summary discussion of the Mojave Desert lichen flora.

Key words: Mojave Desert, lichens, checklist, environmental sensitivity, vegetation, geology.

Introduction

Description of the Mojave Desert

The Mojave Desert at roughly 140,000 km² represents approximately 11% of the total North American desert area, (Barbour and Billings Eds. 2000) and is the smallest of the four North American deserts. It covers a large portion of Southeastern California, some of Central California, the southern tip of Nevada, and the SW and NW corners of Utah and Arizona respectively. The Mojave Desert is bordered by the Great Basin Desert to the north, the warmer Sonoran Desert to the south, and the Chihuahuan Desert to the southeast. The Colorado Plateau, a mixture of high desert and forested areas, lies to the east.

More specifically, portions of three mountain ranges in Southern California serve as western transition zones to the Mojave with their extreme NE and SE reaches defining the Mojave's NW and SW boundaries. These are the SE foothills of the Tehachapi Mountains, and NE plateaus of the San Bernardino and San Gabriel mountains. These so-called mountain-desert boundaries are further delineated by the San Andreas and Garlock faults.

Climate

Most of the Mojave Desert is considered high desert, or what has been called by some a warm-cold desert. MacMahon, in "North American Terrestrial Vegetation", defines a desert as a warm area with low rainfall and a high rate of evapotranspiration (Barbour and Billings Eds. 2000). Average precipitation across the Mojave Desert is less than 12 cm/year, though averages vary depending on specific locations (Barbour and Billings Eds. 2000). There are also seasonal differences in rainfall, with winter rains being longer in duration, broader in coverage, but generally less intense. Summer rainfall events are more intense, cyclonic thunderstorms, covering smaller areas, and generally of shorter duration (Barbour and Billings Eds. 2000).

Much of the Mojave Desert falls within an elevation range of 600 to 1500m; however, the Mojave Desert also includes Death Valley - which at its lowest point is 86m below sea level, and is the lowest and warmest location in North America (ASU). Wide temperature swings are common in the desert. Mojave summers are hot with daytime temperatures often reaching 50°C. Nights are generally cooler and winter temperatures can be below freezing.

Vegetation

There is some disagreement among scientists as to whether or not the Mojave is a desert in its own right or simply a transition zone between the Great Basin and Sonoran deserts to the north and south, respectively. MacMahon (Barbour and Billings Eds. 2000) argues that it is a distinct and separate desert since 25% of its plant species are endemics. Approximately 250 of the vascular plant species reported for the Mojave Desert are annuals, and 80% of those are endemics (Barbour and Billings Eds. 2000).

A Creosote bush scrub community dominates large portions of the Mojave Desert; particularly, the lower elevation bajadas and valley floors. Creosote (*Larrea tridentata*) is an evergreen shrub which grows in the well aerated sandy to gravelly soils of alluvial fans, plains, benches, and rocky slopes with low salinity and annual precipitation of less than 18 cm (Nellessen 2004). *L. tridentata* has an interesting adaptation which maximizes access to water. Its trunk is divided into multiple stems which are angled from 45° to 65° relative to the soil surface; this arrangement optimizes stem flow and concentrates rainfall to the roots (Nellessen 2004). Creosote bushes in Death Valley, which is the most arid part of this species' range, have stem angles greater than 65° (Nellessen 2004). *L. tridentata* is often found with *Ambrosia dumosa* (white bursage), and MacMahon estimates that perhaps 70% of the

Mojave is covered with these two co-occurring species (Barbour and Billings Eds. 2000).

Other vascular plant species commonly found in the Mojave Desert include: two species of saltbush - *Atriplex hymenelytra* (desert holly) and *Atriplex polycarpa* (cattle spinach); *Encelia farinosa* (brittlebush), *Sphaeralcea ambigua* (mallow), *Menodora spinescens* (spiny menodora), *Lycium pallidum* or *Lycium andersonii* (wolfberries), *Ephedra nevadensis* (Mormon tea), *Krameria parvifolia* (ratany), *Acamptopappus schlockeyi* (goldenhead), *Psoralea fremontii* (Fremont dalea), *Psilostrophe cooperi* (yellow paper daisy), and *Hilaria rigida* (a perennial grass). In addition, 23 species of cactus including: *Opuntia basilaris* (beavertail), *O. echinocarpa*, *O. acanthocarpa* (2 chollas), *Echinocactus polycephalus*, and *Ferocactus acanthodes* (a barrel cactus) are also reported for the Mojave Desert. In rills and channels with more moisture *Hymenoclea salsola* (cheesebush) is common, along with *Cassia armata*, *Ambrosia eriocentra*, *Brickellia incana*, and *Acacia greggii* (catclaw). There are also 3 yuccas species reported for the Mojave Desert: *Yucca brevifolia* (Joshua tree), *Y. schidigera* (Mojave yucca), and *Y. baccata* (banana yucca). Finally, in areas with established desert pavement and calcareous soils creosote bush is often found with *Atriplex confertifolia* (Barbour and Billings Eds., 2000).

The Joshua tree (*Yucca brevifolia*) is a Mojave Desert endemic and its distribution generally follows the Mojave Desert boundary. It is a large, evergreen, tree-like monocot that achieves its annual growth primarily during the winter and spring months ([Digital Desert](#)). It ranges in height from 5m to 10m and occasionally as high as 20m [US Forest Service Database]. The Joshua tree's growth rate is relatively slow compared to vascular plants from other environments, but fairly rapid for a desert species – increasing by an average of 5.9 cm/year (Webber 1953). It has an average life span of 150

years (Kliemann 1979), and some individuals have been reported to be as much as 300 years old (Johnson 1970). Despite its prevalence in the Mojave - it has not been reported as a lichen substrate in any of the studies cited herein.

Environmental Sensitivity

The Mojave Desert, typical of xeric systems in general, is a fragile and vulnerable environment and recovery following human-related impact occurs very slowly. This pattern is illustrated by the slow recovery rate of biological soil crusts on desert pavement damaged nearly 70 years ago during World War II related training maneuvers in the Mojave Desert. In 1942 the Desert Training Area (DTA) was established in the Mojave Desert by the U. S. military. The facility was actively used from 1942-1944 (Webb et al. 2009). Where open shrub interspaces were impacted by vehicular traffic, the damage to the soil crust community area is still clearly visible (Belnap and Warren 2002). In the intervening years since the original maneuvers the recovery rate for two of the more common soil crust lichens – *Placidium squamulosum* and *Enchylium tenax* - has been 3%, and 6%, respectively (Belnap and Warren 2002).

Recently, parts of the Mojave Desert system have experienced significantly altered fire regimes largely due to the introduction of invasive exotic grasses (D'Antonio and Vitousek 1992; Horn et al. 2015). Historically, deserts generally have fewer and smaller fire events than environments with higher fuel loads, due in part to lower amounts of noncontiguous fuel (Humphrey 1974; Brooks and Chambers 2011; Horn et al. 2015). The introduction of invasive grasses into the Mojave Desert in recent years has resulted in much higher intershrub space fuel loads thus facilitating larger and more intense fire events (D'Antonio and Vitousek 1992; Brooks et al. 2004; Brooks and Matchett 2006; Bukowski and Baker 2012; Horn et al. 2015). In environments that are fire adapted, fire can positively impact diversity partly through stimulating seed bank

activity (Keeley et al. 2005); however, high intensity desert fires generally negatively impact the ecosystem response and suppress regeneration of the plant community by scorching seeds and root crowns in the upper layers of soil (Brooks 2002; Esque et al. 2010; Horn et al. 2015). In addition, high intensity fires also change the nutrient content, structure, and hydrology of soils (D'Antonio and Vitousek 1992; Webb et al. 2009; Horn et al. 2015). Furthermore, fire-damaged soils may have decreased pore space, water content, and organic matter, along with increased pH and soil temperatures at the surface (Lei 1999; Horn et al. 2015). Thus the Mojave Desert post-fire vascular plant community is dramatically altered and commonly transitions into a monoculture of invasive annual species (Abella 2010; Vamstad and Rotenberry 2010).

Geology and substrates

The most common soil types found on the Mojave Desert floor are sandy soils, gravelly pavement (desert pavement), salt flats, and playas (Barbour and Billings Eds. 2000). The physiography of the Mojave Desert is classic basin and range topography, the basins are sunken regions of the flat crust bordered by up-thrust block mountain ranges along fault lines. These basins run north to south and generally cover more than 50% of the land area (Barbour and Billings Eds. 2000). This general topography has been caused by stretching of the earth's crust with subsequent faulting. Mountain and basin forming actions began in this region 170 MYA and lasted through 40 MYA, from the Jurassic through the Cenozoic Periods (geomaps.wr.usgs.gov).

The subduction of the ancient Farallon oceanic plate caused the complete subsumption of that plate into the earth's molton mantle and a partial melting of the North American plate. The friction caused by the movement of the thinner but denser oceanic plate sliding parallel to - and beneath - the thicker less dense continental plate is the source for the molton material that became

the "plutonic inclusions" found currently in the Mojave Desert (Ianno and Paterson 2014). These now cooled inclusions can be found today as the much eroded and weathered monzonite and monzogranite boulders and rock formations of the Mojave Desert Preserve. These date from the Mesozoic Era, from as early as the Jurassic to as late as the Cretaceous periods (Howard et al. 2013). They serve as important substrata for a significant number of Mojave Desert lichens. Other saxicolous substrates in the Mojave Desert, as outlined by the overview of the 8 collection areas, include: granite, gneiss, basalt, other-forms-of "lava rock", caliche, limestone, sandstone, gypsiferous soil, and non-calcareous rocks.

Summary information concerning the eight collection areas included in this report

Herman Edward Hasse. 1913. The lichen flora of Southern California. Bulletin of the United States National Museum. Issued June 9, 1913.

For more than a dozen years, Herman Hasse collected lichens mostly in Los Angeles County, California (Hasse 1910, Hasse 1913), periodically receiving feedback and specimens from several prominent European lichenologists, including Ernst Stizenberger, Dr. William Nylander, and Dr. A. Zahlbruckner (Hasse 1913). He also received specimens from other California collectors, including Mr. S. B. Parish of San Bernardino, who is noted below on a few specimens (Hasse 1913). Hasse published his Lichen Flora of Southern California in 1913 with the National Herbarium, noting that the lichens of Southern CA were found in three topographical areas: a coastal area, a mountainous region, and a desert. This is assumed as proof that he included Mojave Desert lichens within this flora. He states that the mountainous region transitions through a gradual descent which "passes into the desert plateau of 1200m elevation, gently sloping east and northeasterly, southward descending to, and

in some localities even below, the sea level” (Hasse 1913). He notes that this desert section is arid most of the year, and observed that the lichens were primarily found on soil or rocks, with very few corticolous species, mainly but not entirely, due to scanty-precipitation and low-humidity (Hasse 1913). As evidence that there were other factors at work, he offers his observation that in locations sheltered from wind and direct sunlight, desert lichens could be said to “flourish in a measure”, though much limited as to variety compared to elsewhere in Southern California (Hasse 1913).

Generally, Hasse doesn’t specifically designate whether a specimen is from the desert portion of his study, except in a few cases where based on the locality given by Hasse some specimens were definitely either collected in the transition zone or the Mojave Desert proper. For the rest, a bit of detective work was necessary to arrive at a list of “possible Mojave Desert lichens” based on Hasse’s published flora. This task was accomplished by examining elevation substrate, vegetation, and precipitation patterns. Based on this information, we have included several of Hasse’s collections in this checklist.

Spring Mountains, Humboldt-Toiyabe National Forest, Clark and Nye Counties, Nevada.
Monica W. Proulx and Larry L. St. Clair,
published 2013.

The Spring Mountains are a sky island mountain range in the Mojave Desert located approximately 25 km northwest of Las Vegas. This survey was based on extensive collections made between 1997 and 2007 as part of an air quality bio-monitoring program and baseline established in the Spring Mountains National Recreation Area in the Humboldt-Toiyabe National Forest (St. Clair et al. 2007, Proulx 2011). Specimens were collected from 15 unique collection sites in the Spring Mountains, with elevations ranging from a low of 1,600m at Crystal Spring Canyon, Nye

County (GPS: 36° 25.607’ North Latitude, 115° 58.434’ West Longitude) - to a high of 2,642m at Bristlecone Loop Trail, Clark County (GPS: 36° 18.618’ North Latitude, 115° 40.629’ West Longitude) (St. Clair et al. 2007, Proulx 2011). The species list from the Spring Mountains survey includes 122 lichen species in 54 genera and represents 44% of the 279 species in 98 genera reported to date for the Mojave Desert.

The Lichen Flora of Joshua Tree National Park:
An Annotated Checklist

Kerry Knudsen, Mitzi Harding, Josh Hoines,
published 2013

Joshua Tree National Park, consisting of approximately 800,000 acres, is located in Southern California specifically in Riverside and San Bernardino counties. Portions of the park form a transition zone between the Sonoran and Mojave deserts. Collections considered in this publication were from the Mojave Desert portion of the park – specifically, the northwest section. Lichens reported for Joshua Tree National Park were generally found on the rock walls of washes or on north facing slopes. The Eureka Peak area was examined more specifically in a separate study. This study reported 143 species in 61 genera. (Note: the Knudsen, K., M. Harding and J. Hoines 2013 report for the Joshua Tree National Park covers lichens found in both the Sonoran and Mojave Deserts inside the park, and usually gives the substrate and abundance separately for each portion of the park, but occasionally gives this information “in general” for the entire park and not specifically for the Sonoran or Mojave deserts. For the purpose of this checklist in the event this is the case for a specific lichen, the substrate and/or abundance will be stated “in general” for Joshua Tree National Park using the phrase “in general” in quotation marks. Inferring conclusions about the Mojave Desert, specifically, is up to the judgement of the reader.)

Lichen flora of the Eastern Mojave Desert:

Blackrock Arizona, Mojave County, Arizona, USA
Heather Bird Jackson, Steven D. Leavitt, Thomas
Krebs, and Larry L. St. Clair, published 2005.

This survey is based on field identifications and
collections made at several sites near Black Rock
Road in the Northeastern Mojave Desert, 1.6 km
south of the Utah-Arizona border, in Mojave
County, extreme Northwestern Arizona. The
elevation of the site was 1,058m (3,471 ft.); at 36°
58.522' North Latitude, 113° 38.650' West
Longitude. The authors report 41 lichen species
in 28 genera. Specimens were collected from
Kaibab and Moenkopi rock outcrops, soil and
bark/lignum of creosote shrubs, in an open and
flat shrub land transitioning upward into a
vegetated drainage area with rocky outcrops.

Lichens of the Granite Mountains, Sweeney
Granite Mountain Desert Research Center,
Southwestern Mojave Desert, San Bernardino
County, California.

Kerry Knudsen, Silke Werth, published 2008.
And

Lichens of the Sweeney Granite Mountains
Desert Research Center and Environs:
California Lichen Society Exploratory Field Trip,
October 9-12, 1998, published 1999.

Janet Doell

Two lichen surveys were completed in the
Sweeney Granite Mountains, discussed here as
one area. The Sweeney Granite Mountains
Desert Research Center is part of the University
of California Natural Reserve System and is
located in San Bernardino County 128 km east of
Barstow. The highest point in the Reserve,
within the Granite Mountains, is 2,070m; the
lowest point is 670m, and the Reserve includes
3,626 ha (36 sq km) of the Mojave Desert.
Average annual precipitation is 15-20 cm year.
From maps, one can see that the Granite
Mountains are inside the Eastern Mojave Desert,
which lies within the transition zone between the
Sonoran Desert to the south and the Great Basin
Desert to the north. The combined species count

for these two surveys is 98 species in 53 genera,
with 17 lichen species in common between the
two studies.

The Lichen Flora of Two Sites in the Mojave
Desert, California, USA

Kathryn B. Knight, Deborah R. Clements, Luis F.
Gordillo, Jonathan I. Jefferies, Derek Tilley,
Taylor J. Workman, Anna F. Lloyd, and Larry L.
St. Clair, published 2002.

Two sites were collected in the Mojave National
Preserve, along Kelbaker Road, 20 km southeast
of Baker, California and 1 km east of the Orofino
Mine along a north facing lava flow at 610m
elevation (GPS: 35° 12.315' North Latitude, 115°
52.259' West Longitude). The second site was at
the east end of Black Tank Wash and 3 km N-NW
of a cinder pit mine, also along a north facing lava
flow, at 1160m elevation (GPS: 35° 14.424' North
Latitude, 115° 44.355' West Longitude). Lichens
were collected from rock, soil, and lignum.
Conditions at these two sites are marked by
extreme heat and aridity. Lichens were found
only in protected habitats, with saxicolous species
limited to the north facing exposures of the basalt
flows. No lichens were found on south
exposures. Patchy terricolous lichen
communities were found on the edges of
ephemeral waterways. This study reported 39
species in 29 genera.

The Lichen Flora of the Southwestern Mojave
Desert: Eureka Peak, Joshua Tree National Park,
Riverside and San Bernardino Counties,
California, USA

Kerry Knudsen and Tasha La Doux, published
2006.

Eureka Peak is the second highest peak (1,677m)
in the San Bernardino Mountain range and is
located in Joshua Tree National Park, in the
southwestern Mojave Desert of California. The
Little San Bernardino Mountains are adjacent to
the northern portion of the Sonoran Desert along

the San Andreas Fault. Eureka Peak is located at 34° 01' 57" North Latitude, 116° 21' 01" West Longitude; all sides of the mountain were collected where accessible, up to 60m (197 ft.) below the summit. Rocky substrates on Eureka Peak are from the Mesozoic era, and consist of plutonic monzogranite inclusions, which were exposed due to uplift and erosion. The authors reported 30 species in 23 genera from this site.

Lichen Flora of the Southwestern Mojave Desert: Keys Ranch, Joshua Tree National Park, San Bernardino County, California, USA
Kerry Knudsen and Tasha La Doux, published 2005.

Key's Ranch is located in the Little San Bernardino Mountains in Joshua Tree National Park, San Bernardino County, California. The sites surveyed in this study were located above and around "Key's Ranch," an early 20th century homestead on the National Register of Historic Places, at an elevation of 1,267m, at 34° 2.82' North Latitude, 116° 10.16' West Longitude. Rocky substrates around the ranch are Cretaceous in age (from 74-106 MYA) and are dominated by a two-mica quartz monzonite (Barth et al. 2004) originating from plutonic inclusions. The physiography of the area is dry washes with granite boulder outcrops. This study reported 41 species in 32 genera.

A Checklist of the Lichens of the Beaver Dam Slope, Washington County, Utah, USA
Gagendra Shrestha, Steven D. Leavitt, Monica W. Proulx, Lawrence A. Glacy, Christina Call, John Henrichsen, and Larry L. St. Clair, published 2012.

Beaver Dam Slope in Washington Co., Utah, is located in the extreme northeastern part of the Mojave Desert. Five sites were surveyed, including some on the privately owned Lytle Ranch Preserve. This study area is found in the transition zone between the Mojave Desert, the Great Basin, and the Colorado Plateau. This study

includes 16 species reported for Utah for the first time and 10 new records for the Mojave Desert. The authors reported 41 species in 23 genera, 30 of which were saxicolous, 7 terricolous and 4 corticolous.

Note on formatting for the Species

Checklist: Genera and species names in SMALL CAPS indicate current nomenclature. Genera and species names in *Italics* when used as headings, or following the word "Synonym:", indicate no longer accepted nomenclature. Detailed distribution information for each species is recorded under the scientific name as used in the original publication for each collection site, and not under current nomenclature.

Species Checklist

ACAROSPORA A. Massal.

ACAROSPORA AMERICANA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 11, common, on granite and gneiss in Joshua Tree National Park, in the Mojave, at the following sites: Cottonwood Mountains, Juniper Flats, Little San Bernardino Mountains (Eureka Peak), Lost Horse Mountains, Ryan Mountain, Upper Covington Flats, Riverside and San Bernardino Counties, CA)

ACAROSPORA BADIOFUSCA (Nyl.) Th. Fr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, uncommon, on rock, Spring Mountains, Clark County, NV; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite slopes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA) – Synonym: *Acarospora californica* Zahlbr.

ACAROSPORA BOULDERENSIS H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 11, Description: Knudsen and Kocourková. Found on granite in the Mojave Desert in Joshua Tree National Park, most specimens poor, at the following sites: Hidden Valley, Little San Bernardino Mountains (Berdo Canyon), Smith

Water Canyon, Upper and Lower Covington Flats, Riverside and San Bernardino Counties, CA) This species was segregated from *Acarospora badiofusca* (Nyl.) Th. Fr.. Note: Esslinger changes North American records of *A. boulderensis* H. Magn. to *A. badiofusca* (Nyl.) Th. Fr. (Esslinger 2015), however, Knudsen indicates that –

“*Acarospora boulderensis* occurs in central Europe and across temperate North America. It is frequent in the mountains of Southern California and along the Eastern Sierra Nevada Mountains in Inyo County.

Acarospora boulderensis occurs in the Mojave Desert in Joshua Tree. Most specimens are poor. It is documented by 9 collections. This species was segregated from *A. badiofusca* (Nyl.) Th. Fr.” (Knudsen and Kocourková 2012)

ACAROSPORA BROUARDII B. de Lesd. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark County, NV)

ACAROSPORA CALCAREA K. Knudsen (--Shrestha, G. et al. 2012, p. 4, rare at 1 of 5 sites, on rock, this species report is a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

Acarospora californica Zahlbr. (--Doell, J. 1999, p. 8, common, on lava and rock, Sweeney Granite Mountains, San Bernardino County, CA.) = ACAROSPORA BADIOFUSCA (Nyl.) Th. Fr.

Acarospora chlorophana (Wahlenb.) A. Massal. (--Hasse 1913, p. 64, collected by S. B. Parish in the San Bernardino Mountains, and also found in the San Gabriel Mountains, CA) = PLEOPSISIDIUM CHLOROPHANUM (Wahlenb.) Zopf

ACAROSPORA CONTIGUA H. Magn. (--Shrestha, G. et al. 2012, p. 4, rare at 1 of 5 sites, on rock, this

species report is a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

ACAROSPORA DISPERSA H. Magn. (--Shrestha, G. et al. 2012, p. 4, rare at 1 of 5 sites, on rock, this species report is a new record for the Mojave Desert, Beaver Dam Slope, Beaver Dam Slope, Washington County, UT)

ACAROSPORA ELEVATA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 11, on basalt, gneiss, and granite in Joshua Tree National Park, at the following sites: Hexie Mountain, Little San Bernardino Mountains (east of Long Canyon, Eureka Peak and Pushwalla Plateau), Lost Horse Mountains, Lower Covington Flats, Malapai Hill (abundant on granite), Ryan Mountain, Queen Mountain, Wonderland of Rocks at Keys Ranch, Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite on east facing slopes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

ACAROSPORA FUSCATA (Schrader) Arnold (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark County, NV; --Doell, J. 1999, pp. 8-9, found at 2 of 4 collection sites, on lava rock and other rock, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 34, common to abundant, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. 2002, p. 29, locally common, on basalt, Mojave National Preserve, San Bernardino County, CA)

ACAROSPORA GLAUCOCARPA (Ach.) Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark County, NV)

ACAROSPORA MACROSPORA (Hepp) A. Massal. ex Bagl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark

County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, pg. 11, rare, on decaying granite with calcium deposits due to evaporating water, at the following sites in Joshua Tree National Park: Desert wash between Skull Rock and Jumbo Rocks, Sheep's Pass, Upper Juniper Flats, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 16, rare on decomposing granite in wash, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

ACAROSPORA NEVADENSIS H. Magn. (--Knudsen, K. and S. Werth 2008, p. 16, rare, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

ACAROSPORA NODULOSA (Dufour) Hue var. nodulosa. (--Jackson, H. et al. 2005, p. 34, 35, rare to locally common, on gypsiferous soil, vicinity of Black Rock Road, Mojave County, North AZ)

ACAROSPORA NOVOMEXICANA H. Magn. (--Shrestha G. et al. 2012, p. 4, common at 1 of 5 sites, on rock, this species report represents a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

ACAROSPORA OBNUBILA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 12, common, on granite, rarely on basalt or gneiss in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Black Rock Canyon, east of Long Canyon, Geology Tour Road, Eureka Peak), Lost Horse Mountains, Lower Covington Flats, Malapai Hill, Sheep's Pass, Queen Mountain, Upper Juniper Flats, Wonderland of Rocks (Wall Street Mill area), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree

National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

ACAROSPORA OBPALLENS (Nyl. ex Hasse) Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 12, rare, on soft monzogranite boulders and on soil in rock crevices in the Mojave Desert in Joshua Tree National Park, at the following sites: Wonderland of Rocks (Indian Cove, trail to Steve Canyon, near Wall Street Mill), steep wash east of Quail Mountain, Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, infrequent, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

ACAROSPORA PELISCYPHA Th. Fr. *A. peliscypha* is a European species that probably only occurs in Western North America and is found in CA from San Jacinto Mountains and north to Mono County via the Eastern Sierra Nevada Mountain range, and it is also found in the Basin and Range and Sonoran floras in Arizona (Knudsen et al., 2013, p. 12); (--Knudsen, K., M. Harding and J. Hoines 2013, p. 12, rare and sterile, possibly from environmental stress, found on gneiss and granite in the Mojave in Joshua Tree National Park at the following sites: Lost Horse Mountain, Lower Covington Flats, Ryan Mountain, in Riverside County, CA)

Acarospora peltastica Zahlbr. (--Doell, J. 1999, p. 9, found at 2 of 4 collection sites, on granite, and lava, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 35, common to abundant, on rock, Black Rock Road vicinity, Mojave Cnty, Northwestern AZ; --Knight, K. B. et al. 2002, p. 29, rare, on basalt, Mojave National Preserve, San Bernardino County, CA) = ACAROSPORA STRIGATA (Nyl.) Jatta

ACAROSPORA ROSULATA (Th. Fr.) H. Magn.
Description in 2007 by Knudsen as *A. bullata*,
renamed as *A. rosulata* by Knudsen et al. (2010).
(--Knudsen, K. et al. 2013, p. 12, frequent, on
gneiss and granite in Joshua Tree National Park,
at the following sites: Little San Bernardino
Mountains (Black Rock Canyon, Eureka Peak),
Lost Horse Mountain, Queen Mountain, Queen
Valley, Ryan Mountain, Sheep's Pass, Upper and
Lower Covington Flats, Upper Juniper Flats,
Riverside and San Bernardino Counties, CA)

Acarospora smaragdula (Wahlenb.) A. Massal.
(--Knight, K. B. et al. 2002, p. 29, locally common
on basalt, Mojave National Preserve, San
Bernardino County, CA) = MYRIOSPORA
SMARAGDULA (Wahlenb. ex Ach.) K. Knudsen and
L. Arcadia

ACAROSPORA SOCIALIS H. Magn. (--Knudsen, K.,
M. Harding and J. Hoines 2013, p. 14, common,
on basalt, gneiss, and granite "in general" for
Joshua Tree National Park. Knudsen states that
aply named *A. socialis* is probably the most
common lichen found in the Joshua Tree
National Park (Knudsen, K. et al. 2013, p. 14). It
is found in the Mojave Desert section of the park
at the following sites: Hexie Mountains, Juniper
Flats, Little San Bernardino Mountains (Berdoe
Canyon, Eureka Peak, Inspiration Point,
Pushwalla Plateau), Lost Horse Mountain,
Malapai Hill, Pinkham Canyon, Pinto Basin,
Pinto Mountains (Belle Mountain), Saddle Rock,
Sheep's Pass, Smith Water Canyon, Wilson
Canyon, Wonderland of Rocks (Keys Ranch,
Indian Cove, near west entrance, Rattlesnake
Canyon), Riverside and San Bernardino Counties,
CA; --Knudsen, K. and S. Werth 2008, p. 16,
common, on granite, Sweeney Granite Mountains
and Sweeney Mountain Desert Research Center,
Eastern San Bernardino County, CA; --Knudsen,
K. and T. La Doux 2005, p. 105, abundant, on
granite, Keys Ranch, Joshua Tree National Park,
San Bernardino County, CA; --Knudsen, K. and
T. La Doux 2006, p. 25, abundant, on granite on

Eureka Peak, Joshua Tree National Park,
Riverside and San Bernardino Counties, CA)

ACAROSPORA STRIGATA (Nyl.) Jatta

Knudsen says: "*A. strigata* is usually
field identified by its heavy white
pruinia and cross-hatching on verrucae
and areoles but is occasionally non-
pruinose, smooth and brown though
usually found mixed with pruinose
fissured areoles, and that the non
pruinose specimens can be easily
confused with *A. elevata* or *A. obnubila*."
(Knudsen, K. et al. 2013, p. 11);

(--Proulx, M. W. and L. L. St. Clair 2013, pp. 9,
14, uncommon, on rock Spring Mountains, Clark
County, NV; -- Knudsen, K., M. Harding and J.
Hoines 2013, pg. 14, it is found on caliche,
gneiss, and granite in the Mojave Desert in
Joshua Tree National Park, at the following
sites: Little San Bernardino Mountains (Berdoe
Canyon, Eureka Peak, Geology Tour Road, Keys
View, Pushwalla), Juniper Flats, Malapai Hill,
Pine City, Pinto Mountains (Belle Mountain),
Queen Mountain, Ryan Mountain, Sheep's Pass,
Skull Rock, Smith Water Canyon, Stirrup Tank,
Upper Covington Flats, Wonderland of Rocks
(Keys Ranch), Riverside and San Bernardino
Counties, CA; --Doell, J. 1999, p. 9, common, on
granite and lava rock, Sweeney Granite
Mountains, San Bernardino County, CA;
--Knudsen, K. and S. Werth 2008, p. 16,
infrequent, on granite, Sweeney Granite
Mountains and Sweeney Mountain Desert
Research Center, Eastern San Bernardino
County, CA; --Jackson, H. et al. 2005, p. 35,
common to abundant, on rock, vicinity of Black
Rock Road, Mojave County, Northwestern AZ;
--Knudsen, K. and T. La Doux 2005, p. 105,
abundant, on granite, Keys Ranch, Joshua Tree
National Park, San Bernardino County, CA;
--Knight, K. B. et al. 2002, p. 29, rare to locally
common, on basalt, (*note*: lichen specimens

were found by Knight et al., at Mojave NP and named as both *A. peltastica* and *A. strigata*), Mojave National Preserve, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, common, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 4, common at 3 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT) – Synonym: *Acarospora peltastica* Zahlbr

ADELOLECIA Hertel & Hafellner

ADELOLECIA SONORAE Hertel (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on limestone, Spring Mountains, Clark County, NV)

AMANDINEA M. Choisy ex Scheid. & H. Mayrhofer

AMANDINEA PUNCTATA (Hoffm.) Coppins & Scheid. (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 14, 16, Knudsen says *A. punctata* is found in the Mojave in Joshua Tree National Park usually on juniper trees (often as the only lichen growing on junipers), and also infrequently on the dried bark and lignum from dead branches of fallen pinyon pines, *Purshia tridentata* var. *granulosa*, and oaks, at the following sites: Juniper Flats, Keys View (on surviving un-burnt junipers), Little San Bernardino Mountains (Black Rock, Eureka Peak, near Long Canyon), Lost Horse Mountains (on basalt peak), Lost Horse Valley, Lower and Upper Covington Flats, Pine City, Ryan Mountain, Riverside and San Bernardino Counties, CA ; --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA) – Synonym: *Buellia punctata* (Hoffm.) A. Massal.

ANAPTYCHIA Körber

ANAPTYCHIA ELBURSIANA (Szatala) Poelt (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark County, NV)

ASPICILIA A. Massal.

ASPICILIA ANGLICA Owe-Larsson & A. Nordin (--Knudsen, K., M. Harding and J. Hoines 2013, p. 16, *A. anglica* is an endemic Southern California montane species, found sterile but usually with isidia, and very abraded on granite, in the Mojave Desert in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Upper Pinyon Well wash), Lower Covington Flats, Ryan Mountain (observed), Wonderland of Rocks (Indian Cove, Rattlesnake Canyon, Wall Street Mill), Riverside and San Bernardino Counties, CA)

ASPICILIA CALIFORNICA Rosentreter (--Jackson, H. et al. 2005, p. 35, rare, on gypsiferous soil, Black Rock Road vicinity, Mojave County, Northwestern AZ)

ASPICILIA CINEREA (L.) Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on rock, Spring Mountains, Clark County, NV; --Shrestha et al., 2012, p. 4, rare, on rock, at site 4, Beaver Dam Slope, Washington County, UT) – Synonym: *Lecanora cinerea* (L.) Sommerf.

ASPICILIA CUPREA Owe-Larss. and A. Nordin (--Knudsen, K., M. Harding and J. Hoines 2013, p. 16, common, on granite and gneiss in the Mojave in Joshua Tree National Park, at the following sites: Hexie Mountains, Hidden Valley, Little San Bernardino Mountains (Eureka Peak, Long Canyon area, Pushwalla), Lower and Upper Covington Flats, Saddle Rock, Smith Water Canyon, Wonderland of Rocks (lg. circular thalli of unknown age on sheltered monzogranite outcrops in Indian Cove, Rattlesnake Canyon, Wall Street Mill area), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite in washes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

Aspicilia desertorum (Kremp.) Mereschk
 (--Knudsen, K. and S. Werth 2008, p. 16,
 common, on granite, Sweeney Granite Mountains
 and Sweeney Mountain Desert Research Center,
 Eastern San Bernardino County, CA; --Jackson,
 H. et al. 2005, p. 35, rare to locally common, on
 rock, Black Rock Road vicinity, Mojave County,
 Northwestern AZ; --Knudsen, K. and T. La Doux
 2005, p. 105, abundant, on granite, Keys Ranch,
 Joshua Tree National Park, San Bernardino
 County, CA; --Knight, K. B. et al. 2002, p. 29,
 rare, on basalt, Mojave National Preserve, San
 Bernardino County, CA) = *CIRCINARIA ARIDA*
 Owe-Larsson, A. Nordin and Tibell

ASPICILIA DETERMINATA (H. Magn.) N. S. Golubk.
 (--Shrestha G. et al. 2012, p. 4, rare to common at
 2 of 5 sites, on rock, this represents a new record
 for the Mojave Desert, Beaver Dam Slope,
 Washington County, UT)

ASPICILIA FUMOSA Owe-Larss. & A. Nordin
 (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9,
 14, rare, on rock, Spring Mountains, Clark Co.,
 NV)

ASPICILIA NASHII Owe-Lars. & A. Nordin
 (--Knudsen, K., M. Harding and J. Hoines 2013,
 p. 17, rare, on granite in Joshua Tree National
 Park, at the following site: Upper Covington
 Flats, San Bernardino County, CA)

ASPICILIA OLIVACEOBRUNNEA Owe-Larsson & A.
 Nordin (--Knudsen, K., M. Harding and J. Hoines
 2013, p. 17, rare, on granite in Joshua Tree
 National Park, at the following site: Smith Water
 Canyon, San Bernardino County, CA)

ASPICILIA PELTASTICOIDES (Hasse) K. Knudsen &
 Kocourk. – Synonyms: *Circinaria contorta*
 (Hoffm.) A. and *Aspicilia contorta*

ASPICILIA PHAEA Owe-Larsson & A. Nordin
 (--Knudsen, K., M. Harding and J. Hoines 2013,
 p. 17, endemic to California, common, on granite,
 (in poor shape probably due to environmental

stress and often infected with *Lichenostigma*) in
 Joshua Tree National Park, at the following sites:
 Hills at west entrance, Little San Bernardino
 Mountains (Berdo Canyon, Eureka Peak, near
 Long Canyon), Lower and Upper Covington Flats,
 Smith Water Canyon, Riverside and San
 Bernardino Counties, CA.)

ASPICILIA VERRUCIGERA Hue (--Proulx, M. W. and
 L. L. St. Clair 2013, pp. 9, 14, rare, on rock
 (limestone), Spring Mountains, Clark County,
 NV)

BACIDIA De Not.

BACIDIA COPRODES (Körber) Lettau (--Knudsen,
 K., M. Harding and J. Hoines 2013, p. 17 rare, on
 monzogranite in the Mojave in Joshua Tree
 National Park, at the following site: Wonderland
 of Rocks (Keys Ranch), San Bernardino County,
 CA)

BIATORELLA De Not.

Biatorella pruinosa (Körber) Mudd. (--Hasse
 1913, p. 62, collected by S. B. Parish from rock in
 the San Bernardino Mountains, CA) = *SARCOGYNE*
REGULARIS Körber

Biatorella simplex (Taylor) Branth & Roestrup
 (--Hasse 1913, pp. 62, 63, on rock in the San
 Gabriel Mountains, CA) = *POLYSPORINA SIMPLEX*
 (Taylor) Vězda

BLASTENIA A. Massal.

BLASTENIA FERRUGINEA (Hudson) Th. Fr. –
 Synonym: *Caloplaca ferruginea* (Hudson) Th. Fr

BLENNOTHALLIA Trevisan

BLENNOTHALLIA CRISPA (Hudson) Otálora, P. M.
 Jørg. & Wedin – Synonym: *Collema crispum*
 (Hudson) F. H. Wigg.

BUELLIA De Not.

BUELLIA ABSTRACTA (Nyl.) H. Olivier (--Knudsen,
 K., M. Harding and J. Hoines 2013, pp. 17, 19,
 common, on granite (preferring decaying
 monzogranite) in Joshua Tree National Park, in

the Mojave at the following sites: Juniper Flats, Little San Bernardino Mountains (Berdo Canyon, Pushwalla), Lower and Upper Covington Flats, Pine City, Pinkham Canyon, Queen Mountain, Queen Valley, Ryan Mountain, Saddle Rock, Sheep's Pass, Smith Water Canyon, Split Rock, Squaw Tank, Wonderland of Rocks (near west entrance to park), Riverside and San Bernardino Counties, CA)

Buellia alboatra (Hoffm.) Th. Fr. (--Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA) = DIPLOTOMMA ALBOATRUM (Hoffm.) Flotow

BUELLIA BADIA (Fr.) A. Massal (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on lignum, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 19, rare, generally parasitic on other lichens in California; parasitic on an isidiate *Xanthoparmelia* species and an unknown crustose lichen in the Mojave in Joshua Tree National Park, at the following site: Hills at the western entrance to the park, San Bernardino County, CA)

Buellia chloroleuca Körber (--Knudsen, K. and S. Werth 2008, p. 16, rare on juniper wood and bark, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA) = TETRAMELAS CHLOROLEUCUS (Körber) A. Nordin

BUELLIA DISCIFORMIS (Fr.) Mudd (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on bark and dead wood, Spring Mountains, Clark County, NV)

BUELLIA DISPERSA A. Massal. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 19, on granite, monzogranite, basalt and gneiss in the Mojave Desert in Joshua Tree National Park, at the following sites: 49 Palm Canyon, Hidden Valley, hills near west entrance, Little San Bernardino

Mountains (Eureka Peak, Pushwalla), Malapai Hill (on basalt), Ryan Mountain, Upper Juniper Flats, Wonderland of Rocks (Keys Ranch, Wall Street Mill, Willow Hole), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, common, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 4, rare at 1 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

BUELLIA IMSHAUGHII Hafellner (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 19, 20, starting as a fungal parasite on *Dimelaena oreina* and developing into an independent lichenized thallus in the Mojave in Joshua Tree National Park, at the following sites: Queen Mountain, Upper Covington Flats, San Bernardino County, CA)

BUELLIA NASHII Bungartz (--Knudsen, K., M. Harding and J. Hoines 2013, p. 20, rare, on granite and monzogranite in the Mojave Desert in Joshua Tree National Park, at the following sites: Hidden Valley, Upper Juniper Flats, Riverside County, CA)

Buellia punctata (Hoffm.) A. Massal. (--Knudsen, K. and S. Werth 2008, p. 16, common, on conifer lignum over 1500m in elevation, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, rare, on lignum of *Purshia tridentata* var. *grandulosa* and an unknown wood on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA) = AMANDINEA PUNCTATA (Hoffm.) Coppins & Scheid.

BUELLIA SEQUAX (Nyl.) Zahlbr. (--Knudsen, K. and S. Werth 2008, p. 16, frequent, on granite slopes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, common, on granite, Keys Ranch, Joshua Tree National Park San Bernardino County, CA)

BUELLIA SPURIA (Schaerer) Anzi (--Knudsen, K., M. Harding and J. Hoines 2013, p. 20, frequent, on granite in the Mojave in Joshua Tree National Park, at the following sites: East of Quail Mountain, Little San Bernardino Mountains (Pushwalla Pass), Lost Horse Mountains, Lost Horse Valley, Saddle Rock, Upper Juniper Flats, Wonderland of Rocks (Keys Ranch, Wall Street Mill), Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

Buellia venusta (Körber) Lettau (--Knudsen, K. and S. Werth, 2008, p. 16, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA) = **DIPLOTOMMA VENUSTUM** (Körber) Körber

CALOGAYA Arup, Frödén and Søchting
CALOGAYA DECIPIENS (Arnold) Arup, Frödén and Søchting – Synonym: *Caloplaca decipiens* (Arnold) Blomb. & Forssell

CALOPLACA Th. Fr.
CALOPLACA ALBOVARIEGATA (B. de Lesd.) Wetmore (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 20, 22, common, on monzogranite and gneiss in the Mojave Desert in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Eureka Peak, Pushwalla), Smith Water Canyon, Upper Juniper Flats, Wonderland of Rocks (Black Rock, Keys Ranch, Steve Canyon, Wall Street Canyon, Willow Hole), Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2006, p. 25, abundant, on granite on

Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

Caloplaca arenaria (Pers.) Müll. Arg. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, uncommon, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 22, on monzogranite in the Mojave in Joshua Tree National Park, at the following sites: Hidden Valley, Queen Mountain, Wonderland of Rocks (Wall Street Mill area), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 3 of 4 collection sites, on granite, thallis endolithic and barely present or sometimes missing, Sweeney Granite Mountains, San Bernardino County, CA) = **RUFOPLACA ARENARIA** (Pers.) Arup, Søchting & Frödén

CALOPLACA ATROALBA (Tuck.) Zahlbr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on limestone, Spring Mountains, Clark County, NV; --Knudsen, K. et al. 2013, pg. 22, rare, on granite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Berdoo Canyon), Ryan Mountain, Riverside and San Bernardino Counties, CA)

CALOPLACA CERINA (Ehrh. ex Hedwig) Th. Fr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on bark and lignum, Spring Mountains, Clark County, NV; --Knudsen, K. and S. Werth 2008, p. 16, rare, on decorticated juniper wood at 1588m, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

Caloplaca citrina (Hoffm.) Th. Fr. (--Knudsen, K. and S. Werth 2008, p. 16, rare, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, San Bernardino County, CA) = **FLAVOPLACA CITRINA** (Hoffm.) Arup, Frödén & Søchting

Caloplaca crenulatella (Nyl.) H. Olivier (--Knudsen, K., M. Harding and J. Hoines 2013,

p. 22, common, on monzogranite in the Mojave in Joshua Tree National Park, at the following sites: Hexie Mountains, hills near west entrance, Little San Bernardino Mountains (above Dillon Road, Eureka Peak, near Long Canyon, Pushwalla), Lost Horse Mountains, Malapai Hill, Pine City, Queen Valley, Ryan Mountain, Sheep's Pass, Upper and Lower Covington Flats, Wonderland of Rocks (Keys Ranch, Steve Canyon), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite in wash, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA) = XANTHOCARPIA CRENULATELLA (Nyl.) Frödén, Arup & Søchting

Caloplaca decipiens (Arnold) Blomb. & Forssell (--Knudsen, K., M. Harding and J. Hoines 2013, p. 22, on monzogranite and gneiss in the Mojave in Joshua Tree National Park, at the following sites: Hidden Valley, hills near west entrance, Little San Bernardino Mountains (Berdo Canyon), Ryan Mountain, Sheep's Pass, Smith Water Canyon, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. rare, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 29, rare, on basalt, Mojave National Preserve, San Bernardino County, CA) = CALOGAYA DECIPIENS (Arnold) Arup, Frödén & Søchting

CALOPLACA DURIETZII H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 23, common, on bark or wood, (especially old junipers) in Joshua Tree National Park, at

the following sites: Little San Bernardino Mountains (near Long Canyon), Ryan Mountain, Upper Juniper Flats, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on juniper wood and bark above 1,500m, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

CALOPLACA EPITHALLINA Lyngby (--Knudsen, K. and T. La Doux 2006, p. 25, common, on lichens on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

Caloplaca ferruginea (Hudson) Th. Fr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on bark, Spring Mountains, Clark County, NV) = BLASTENIA FERRUGINEA (Hudson) Th. Fr.

Caloplaca marmorata (Bagl.) Jatta (--Knudsen, K. and T. La Doux 2005, p. 105, rare, on soft granite in wash, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA) = XANTHOCARPIA MARMORATA A. Massal. & De Not.

Caloplaca nashii Nav.-Ros., Gaya & Hladun (--Knudsen, K., M. Harding and J. Hoines 2013, p. 23, common, on basalt, monzogranite, and gneiss in the Mojave in Joshua Tree National Park, at the following sites: Hidden Valley, Juniper Flats, Little San Bernardino Mountains (above Dillon Road, Berdo Canyon, Black Rock, Eureka Peak, Keys View, Pushwalla), Lost Horse Mountains, Malapai Hill (basalt and monzogranite), Queen Valley, Sheep's Pass, Skull Rock area, Squaw Tank, Wonderland of Rocks (Indian Cove, Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, abundant, on soft granite in washes, Keys

Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, common, on granite in drainages on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA) = *POLYCAULIONA NASHII* (Nav.-Ros., Gaya & Hladún) Arup, Frödén & Søchting

CALOPLACA PELLODELLA (Nyl.) Hasse (--Knudsen, K., M. Harding and J. Hoines 2013, p. 23) County, rare, on monzogranite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Berdoo Canyon), Upper Covington Flats, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA. Knudsen also reports in Knudsen, K., M. Harding and J. Hoines 2013, p. 24 that *C. pelloidella* has been collected in the Mojave National Preserve in the Clark Mountains and at 2528m from the top of San Gorgonio Mountain by NPS botanist Mitzi Harding (UCR Herbarium 2013); --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, on lava rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, common, on soft granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

CALOPLACA SAXICOLA (Hoffm.) Nordin (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, uncommon, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 24, on granite in Joshua Tree National Park (apothecia usually poorly developed, thallus lacking well developed margins), at the following sites: Juniper Flats, Lower and Upper Covington Flats, Wonderland of Rocks (near west entrance, Willow Hole), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 2 of 4 collection sites, on lava rock and rock, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 35, rare to locally common, on rock, Black Rock Road vicinity, Mojave Cnty., Northwestern AZ; --Knight, K. B.

et al. 2002, p. 29, common, on basalt, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 4, rare at 2 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

Caloplaca squamosa (B. de Lesd.) Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 24, common on monzogranite and gneiss in the Mojave in Joshua Tree National Park, at the following sites: Hexie Mountains, hills and open desert near north and west entrances to park, Little San Bernardino Mountains (Berdoo Canyon, Eureka Peak), Pinto Basin, Sheep's Pass, Wilson Canyon, Wonderland of Rocks (at Indian Cove), Riverside and San Bernardino Counties, CA) = *SQUAMULEA SQUAMOSA* (B. de Lesd.) Arup, Søchting & Frödén

Caloplaca subsoluta (Nyl.) Zahlbr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, rare, on bark, Spring Mountains, Clark County, NV) = *SQUAMULEA SUBSOLUTA* (Nyl.) Arup, Søchting & Frödén

Caloplaca trachyphylla (Tuck.) Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 24, rare on monzogranite and gneiss in Joshua Tree National Park at the following sites: Queen Mountain, Ryan Mountain, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA) = *XANTHOMENDOZA TRACHYPHYLLA* (Tuck.) Frödén, Arup & Søchting

Caloplaca variabilis (Pers.) Müll Arg. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 24, rare, on deteriorating granite and gneiss in Joshua Tree National Park, CA, from two sites in the Mojave Desert, Riverside and/or San Bernardino Counties, CA). Knudsen also notes that *C. variabilis* was collected in the Clark Mountains in the Mojave Desert on limestone, San Bernardino County, CA (UCR Herbarium 2015; Knudsen, K., M. Harding and J. Hoines

2013, p. 24) = PYRENODESMIA VARIABILIS A. Massal.

CANDELARIELLA Müll. Arg.

CANDELARIELLA ANTENNARIA Räsänen (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 14, 15, common, on bark and lignum, Spring Mountains, Clark County, NV; --Shrestha G. et al. 2012, p. 4, rare to common at 1 of 5 sites, on bark, Beaver Dam Slope, Washington County, UT)

CANDELARIELLA AURELLA (Hoffm.) Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 26, common, on basalt, gneiss and monzogranite in Joshua Tree National Park, at the following sites: Hexie Mountains, Juniper Flats, Little San Bernardino Mountains (above Dillon Road, Eureka Peak, Pushwalla), Lost Horse Mountains, Malapai Hill (on basalt) Skull Rock, Smith Water Canyon, Queen Mountain, Queen Valley, Upper Covington Flats, Wonderland of Rocks (Keys Ranch, Wall Street Mill), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on soft granite along washes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 4, rare at 1 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

CANDELARIELLA CITRINA B. de Lesd. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 9, 10, 15, rare, on rocks, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 26, common, on monzogranite and rarely on gneiss in the Mojave Desert in Joshua Tree National Park, at the following sites: Hidden Valley, Hexie Mountains, Juniper Flats, Little San Bernardino Mountains (Berdoo Canyon,

Eureka Peak, Pushwalla), Lost Horse Mountains, Lower Covington Flats, Malapai Hill (on monzogranite), Queen Mountain, Saddle Rock, Skull Rock area, Stirrup Tank, Wonderland of Rocks at the Wall Street Mill area near the west entrance, Riverside and San Bernardino Counties, CA)

Candelariella deflexa (Nyl.) Zahlbr. (--Jackson, H. et al. 2005, p. 35, rare on bark of Creosote shrubs, Black Rock Road vicinity, Mojave County, Northwestern AZ) = CANDELARIELLA ANTENNARIA Räsänen, most of what is reported as *C. deflexa* is actually *C. antennaria* according to Westberg as reported by Esslinger (Westberg 2007; Esslinger 2015)

CANDELARIELLA EFFLORESCENS R. C. Harris & W. R. Buck (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on lignum, Spring Mountains, Clark County, NV)

CANDELARIELLA ROSULANS (Müll. Arg.) Zahlbr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 26, on monzogranite and gneiss in Joshua Tree National Park, and found in the Mojave from only four sites: Wonderland of Rocks (Indian Cove, Keys Ranch), Ryan Mountain, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 4 of 4 collection sites, on granite and lava rock, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 35, common to abundant, on soil over rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 105, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 29, common, on basalt and soil over rock, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 1 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

CANDELARIELLA SPRAGUEI (Tuck.) Zahlbr.
(--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare on soil, Spring Mountains, Clark County, NV)

CANDELARIELLA VITELLINA (Hoffm.) Müll. Arg.
(--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on bark, rock, and soil, Spring Mountains, Clark County, NV; --Jackson, H. et al. 2005, p. 35, common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ)

CARBONEA (Hertel) Hertel

CARBONEA VORTICOSA (Flörke) Hertel (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV) –
Synonym: *Lecidea vorticos* (Flörke) Kőrber

CATAPYRENIUM Flotow

CATAPYRENIUM SQUAMELLUM (Nyl. ex Hasse) J. W. Thomson (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on soil, Spring Mountains, Clark County, NV)

CIRCINARIA Link

CIRCINARIA ARIDA Owe-Larsson. A. Nordin & Tibell (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV: -- Knudsen, K., M. Harding and J. Hoines 2013, p. 28, common, on basalt, granite, and gneiss “in general” in Joshua Tree, and found in the Mojave at the following sites: hills near west entrance, Juniper Flats, Little San Bernardino Mountains (Berdo Canyon, Pushwalla Pass), Malapai Hill (on granite and basalt), Pinto Mountains (Belle Mountain), Queen Valley, Sheep’s Pass, Skull Rock, Stirrup Tank, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 5, common at 1 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT) – Synonym: *Aspicilia desertorum*

CIRCINARIA CALCAREA (L.) A. Nordin, Savić & Tibell (--Proulx, M. W. and L. L. St. Clair 2013,

pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV)

Circinaria contorta (Hoffm.) A. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 28, common, on non-calcareous decaying rock in drainages and seeps in Joshua Tree National Park and found in the Mojave Desert at the following sites: 49 Palms Canyon (at palm oasis), Little San Bernardino Mountains (Berdo Canyon), Upper Covington Flats, Riverside and/or San Bernardino Counties, CA) = *ASPICILIA PELTASTICOIDES* (Hasse) K. Knudsen & Kocourk. (Knudsen and Kocourková 2013)

CIRCINARIA GIBBOSA (Ach.) A. Nordin, Savić & Tibell – Synonym: *Lecanora gibbosa* (Ach.) Nyl.

CLADONIA P. Browne

CLADONIA CARIOSA (Ach.) Sprengel (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on soil, Spring Mountains, Clark County, NV)

CLAVSCIDIUM Breuss

CLAVSCIDIUM LACINULATUM (Ach.) M. Prieto var. LACINULATUM (--Knudsen, K., M. Harding and J. Hoines 2013, p. 28, usually common, found in biological soil crusts in the Mojave in Joshua Tree National Park, often as the only lichen component/or with *Collema coccophorum*, at the following sites: Hexie Mountains, Little San Bernardino Mountains (above Geology Tour Road, Berdo Canyon), Lost Horse Mountains, Lost Horse Valley, Lower Covington Flats, Pleasant Valley, Queen Valley, Ryan Mountain, Saddle Rock, Skull Rock, Smith Water Canyon, Squaw Tank, Stirrup Tank, Wonderland of Rocks (Boy Scout Trail, Keys Ranch, near west entrance), Riverside and San Bernardino Counties, CA; All specimens were of the variety *lacinulatum*) – Synonym: *Placidium lacinulatum* (Ach.) Breuss

COLLEMA F. H. Wigg.

Collema callopismum A. Massal. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV) = SCYTINIUM CALLOPISMUM

Collema coccophorum Tuck. (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 28, 30, common, usually occurs on soil and sometimes on soft monzogranite in drainages and seeps, and frequently is the only lichen in biological soil crusts, less often found in crusts with *Clavascidium lacinulatum* in the Mojave in Joshua Tree National Park, at the following sites: 49 Palm Canyon, Covington Flats, Hexie Mountains, hills near west entrance, Little San Bernardino Mountains (above Dillon Road, Berdoo Canyon, Eureka Peak, Pushwalla Pass), Lost Horse Mountains, Ryan Mountain, Saddle Rock, Skull Rock, Smith Water Canyon, Stirrup Tank, Wonderland of Rocks (Indian Cove, Keys Ranch) Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on soil, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, abundant, on soil and soil over rock, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 29, rare, on soil over rock, Mojave National Preserve, San Bernardino County, CA) = ENCHYLIIUM COCCOPHORUM (Tuck.) Otálora, P. M. Jørg. & Wedin

Collema crispum (Hudson) F. H. Wigg. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock, Spring Mountains, Clark County, NV; --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 16, on decaying granite, infrequent on soil (often with *C. coccophorum*), Sweeney Granite Mountains and Sweeney Mountain Desert Research Center,

Eastern San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 29, rare, on soil over rock, Mojave National Preserve, San Bernardino County, CA) = BLENNOTHALLIA CRISPA

Collema cristatum (L.) F. H. Wigg. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock, Spring Mountains, Clark County, NV) = LATHAGRIUM CRISTATUM (L.) Otálora, P. M. Jørg. and Wedin

Collema fuscovirens (With.) J. R. Laundon (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock and soil, Spring Mountains, Clark County, NV; --Jackson, H. et al. 2005, p. 35, rare, on shaded vertical surfaces of rocks, Black Rock Road vicinity, Mojave County, Northwestern AZ) = LATHAGRIUM FUSCOVIRENS (With.) Otálora, P. M. Jørg. & Wedin

Collema polycarpon Hoffm. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock and soil, Spring Mountains, Clark County, NV) = ENCHYLIIUM POLYCARPON (Hoffm.) Otálora, P. M. Jørg. & Wedin

Collema tenax (Sw.) Ach. (--Jackson, H. et al. et al., 2005, p. 35, locally common, on open soil spaces in inter-shrub spaces, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. et al., 2002, p. 29, rare to locally common, on soil, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, common at 2 of 5 sites, on soil, Beaver Dam Slope, Washington County, UT) = ENCHYLIIUM TENAX (Sw.) Gray

CYPHELIUM Ach.

CYPHELIUM PINICOLA Tibell (--Knudsen, K., M. Harding and J. Hoines 2013, p. 30, rare, on wood of *Purshia tridentata* var. *glandulosa* in the Mojave Desert in Joshua Tree National Park from one site: Little San Bernardino Mountains from summit of Eureka Peak, Riverside County, CA)

CYPHELIUM TIGILLARE (Ach.) Ach. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 30, rare in Joshua Tree National Park, on bark and wood of a fallen juniper at Upper Covington Flats, San Bernardino County, CA)

DERMATOCARPON Eschw.

DERMATOCARPON AMERICANUM Vainio (--Knudsen, K., M. Harding and J. Hoines 2013, p. 30, common, on basalt, gneiss, and monzogranite in the Mojave Desert Joshua Tree National Park at the following sites: Hidden Valley, Juniper Flats, Little San Bernardino Mountains (Black Rock, Eureka Peak), Lost Horse Mountains, Lower and Upper Covington Flats, Malapai Hill (on basalt), Pine City, Queen Valley, Saddle Rock, Smith Water Canyon, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 25, abundant, on granite in drainages on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 5, rare at 2 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

DERMATOCARPON LORENZIANUM Anders (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock, Spring Mountains, Clark County, NV)

DERMATOCARPON LURIDUM (With.) J. R. Laundon (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, uncommon, on rock in seep areas, Spring Mountains, Clark County, NV)

DERMATOCARPON MINIATUM (L.) W. Mann (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, abundant, on rock and soil, Spring

Mountains, Clark County, NV; --Jackson, H. et al. et al., 2005, p. 35, rare to locally common on shaded, vertical surfaces of rocks, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. et al., 2002, p. 29, locally common, particularly on protected vertical rock surfaces beneath overhanging horizontal ledges, Mojave National Preserve, San Bernardino County, CA)

DERMATOCARPON RETICULATUM H. Magn. (--Doell, J. 1999, p. 9, found at 2 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

DERMATOCARPON VELLEREUM Zschacke (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 15, rare, on rock, Spring Mountains, Clark County, NV; Knight, K. B. et al. et al., 2002, p. 29, rare, on basalt, Mojave National Preserve, San Bernardino County, CA)

DIMELAENA Norman

DIMELAENA LICHENICOLA K. Knudsen, Sheard, Kocourk. & H. Mayrhofer (--Knudsen indicated that *D. lichenicola* is a new, lichenicolous species:

“Similar to *D. californica* but differing in longer conidia and the lack of a prothallus and well-developed plicate lobes.” (Knudsen, Sheard, Kacourkova and Mayrhofer 2013)

D. lichenicola was collected on 25 Nov. 2012 in the Mojave Desert in Joshua Tree National Park at: Upper Covington Flats, in a small un-named canyon, 34°00'51" N, 116°18'06" W, 1431 m, in a pinyon - juniper woodland, on *Dimelaena oreina* and *D. thysanota* growing on gneiss, San Bernardino County, CA)

DIMELAENA OREINA (Ach.) Norman (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, pp. 30, 31, common in higher elevations in

California, including the Mojave Desert in Joshua Tree National Park where it is found on basalt, gneiss, and granite at the following sites: Lost Horse Mountain, Malapai Hill (on basalt), Queen Mountain, ridge northeast of Quail Mountain, Upper Covington Flats, Riverside and San Bernardino Counties, CA. Knudsen feels that climate change may push this species higher in elevation or into being extinguished in some places in Joshua Tree National Park, CA (Knudsen, K. et al., 2013, pp. 30, 31) – Synonym: *Rinodina oreina* (Ach.) A. Massal.

DIMELAENA THYSANOTA (Tuck.) Hale and W. L. Culb. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 31, common in the mountains of California including in the Mojave Desert in Joshua Tree National Park, found on basalt, gneiss, and granite in at the following sites: Hidden Valley, Juniper Flats, Little San Bernardino Mountains (Pushwalla), Lost Horse Mountains (on basalt), Lost Horse Valley, Lower and Upper Covington Flats, Queen Mountain, Ryan Mountain, Smith Water Canyon, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 9, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 16, common on granite at higher elevations, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA) – Synonym: *Rinodina thysanota* Tuck.

DIPLOSCHISTES Norman

DIPLOSCHISTES ACTINOSTOMUS (Ach.) Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 31, rare, on monzogranite, in shade in Joshua Tree National Park from Wonderland of Rocks (Keys Ranch), San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite in shade, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

DIPLOSCHISTES SCRUPOSUS (Schreber) Norman (--Doell, J. 1999, p. 9, found at 1 of 4 collection

sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

DIPLOTOMMA Flotow

DIPLOTOMMA ALBOATRUM (Hoffm.) Flotow (--Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA) – Synonym: *Buellia alboatra* (Hoffm.) Th. Fr.

DIPLOTOMMA VENUSTUM (Körber) Körber (--Knudsen, K., M. Harding and J. Hoines 2013, p. 31, rare, on granite in the Mojave Desert in Joshua Tree National Park, found only at two collection sites: Pine City, Ryan Mountain, Riverside County, CA) – Synonym: *Buellia venusta* (Körber) Lettau

ENCHYLIUM (Ach.) Gray

ENCHYLIUM COCCOPHORUM (Tuck.) Otálora, P. M. Jørg. & Wedin – Synonym: *Collema coccophorum*

ENCHYLIUM POLYCARPON (Hoffm.) Otálora, P. M. Jørg. & Wedin – Synonym: *Collema polycarpon* Hoffm.

ENCHYLIUM TENAX (Sw.) Gray – Synonym: *Collema tenax*

ENDOCARPON Hedwig

ENDOCARPON PSEUDOSUBNITESCENS Breuss (--Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on soil, this represents a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

ENDOCARPON PUSILLUM Hedwig (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 31, 33 rare, on soil in cracks of monzogranite rock in the Mojave Desert in Joshua Tree National Park, known only from one collection site at Wonderland of Rocks (Rattlesnake Canyon), San Bernardino County, CA; --Doell, J. 1999, p. 9, found at 3 of 4 collection sites, on soil, moss, and

lava rock, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. et al., 2005, p. 35, rare, on open soil surfaces in inter-shrub spaces, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. et al., 2002, p. 29, rare, on soil over rock, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on soil over rock, Beaver Dam Slope, Washington County, UT)

FLAVOPLACA Arup, Søchting & Frödén
FLAVOPLACA CITRINA (Hoffm.) Arup, Frödén & Søchting – Synonym: *Caloplaca citrina* (Hoffm.) Th. Fr.

FULGENSIA A. Massal. & De Not.
Fulgensia bracteata (Hoffm.) Räsänen subsp. *bracteata* (--Jackson, H. et al. et al., 2005, p. 35, locally common on open soil surfaces in inter-shrub spaces, Black Rock Road vicinity, Northwestern AZ) = GYALOLECHIA BRACTEATA (Hoffm.) A. Massal. subsp. BRACTEATA

Fulgensia desertorum (Tomin) Poelt (--Doell, J. 1999, pp. 9, 10, found at 1 of 4 collection sites, partly on lava rock, or sandy soil with moss and *Endocarpon*, Sweeney Granite Mountains, San Bernardino County, CA; --Knight, K. B. et al. et al., 2002, p. 29, rare, on soil over rock, Mojave National Preserve, San Bernardino County, CA) = GYALOLECHIA DESERTORUM (Tomin) Søchting, Frödén and Arup

Fulgensia subbracteata (Nyl.) Poelt (--Knudsen, K., M. Harding and J. Hoines 2013, p. 33, rare in California, however it is locally abundant in one site in the Mojave in Joshua Tree National Park where a large population was found on soil over granite in Berdoo Canyon in the Little San Bernardino Mountains, Riverside County, CA)

GYALOLECHIA A. Massal.
GYALOLECHIA BRACTEATA (Hoffm.) A. Massal. subsp. BRACTEATA – Synonym: *Fulgensia bracteata* (Hoffm.) Räsänen subsp. Bracteata

GYALOLECHIA DESERTORUM (Tomin) Søchting, Frödén & Arup – Synonym: *Fulgensia desertorum* (Tomin) Poelt

GYALOLECHIA SUBBRACTEATA (Nyl.) Søchting, Frödén & Arup – Synonym: *Fulgensia subbracteata* (Nyl.) Poelt

HEPPIA Nägeli

HEPPIA ADGLUTINATA (Kremp.) A. Massal (--Knudsen, K., M. Harding and J. Hoines 2013, p. 33, is rare and found on fine soil over gneiss in Joshua Tree National Park, found only in Wilson Canyon in the transition zone between the Sonoran and Mojave Deserts at the base of the Pinto Mountains, Riverside County, CA)

HEPPIA DESPREAUXII (Mont.) Tuck. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 33, infrequent, found sterile and on soil in Joshua Tree National Park at the following sites: Hexie Mountains, Wonderland of Rocks (Indian Cove), Wilson Valley, Riverside and San Bernardino Counties, CA. In one collection found in the Hexie Mountains *H. desprauxii* is associated in a biological soil crust with a moss and *Collema coccophorum*)

HEPPIA LUTOSA (Ach.) Nyl. (--Doell, J. 1999, p. 10, found at 3 of 4 collection sites, on soil and lava rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knight, K. B. et al. et al., 2002, p. 29, rare to locally common, on soil over rock, Mojave National Preserve, San Bernardino County, CA)

HETEROPLACIDIUM Breuss

Heteroplacidium compactum (A. Massal.) Gueidan & Cl. Roux (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 33, 34, common in Southern California deserts, considered lichenicolous on lichens over non-calcareous rock in Joshua Tree National Park, it is found at the following sites: Hexie Mountains, Juniper Flats, Little San Bernardino Mountains (Black Rock,

Keys View, Pushwalla), Lower and Upper Covington Flats, Queen Valley, Ryan Mountain, Sheep's Pass, Skull Rock, Squaw Tank, Wonderland of Rocks (Indian Cove, Keys Ranch), Riverside and San Bernardino Counties, CA) = *VERRUCARIA COMPACTA* (A. Massal.) Jatta

HETEROPLACIDIUM TRANSMUTANS K. Knudsen, Breuss & Kocourk (--Knudsen, K., M. Harding and J. Hoines 2013, pp 33, 34, is found in the Mojave Desert in Joshua Tree National Park at the following locations: Cottonwood Mountains in Cottonwood Canyon and on west edge of Hexie Mountains at Squaw Tank, Riverside County, CA). Knudsen says *H. transmutans* is parasitic on *Acarospora socialis* in the Mojave Desert in California, as a juvenile until it develops its own lichenized thallus on granite, and is difficult to distinguish from *H. compactum* (Knudsen, Breuss and Kocourkova 2014, pp. 30, 31).

HYPERPHYSICIA Müll. Arg.

HYPERPHYSICIA ADGLUTINATA (Flörke) H. Mayrhofer & Poelt (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on rock, Spring Mountains, Clark County, NV)

LATHAGRIUM (Ach.) Gray

LATHAGRIUM CRISTATUM (L.) Otálora, P. M. Jørg. & Wedin – Synonym: *Collema cristatum* (L.) F. H. Wigg.

LATHAGRIUM FUSCOVIRENS (With.) Otálora, P. M. Jørg. & Wedin – Synonym: *Collema fuscovirens* (With.) J. R. Laundon

LECANIA A. Massal.

LECANIA ARIZONICA B. D. Ryan & van den Boom (--Knudsen, K., M. Harding and J. Hoines 2013, p. 34, rare, found on non calcareous rocks in shallow rocky washes in full sun in Joshua Tree National Park at the following sites: Little San Bernardino Mountains on slopes above Dillon Road, Lost Horse Mountains, Riverside County, CA)

LECANIA POLYCYCLA (Anzi) Lettau (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K. and T. La Doux 2005, p. 105, common, on granite in washes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

LECANORA Ach.

LECANORA ALBELLULA Nyl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on bark, Spring Mountains, Clark County, NV)

LECANORA ARGOPHOLIS (Ach.) Ach. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 34, found on calcareous and non-calcareous rocks in the Mojave in Joshua Tree National Park, locally abundant at only the Queen Mountain site, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 16, frequent on granite at higher elevations, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

Lecanora cinerea (L.) Sommerf. (--Hasse 1913, p. 88, collected by S. B. Parish in the San Bernardino Mountains, CA) = *ASPICILIA CINEREA* (L.) Körber

LECANORA CRENULATA Hooker (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on rock, Spring Mountains, Clark County, NV; --Shrestha G. et al. 2012, p.5, rare at 3 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

LECANORA Densa (Śliwa & Wetmore) Printzen (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on bark, Spring Mountains, Clark County, NV)

LECANORA DISPERSA (Pers.) Sommerf. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 10, 16, rare, on rock, Spring Mountains, Clark County, NV)

LECANORA FLOWERSIANA H. Magn. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 34, rare, on rock, in the Mojave Desert in Joshua Tree National Park and in Southern California “in general”, and found only on Queen Mountain, San Bernardino County, CA)

LECANORA GAROVAGLII (Körber) Zahlbr. subsp. GAROVAGLII (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, pp. 34, 36, frequent, on basalt, gneiss and granite in Joshua Tree National Park, and found within in the Mojave at the following sites: Hexie Mountains, Hidden Valley, Little San Bernardino Mountains (Berdo Canyon, Eureka Peak north slope), Malapai Hill (on basalt), Queen Valley, Ryan Mountain, Riverside and San Bernardino Mountains, CA; --Doell, J. 1999, p. 10, found at 2 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 16, common, on granite, but rarely fully developed in mixed saxicolous communities, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. et al., 2005, p. 36, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite on the north slope of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Knight, K. B. et al. et al., 2002, p. 29, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA)

Lecanora gibbosa (Ach.) Nyl. (--Hasse 1913, pp. 88, 89, on rock, possible transition zone or Mojave Desert lichen, at 1300m in the Tehachapi

Mountains, and in the San Gabriel Mountains, CA) = CIRCINARIA GIBBOSA (Ach.) A. Nordin, Savić & Tibell

LECANORA HAGENII (Ach.) Ach. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, uncommon, on bark, Spring Mountains, Clark County, NV)

LECANORA LAXA (Śliwa & Wetmore) Printzen (--Knudsen, K., M. Harding and J. Hoines 2013, p. 36, rare in Joshua Tree National Park, in this publication, Knudsen et al. (2013) confirm their previous report (Knudsen and La Doux 2006) that *L. laxa* was found on *Pinus monophylla* and *Purshia tridentata* var. *granulosa* bark, but only at the two collection sites on Eureka Peak, where it was found in 2006 in the Little San Bernardino Mountains, Riverside County, CA; -- Knudsen, K. and T. La Doux 2006, p. 26, this is the first reporting of *Lecanora laxa* in 2006: rare in Joshua Tree National Park, on *Pinus monophylla* and *Purshia tridentata* var. *granulosa* bark, at only two collection sites on Eureka Peak in the Little San Bernardino Mountains, Riverside and San Bernardino Counties, CA)

LECANORA MERIDIONALIS H. Magn. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on bark, Spring Mountains, Clark County, NV)

LECANORA MUGHICOLA Nyl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on lignum, Spring Mountains, Clark County, NV)

LECANORA MURALIS (Schreber) Rabenh. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 36, common, on basalt, gneiss, and monzogranite in the Mojave in Joshua Tree National Park at the following sites: Little San Bernardino Mountains (Berdo Canyon, Black Rock, hills near park west entrance, Keys View, Long Canyon, Pushwalla), Malapai Hill (on basalt), Queen Mountain, Ryan Mountain, Sheep's Pass, Wonderland of Rocks (Indian

Cove), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 10, found at 2 of 4 collection sites, no substrate given, (probably rock), Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. et al., 2005, p. 36, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. et al., 2002, p. 29, rare to locally common, on soil over rock, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 2 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT) – Synonym: *Lecanora saxicola* (Pollich) Ach.

LECANORA NOEDEGELII B. D. Ryan & T. H. Nash (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV)

LECANORA OREINOIDES (Körber) Hertel & Rambold (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV)

LECANORA PERCRENATA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 36, rare, on granite in Joshua Tree National Park, only in the Little San Bernardino Mountains at Berdoo Canyon, Riverside County, CA)

LECANORA PHAEDROPTHALMA Poelt var. PHAEDROPTHALMA (--Knight, K. B. et al. et al., 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA)

Lecanora rubina (Vill.) Ach. (--Hasse 1913, pp. 93, 94,), and in the San Gabriel and Tehachapi Mountains, CA) = RHIZOPLACA CHRYSOLEUCA (Sm.) Zopf

LECANORA SALIGNA (Schrader) Zahlbr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on lignum, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 37, common in the mountains of California, found on junipers and the dead wood of pines and oak in the Mojave in Joshua Tree National Park, at the following sites: Hidden Valley, Juniper Flats, Little San Bernardino Mountains (Eureka Peak), Lost Horse Valley, Upper Covington Flats, Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on decorticated juniper lignum above 1,500m, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

Lecanora saxicola (Pollich) Ach. (--Hasse 1913, p. 93, collected by S. B. Parish from rock in the San Bernardino Mountains, CA) = LECANORA MURALIS (Schreber) Rabenh.

LECANORA SIERRAE B. D. Ryan and T. H. Nash (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 36, 37, infrequent and found only at three sites in the Mojave, on granite and gneiss in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Eureka Peak), Lost Horse Mountains, Queen Valley, Riverside and San Bernardino Counties, CA)

LECANORA SYMMICTA (Ach.) Ach. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on bark, Spring Mountains, Clark County, NV)

LECANORA VALESIACA (Müll. Arg.) Stizenb. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; --Jackson, H. et al. et al., 2005, p. 36, rare, on rock, Black Rock Road vicinity, Northwestern AZ; --Shrestha G. et al. 2012, p. 5, rare at 3 of 5 sites, on rock, Beaver Dam Slope, Washington County, UT)

LECANORA VARIA (Hoffm.) Ach. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, uncommon, on bark, Spring Mountains, Clark County, NV)

LECIDEA Ach.

LECIDEA DECIPIENS (Hedwig) Ach. (--Hasse 1913, p. 46, 47, on soil, collected by S. B. Parish in San Bernardino Mountains, CA) = PSORA DECIPIENS (Hedwig) Hoffm.

LECIDEA DIDUCENS Nyl. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 37, locally abundant in high elevations in the Little San Bernardino Mountains, found on granite in Joshua Tree National Park, where it is collected only from the Little San Bernardino Mountains (Berdoo Canyon), Riverside County, CA)

Lecidea fumosa (Hoffm.) Ach. (--Hasse 1913, p. 387, 38, on granite in San Gabriel Mountains, CA) = LECIDEA FUSCOATRA Nyl.

LECIDEA FUSCOATRA Nyl. – Synonym: *Lecidea fumosa* (Hoffm.) Ach.

Lecidea goniophila (Floerke) Schaer. (--Hasse 1913, on at 1500m in the Mojave transition zone along Big Rock Creek at Shoemaker's Ranch at the northern base of the San Gabriel Mountains, CA) = LECIDELLA ANOMALOIDES (A. Massal.) Hertel & H. Kilius

LECIDEA HASSEI Zahlbr. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 37, common, on granite and monzogranite in the Mojave in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Black, Rock, Keys View, Long Canyon), Lost Horse Mountains, Pine City, Sheep's Pass, Squaw Tank, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 17, rare, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

LECIDEA LABORIOSA Müll. Arg. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, pp. 37, 39, frequent, on granite, in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (Berdoo Canyon, Black Rock, Eureka Peak, Keys View), Queen Valley, Sheep's Pass, Smith Water Canyon, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 105, common, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

LECIDEA LEPRARIOIDES Tønsberg (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on lignum, Spring Mountains, Clark County, NV)

LECIDEA MANNII Tuck. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 39, infrequent in California, but locally abundant when found, occurs on granite in the Mojave Desert in Joshua Tree National Park, 2 collections found at the following location: Upper Covington Flats, San Bernardino County, CA)

LECIDEA TESSELLATA Flörke (--Knudsen, K., M. Harding and J. Hoines 2013, p. 39, common in Southern California mountains, on granite from a single collection in Joshua Tree National Park, at Juniper Flats, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite at higher elevations, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. et al., 2005, p. 36, locally common, on

rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. et al., 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA)

Lecidea vorticosa (Flörke) Körber (--Hasse 1913, on disintegrating granite in the Mojave transition zone at 1600m, along Big Rock Creek at Shoemakers Ranch, and the northeastern desert base of the San Gabriel Mountains, CA) = CARBONEA VORTICOSA (Flörke) Hertel

LECIDELLA Körber

LECIDELLA ANOMALOIDES (A. Massal.) Hertel & H. Kiliias – Synonym: *Lecidea goniophila* (Floerke) Schaer.

LECIDELLA CARPATHICA Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, uncommon, on rock, Spring Mountains, Clark County, NV; --Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

LECIDELLA EUPHOREA (Flörke) Hertel (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on bark and lignum, Spring Mountains, Clark County, NV)

LECIDELLA PATAVINA (A. Massal.) Knoph and Leuckert (--Knudsen, K., M. Harding and J. Hoines 2013, p. 39, on monzogranite, found in Joshua Tree National Park with the thallus often missing or badly eroded, at the following sites: Hexie Mountains, Hidden Valley, Queen Mountains, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA)

LECIDELLA STIGMATEA (Ach.) Hertel and Leuckert (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, uncommon, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 39, infrequent, on monzogranite in the Mojave Desert in Joshua Tree National Park, with the thallus often missing or poorly

eroded, at the following sites: Little San Bernardino Mountains (Eureka Peak), Queen Mountain, Ryan Mountain, Saddle Rock, Smith Water Canyon, Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

LEPRARIA Ach.

LEPRARIA NEGLECTA Nyl. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 40, of the six collections made in Joshua Tree National Park, one was abundant and the others locally sparse, and all were found on granite and soil at the following sites: Little San Bernardino Mountains (Eureka Peak), Lower and Upper Covington Flats, ridge northeast of Quail Mountain, Wonderland of Rocks at Keys Ranch and Willow Hole, Riverside and San Bernardino Counties, CA)

LEPRARIA VOUAUXII (Hue) R. C. Harris (--Knudsen, K., M. Harding and J. Hoines 2013, p. 40, locally abundant and on soil and moss in Joshua Tree National Park, only at Wonderland of Rocks in Wall Street Canon), San Bernardino County, CA)

LEPROCAULON Nyl. ex Lamy

LEPROCAULON ADHAERENS (K. Knudsen, Elix & Lendemer) Lendemer & Hodkinson (--Knudsen, K., M. Harding and J. Hoines 2013, pp. 39, 40, populations were small, on granite and isolated in crevices and below underhangs in the Mojave Desert in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains

(Upper Long Canyon), Wonderland of Rocks (Indian Cove, Rattlesnake Canyon), San Bernardino County, CA)

LEPTOCHIDIUM M. Choisy

LEPTOCHIDIUM ALBOCILIAM (Desm.) M. Choisy (–Knudsen, K., M. Harding and J. Hoines 2013, p. 40, often locally abundant in Southern California, on moss and soil over monzogranite in Joshua Tree National Park, at only two sites: Upper Covington Flats and Wonderland of Rocks in Indian Cove, San Bernardino County, CA)

LEPTOGIUM (Ach.) Gray

LEPTOGIUM ARSENEI Sierk (–Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite in drainage on the north slope of Eureka Peak, Joshua Tree National Park, San Bernardino County, CA)

Leptogium tenuissimum (Dicks.) Körber (–Knudsen, K., M. and J. Hoines 2013, pp. 40, 41, usually on rock, moss or soil, rare in Joshua Tree National Park, found only at Upper Covington Flats, San Bernardino County, CA) = SCYTIINIUM TENUISSIMUM (Dickson) Otálora, P. M. Jørg. & Wedin

LICHINELLA Nyl.

LICHINELLA GRANULOSA M. Schultz (–Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, this represents a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

LICHINELLA NIGRITELLA (Lettau) P. P. Moreno & Egea (–Proulx, M. W. and L. L. St. Clair 2013 Spring Mountains; – Knudsen, K., M. Harding and J. Hoines 2013, p. 41, Knudsen says this is the second most common cyanolichen in JTNP, common, on gneiss and monzogranite in Joshua Tree National Park, at the following sites: Hidden Valley, Juniper Flats, Little San Bernardino Mountains (Berdoo Canyon, Pushwalla), Lost Horse Valley, Lower Covington Flats, Pine City, Pinto Basin, Skull Rock, Smith Water Canyon, Squaw Tank, Wilson Canyon,

Wonderland of Rocks (Indian Cove, Keys Ranch), Riverside and San Bernardino Counties, CA; –Doell, J. 1999, p. 10, found at 2 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; –Knudsen, K. and S. Werth 2008, p. 17, common on granite in shaded wash, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; –Knudsen, K. and T. La Doux 2005, p. 105, rare, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; –Knight, K. B. et al. 2002, p. 30, common to locally abundant, on basalt, Mojave National Preserve, San Bernardino County, CA; –Shrestha G. et al. 2012, p. 5, common at 2 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

LICHINELLA STIPATULA Nyl. (–Knudsen, K. and S. Werth 2008, p. 17, frequent on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

LOBOTHALLIA (Clauzade & Cl. Roux) Hafellner

LOBOTHALLIA ALPHOPLACA (Wahlenb.) Hafellner (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark County, NV; –Doell, J. 1999, p. 10, found at 3 of 4 collection sites, on granite and lava rock, Sweeney Granite Mountains, San Bernardino County, CA; –Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; –Jackson, H. et al. et al., 2005, p. 36, rare to locally common on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; –Knudsen, K. T. La Doux, 2005, p. 105, abundant on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; –Knudsen, K. T. La Doux, 2006, p. 26, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside & San Bernardino Counties, CA)

LOBOTHALLIA PRAERADIOSA (Nyl.) Hafellner (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, 17, rare, on rock, Spring Mountains, Clark County, NV; –Knudsen, K., M. Harding and J. Hoines 2013, p. 41, common, on basalt, gneiss, and monzogranite in Joshua Tree National Park, at the following sites: Hidden Valley, hills near west and north entrance, Juniper Flats, Little San Bernardino Mountains (Berdoo Canyon, Eureka Peak, Pushwalla), Lost Horse Mountains, Lost Horse Valley, Lower and Upper Covington Flats, Malapai Hill (on monzogranite and basalt), Queen Mountain, Queen Valley, Ryan Mountain, Skull Rock, Squaw Tank, Stirrup Tank, Wonderland of Rocks (Indian Cove, near west entrance, Keys Ranch), Riverside and San Bernardino Counties, CA; –Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on lava rock, Sweeney Granite Mountains, San Bernardino County, CA; –Knudsen, K. S. Werth 2008, p. 17, infrequent on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; –Jackson, H. et al. 2005, p. 36, rare, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; –Knight, K. B. et al. 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA; –Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite on the east slope of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; –Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

MELANELIA Essl.

Melanelia tominii (Oxner) Essl. (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, rare, on rock, Spring Mountains, Clark Cnty, NV; –Knudsen, K., M. Harding and J. Hoines 2013, p. 41, scattered in Southern California, on granite in Joshua Tree National Park, at the following sites: Hidden Valley, Queen Mountain, Smith Water Canyon, Upper Covington Flats, Wonderland of Rocks (Keys Ranch, Wall Street Mill, Willow

Hole), Riverside and San Bernardino Counties, CA; –Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA) = MONTANELIA TOMINII (Oxner) Divakar, A. Crespo, Wedin & Essl.

MELANOHALEA O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch
 MELANOHALEA ELEGANTULA (Zahlbr.) O. Blanco et al., (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 17, uncommon, on bark and rock, Spring Mountains, Clark County, NV; –Knudsen, K. and S. Werth 2008, p. 17, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; –Knudsen, K. and T. La Doux 2005, p. 106, rare, on shaded vertical granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

MELANOHALEA EXASPERATULA (Nyl.) O. Blanco et al., (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 17, uncommon, on bark, Spring Mountains, Clark County, NV)

MELANOHALEA SUBELEGANTULA (Essl.) O. Blanco et al., (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 17, rare, on bark, Spring Mountains, Clark County, NV)

MELANOHALEA SUBOLIVACEA (Nyl.) O. Blanco et al., (–Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 17, abundant, on bark, Spring Mountains, Clark County, NV; –Knudsen, K. and T. La Doux 2006, p. 26, uncommon, on bark of *Pinus monophylla* on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

MIRIQUIDICA Hertel & Rambold

MIRIQUIDICA SCOTOPHOLIS (Tuck.) B. D. Ryan & Timdal (–Knudsen, K., M. Harding and J. Hoines 2013, p. 41, frequent in southern and central California, on granite in Joshua Tree National Park, from the following sites: Hidden Valley,

Little San Bernardino Mountains (Black rock, Long Canyon area), Lower and Upper Covington Flats, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, infrequent, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

MONTANELIA Divakar, A. Crespo, Wedin & Essl.

MONTANELIA TOMINII (Oxner) Divakar, A. Crespo, Wedin & Essl. – Synonym: *Melanelia tominii* (Oxner) Essl.

MYRIOSPORA Nägeli ex Uloth

MYRIOSPORA SMARAGDULA (Wahlenb. ex Ach.) K. Knudsen and L. Arcadia – Synonyms: *Silobia smaragdula* (Wahlenb.) M. Westb. & Wedin, and *A. smaragdula* (Wahlenb.) A. Massal.

NEOFUSCELIA Essl.

Neofuscelia loxodes (Nyl.) Essl. (--Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA) = **XANTHOPERMELIA LOXODES** (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch

PARMELIOPSIS Nyl.

PARMELIOPSIS AMBIGUA (Wulfen) Nyl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 17, rare, on lignum, Spring Mountains, Clark County, NV)

PELTIGERA Willd.

PELTIGERA RUFESCENS (Weiss) Humb. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on moss, bark, Spring Mountains, Clark County, NV; --Knudsen, K. and S. Werth 2008, p. 17, rare, on moss, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

PELTULA Nyl.

PELTULA BOLANDERI (Tuck.) Wetmore (--Knudsen, K., M. Harding and J. Hoines 2013, p. 43, widespread in California but Knudsen says *P. bolanderi* is often misidentified as *P. euploca*, found on monzogranite and gneiss in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Berdo Canyon, along Geology Tour Road), Malapai Hill on granite, Riverside County, CA)

PELTULA EUPLOCA (Ach.) Poelt ex Ozenda & Clauzade (--Knudsen, K., M. Harding and J. Hoines 2013, p. 43 common in California, on granite in Joshua Tree National Park, at the following sites: 49 Palm Canyon, hills near the north entrance, Juniper Flats, Smith Water Canyon, Stirrup Tank, Upper Covington Flats, Wonderland of Rocks (Indian Cove, Keys Ranch, near the west entrance, Rattlesnake Canyon, Wall Street Mill), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 10, found at 3 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common, on granite in drainages and washes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, common, on vertical granite surfaces flushed by storm water, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare, on basalt, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PELTULA OBSCURANS (Nyl.) Gyelnik var.

OBSCURANS (--Doell, J. 1999, p. 10, found at all 4 collection sites, on soil, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, locally common,

on soil, Black Rock Road vicinity, Mojave County, Northwestern AZ)

PELTULA OBSCURANS var. *DESERTICOLA* (Zahlbr.) Wetmore (--Knudsen, K., M. Harding and J. Hoines 2013, p. 43, infrequent in Southern California, on monzogranite and gneiss in Joshua Tree National Park, at the following sites: Hidden Valley, Little San Bernardino Mountains (along Geology Tour Road), Stirrup Tank, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PELTULA OBSCURANS var. *HASSEI* (Zahlbr.) Wetmore (--Knudsen, K., M. Harding and J. Hoines 2013, p. 43, common in Southern California, on gneiss and granite in Joshua Tree in National Park, at the following sites: Stirrup Tank, Wonderland of Rocks at Indian Cove and Rattlesnake Canyon, Riverside and San Bernardino Counties, CA; --Knight, K. B. et al. 2002, p. 30, locally common, on soil above basalt flow, Mojave National Preserve, San Bernardino County, CA)

PELTULA OMPHALIZA (Nyl.) Wetmore (--Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

PELTULA PATELLATA (Bagl.) Swinscow & Krog (--Knudsen, K., M. Harding and J. Hoines 2013, p. 43, found in biological soil crusts in Joshua Tree National Park at Queen Valley, San Bernardino County, CA)

PELTULA RICHARDSII (Herre) Wetmore (--Knudsen, K., M. Harding and J. Hoines 2013, p. 44, infrequent in California deserts and found in biological soil crust in Joshua Tree National Park at the following sites: Hexie Mountains, near north entrance, Wonderland of Rocks at Wall Street Mill, Riverside and San Bernardino Counties, CA)

PHAEOPHYSCIA Moberg

PHAEOPHYSCIA HIRSUTA (Mereschk.) Essl. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 44, naturally rare in Joshua Tree National Park, at only Upper Covington Flats, San Bernardino County, CA)

PHAEOPHYSCIA KAIRAMOI (Vainio) Moberg (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on soil, Spring Mountains, Clark County, NV; --Jackson, H. et al. 2005, p. 36, rare, on soil over rock, found only on shaded vertical surfaces, Black Rock Road vicinity, Mojave County, Northwestern AZ)

PHAEOPHYSCIA NIGRICANS (Flörke) Moberg (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on moss and bark, Spring Mountains, Clark County, NV)

PHAEOPHYSCIA ORBICULARIS (Necker) Moberg (--Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite in drainages on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

PHAEOPHYSCIA SCIASTRA (Ach.) Moberg (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 44, frequent, on gneiss and granite in Joshua Tree National Park, at the following sites: Hidden Valley, hills near north entrance, Little San Bernardino Mountains (Berdo Canyon, Eureka Peak, Geology Tour Road), Malapai Hill (on monzogranite), Upper Covington Flats, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on soft granite in washes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, common, on granite on

Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

PHYSCIA (Schreber) Michaux

PHYSCIA ADSCENDENS (Fr.) H. Olivier (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12,17, rare, on bark and lignum, Spring Mountains, Clark County, NV)

PHYSCIA BIZIANA (A. Massal.) Zahlbr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on bark, rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 44, common, on gneiss and granite in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (Berdo Canyon, Eureka Peak, Pushwalla), Lost Horse Mountains, Ryan Mountain, Saddle Rock, Skull Rock, Stirrup Tank, Upper Covington Flats, Wonderland of Rocks (Keys Ranch, Wall Street Mill), Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite in drainages and mixed with *P. dimidiata* on the north slope of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

PHYSCIA CAESIA (Hoffm.) Hampe ex Fűrnr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, uncommon, on rock, Spring Mountains, Clark County, NV; --Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, rare on shaded vertical surfaces of rocks, Black Rock Road vicinity, Mojave County, Northwestern AZ)

PHYSCIA DIMIDIATA (Arnold) Nyl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on bark, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 44, common on granite and juniper wood in

Joshua Tree National Park, often growing on juniper wood at the base of old trees, at the following sites: Hidden Valley, hills near west entrance, Juniper Flats, Little San Bernardino Mountains (Berdo Canyon, Eureka Peak, Inspiration Peak, Pushwalla), Lower and Upper Covington Flats, Queen Valley, Ryan Mountain, Sheep's Pass, Smith Water Canyon, Skull Rock, Split Rock, Stirrup Tank, Queen Valley, Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite on north slope, mixed with *P. biziana*, Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

PHYSCIA DUBIA (Hoffm.) Lettau (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, common, on bark, lignum, rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013v, p. 45, infrequent in Southern California, on granite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Pushwalla), Saddle Rock, Upper Covington Flats, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, frequent on granite in washes on north slopes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, Eastern San Bernardino County, CA)

PHYSCIA PHAEA (Tuck) J. W. Thomson (--Doell, J. 1999, p. 10, found at 2 the 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

PHYSCIA STELLARIS (L.) Nyl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, abundant, on bark, lignum, Spring Mountains, Clark County, NV; --Shrestha G. et al. 2012, p. 5, rare to common at

1 of 5 sites, on bark, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PHYSCIA TENELLA (Scop.) DC. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, rare, on bark, Spring Mountains, Clark County, NV)

PHYSCIA TRIBACIA (Ach.) Nyl. (--Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA)

PHYSCIELLA Essl.

PHYSCIELLA CHLOANTHA (Ach.) Essl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 17, 18, common, on bark, lignum, and rock, Spring Mountains, Clark County, NV; --Knight, K. B. et al. 2002, p. 30, rare to locally common, on Blackbrush lignum (*Coleogyne ramosissima*) at Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, common to abundant at 1 of 5 sites, on bark, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PHYSCONIA Poelt

PHYSCONIA ELEGANTULA Essl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18 rare, on soil over rock, Spring Mountains, Clark County, NV)

PHYSCONIA ISIDIIGERA (Zahlbr.) Essl. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on moss over rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 45, common in Southern California, on granite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Eureka Peak), Lower and Upper Covington Flat, Riverside and San Bernardino Counties; --Knudsen, K. and S. Werth 2008, p. 17, infrequent, on decorticated wood and granite above 1558m, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

PHYSCONIA MUSCIGENA (Ach.) Poelt. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 45, on granite and moss in Joshua Tree National Park, only at Wonderland of Rocks at Indian Cove, San Bernardino County, CA)

PLACIDIUM A. Massal.

PLACIDIUM ACAROSPOROIDES (Zahlbr.) Breuss (--Knudsen, K., M. Harding and J. Hoines 2013, p. 45, frequent, on monzogranite in Joshua Tree National Park, at the following sites: Juniper Flats, Skull Rock, Stirrup Tank, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare, on basalt, Mojave National Preserve, San Bernardino County, CA)

PLACIDIUM ANDICOLA (Breuss) Breuss (--Knudsen, K., M. Harding and J. Hoines 2013, p. 45, rare in Southern California, though Knudsen says it may be undercollected, on soil in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (above Dillon Road, Black Rock), Wonderland of Rocks near the west entrance, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 10, found at 1 of 4 collection sites, on soil, Sweeney Granite Mountains, San Bernardino County, CA)

Placidium lacinulatum (Ach.) Breuss (--Doell, J. 1999, p. 11, found at all 4 collections sites, on soil and lava flow, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on soil, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, on soil, alone or in crust communities, mostly sterile, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, common at 2 of 5 sites, on soil, Mojave Desert, Beaver Dam Slope, Washington

County, UT) = *CLAVASCIDIUM LACINULATUM* (Ach.) Breuss

PLACIDIUM SQUAMULOSUM (Ach.) Breuss
 (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, uncommon, on soil, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, pp. 45, 46, on soil and also on deteriorating monzogranite in Joshua Tree National Park, at the following sites: Hills near west entrance, Little San Bernardino Mountains (above Dillon Road, Berdoo Canyon), Wonderland of Rocks at Indian Cove, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at all 4 collection sites, on soil, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on soil, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, locally common, on soil over rock or on open soil surfaces in inter-shrub spaces, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. 2002, p. 30, locally common, on soil over rock, Mojave National Preserve, San Bernardino County, CA)

PLACOCARPUS Trevisan

PLACOCARPUS AMERICANUS K. Knudsen, Breuss & Kocourk (--Knudsen, K., M. Harding and J. Hoines 2013, p. 46, *Placocarpus americanus* was described by Knudsen et al., 2009 from a collection from the Santa Monica Mountains in Southern California and was also collected in Arizona (Kocourková et al., 2012). According to Knudsen et al., (2013) *P. americanus* is lichenicolous, starting as a juvenile parasite on *Lecanora muralis* (rarely on *Rhizoplaca chrysoleuca* and *L. garovaglii*) eventually developing an independent gray thallus. Sometimes all that is evident on the host lichen are perithecia. It is frequent though often poorly developed. Found in the Joshua Tree National Park at the following site: Little San Bernardino

Mountains in Berdoo Canyon, Riverside County, CA)

PLACOPYRENIUM Breuss

PLACOPYRENIUM FUSCELLUM (Turner) Gueidan & Cl. Roux – Synonym: *Verrucaria fuscella* (Turner) Winch

PLACOPYRENIUM NOXIUM Breuss (--Knudsen, K. and T. La Doux 2005, p. 106, rare, lichenicolous on *Staurothele areolata*, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

PLACOPYRENIUM STANFORDII (Herre) K. Knudsen (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12 & 18, rare, on rock, Spring Mountains, Clark County, NV; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PLACYNTHIUM (Ach.) Gray

PLACYNTHIUM NIGRUM (Hudson) Gray (--Knudsen, K. M. Harding, and J. Hoines 2013, p. 46, rare, on monzogranite rock in Joshua Tree National Park, only at Wonderland of Rocks at Indian Cove, Riverside and San Bernardino Counties, CA)

PLEOPSISIDIUM Körber

PLEOPSISIDIUM CHLOROPHANUM (Wahlenb.) Zopf (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on granite, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 36, common to abundant, on vertical rock surfaces, Black Rock Road vicinity, Mojave County, Northwestern AZ) – Synonym: *Acarospora chlorophana* (Wahlenb.) A. Massal.

PLEOPSISIDIUM FLAVUM (Bellardi) Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 46, on basalt, gneiss, and granite in Joshua Tree National Park, at the following sites: Lost Horse Mountains (basalt, gneiss), Malapai Hill (basalt),

Queen Mountain, ridge northeast of Quail Mountain, Upper Covington Flats, Riverside and San Bernardino Counties, CA; --Jackson, H. et al. 2005, p. 36, locally common, on rock, Black Rock Road vicinity, Mojave County,

Northwestern AZ; --Knight, K. B. et al. 2002, p. 30, common to abundant, on vertical basalt surfaces, Mojave National Preserve, San Bernardino County, CA)

POLYCAULIONA Hue

POLYCAULIONA NASHII (Nav.-Ros., Gaya & Hladún) Arup, Frödén & Søchting – Synonym: *Caloplaca nashii* Nav.-Ros., Gaya & Hladun

POLYSPORINA Vězda

POLYSPORINA GYROCARPA (H. Magn.) N. S. Golubk. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 46, most likely frequent in the Mojave Desert in Joshua Tree National Park (as Knudsen reports 10 collections), found on monzogranite in Joshua Tree National Park, at the following sites: Hidden Valley, hills near west entrance, Little San Bernardino Mountains, Malapai Hill (monzogranite), Lower and Upper Covington Flats, Riverside and San Bernardino Counties, CA)

POLYSPORINA SIMPLEX (Taylor) Vězda (--Knudsen, K., M. Harding and J. Hoines 2013, p. 48, on gneiss and granite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Berdo Canyon, Eureka Peak, Long Canyon), Lost Horse Mountains, Riverside County, CA; --Doell, J. 1999, p. 11, found at 1 of the 4 collections sites, often in rock crevices, Sweeney Granite Mountains, San Bernardino County, CA) – Synonym: *Biatorella simplex* (Taylor) Branth & Roestrup

POLYSPORINA URCEOLATA (Anzi) Brodo (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on rock, Spring Mountains, Clark County, NV)

PSORA Hoffm.

PSORA CEREBRIFORMIS W. A. Weber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on soil, Spring Mountains, Clark County, NV; --Jackson, H. et al. 2005, p. 36, rare, on open soil surfaces in inter-shrub spaces, Black Rock Road vicinity, Mojave County, Northwestern AZ)
PSORA CRENATA (Taylor) Reinke (--Jackson, H. et al. 2005, p. 36, locally common to abundant, on soil surfaces in upper rocky areas, Black Rock Road vicinity, Mojave County, Northwestern AZ)

PSORA DECIPIENS (Hedwig) Hoffm. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 48, on soil (often alkaline), frequent in southern CA, but not locally abundant in Joshua Tree National Park, at the following site: Wonderland of Rocks (Keys Ranch), San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on soil, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, locally common to abundant, on soil surfaces in upper rocky areas and at gypsiferous site, Black Rock Road vicinity, Mojave Cnty., Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 106, rare, part of a single soil crust, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, common at 1 of 5 sites, on soil, Mojave Desert, Beaver Dam Slope, Washington County, UT) – Synonym: *Lecidea decipiens* (Hedwig) Ach.

PSORA GLOBIFERA (Ach.) A. Massal. (--Doell, J. 1999, p. 11, found at 3 of 4 collection sites, on rock and soil, Sweeney Granite Mountains, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare, on soil/moss over basalt, Mojave National Preserve, San Bernardino County, CA)

PSORA HIMALAYANA (Church. Bab.) Timdal (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on soil, Spring Mountains, Clark County, NV)

PSORA LURIDELLA (Tuck.) Fink (--Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite and soil over rock on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

PSORA RUSSELLII (Tuck.) A. Schneider (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on soil,

Sweeney Granite Mountains, San Bernardino County, CA)

PSORA TUCKERMANII R. A. Anderson ex Timdal (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, abundant, on soil and rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 48, common, on gneiss and monzogranite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (above Geology Tour Road, Berdoo Canyon, Eureka Peak, Pushwalla), Lost Horse Mountains, Wonderland of Rocks (Indian Cove, Keys Ranch, near west entrance, Rattlesnake Canyon), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common, on decaying granite in wash, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, rare to locally common, on soil, and soil over rock, in upper rocky area, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare to locally common, on soil over rock, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 1 of 5 sites, on soil, Mojave Desert, Beaver Dam Slope, Washington County, UT)

PSOROTICHIA A. Massal.

PSOROTICHIA HASSEI Fink ex J. Hedrick (--Knudsen, K., M. Harding and J. Hoines 2013, p. 48, rare, on granite in Joshua Tree National

Park, found only at Lower Covington Flats, Riverside and San Bernardino Counties, CA)

PSOROTICHIA MONTINII (A. Massal.) Forssell (--Knudsen, K., M. Harding and J. Hoines 2013, p. 48, infrequent, on granite in Joshua Tree National Park, at the following sites: Hidden Valley, Little San Bernardino Mountains (Berdoo Canyon), mountains near north entrance, Riverside and San Bernardino Counties, CA)

PYRENODESMIA A. Massal.

PYRENODESMIA VARIABILIS (Per.) A. Massal. –
Synonym: *Caloplaca variabilis* (Pers.) Müll Arg.

RAMONIA Stizenb.

RAMONIA GYALECTIFORMIS (Zahlbr.) Vězda. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 49, on monzogranite in Joshua Tree National Park, at the following sites: Ryan Mountain, west entrance, Wonderland of Rocks at Wall Street Mill area, San Bernardino County, CA)

RHIZOCARPON Ramond ex DC.

RHIZOCARPON DISPORUM (Nageli ex Hepp) Müll. Arg. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 49, frequent, on granite in Joshua Tree National Park, at the following sites: Hidden Valley, Little San Bernardino Mountains (Pushwalla), Lower and Upper Covington Flats, Queen Mountain, Smith Water Canyon, Wonderland of Rocks (Wall Street Mill), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite slopes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino Cnty, CA; --Knudsen, K. and T. La Doux 2006, p. 26, rare, drainage north slope of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA --Knight, K. B. et al. 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino Cnty, CA)

RHIZOCARPON GEMINATUM Körb. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 49, on granite

in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Eureka Peak), Lower Covington Flats, Wonderland of Rocks at Keys Ranch and Willow Hole, Riverside and San Bernardino Counties, CA; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

RHIZOPLACA Zopf

RHIZOPLACA CHRYSOLEUCA (Sm.) Zopf (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, found at 2 of 4 collection sites, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 49-51, on basalt, gneiss, and granite in Joshua Tree National Park, at the following sites: Hills near north entrance, Little San Bernardino Mountains (Eureka Peak, Pushwalla), Lost Horse Mountains, Malapai Hill (basalt), ridge northeast of Quail Mountain, Ryan Mountain, Sheep's Pass, Queen Mountain, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at 2 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA) – Synonym: *Lecanora rubina* (Vill.) Ach.

RHIZOPLACA MELANOPHTHALMA (DC.) Leuckert & Poelt (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, uncommon, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 51, naturally rare on non-calcareous rock in Joshua Tree National Park, only found at the ridge northeast of Quail Mountain, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on rock, in Sweeney Granite Mountains, Eastern San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, locally common, on basalt, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, common at 2 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

RHIZOPLACA PELTATA (Ramond) Leuckert & Poelt (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K. and S. Werth 2008, p. 17, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

RHIZOPLACA SUBDISCREPANS (Nyl.) R. Sant. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 51, rare, on non-calcareous rock in Joshua Tree National Park, at only the Little San Bernardino Mountains (Eureka Peak), Riverside County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite, on one north-facing slope outcrop near the summit of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

RINODINA (Ach.) Gray

RINODINA CAPENSIS Hampe (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on lignum, Spring Mountains, Clark County, NV)

RINODINA CONFRAGOSA (Ach.) Körber (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

RINODINA CONRADII Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 18, rare, on rock, Spring Mountains, Clark County, NV)

RINODINA ENDOSPORA Sheard (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on lignum, Spring Mountains, Clark County, NV)

RINODINA JUNIPERINA Sheard (--Knudsen, K., M. Harding and J. Hoines 2013, p. 51, rare, on

juniper in Joshua Tree National Park, at the following sites: Ryan Mountain, Lost Horse Valley, Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 17, common, on juniper bark above 1,500m, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

RINODINA LOBULATA H. Mayrhofer & Sheard (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, uncommon, on bark, Spring Mountains, Clark County, NV)

Rinodina oreina (Ach.) A. Massal. (--Hasse 1913, p. 124, on quartzite rocks in the San Gabriel and San Bernardino Mountains, CA) = DIMELAENA OREINA (Ach.) Norman

RINODINA PYCNOCARPA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 51, on monzogranite in Joshua Tree National Park, at the following sites: Juniper Flats, Skull Rock, Queen Mountain, Queen Valley, Riverside and San Bernardino Counties, CA)

RINODINA PYRINA (Ach.) Arnold (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on bark, Spring Mountains, Clark County, NV)

Rinodina thysanota Tuck. (--Hasse 1913, pp. 124, 125, on micaceous rock in the San Gabriel Mountains, CA) = DIMELAENA THYSANOTA (Tuck.) Hale & W. L. Culb.

RUFOPLACA Arup, Søchting & Frödén
RUFOPLACA ARENARIA (Pers.) Arup, Søchting & Frödén – Synonym: *Caloplaca arenaria* (Pers.) Müll. Arg.

RUSAVSKIA S.Y. Kondr. & Kärnefelt
RUSAVSKIA ELEGANS (Link) S. Y. Kondr. & Kärnefelt – Synonym: *Xanthoria elegans* (Link) S. Y. Kondr. & Kärnefelt

RUSAVSKIA SOREDIATA (Vainio) S. Y. Kondr. & Kärnefelt – Synonym: *Xanthoria sorediata* (Vainio) Poelt

SARCOGYNE Flotow

SARCOGYNE ARENOSA (Herre) Knudsen & S. M. Standley (--Knudsen, K., M. Harding and J. Hoines 2013, p. 52, on monzogranite in Joshua Tree National Park, at the following sites: Sheep's Pass, Smith Water Canyon, Riverside and San Bernardino Counties, CA)

SARCOGYNE CLAVUS (DC.) Kremp. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 52, rare, on gneiss and granite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Upper Long Canyon), Upper Covington Flats, Riverside and San Bernardino Counties, CA)

SARCOGYNE HYPOPHAEA (Nyl.) Arnold Knudsen says *Sarcogyne hypophaea* is now recognized as the correct name for specimens previously referred to as *Sarcogyne privigna* by A.H. Magnusson and later authors (Knudsen, Kocourkova and Westberg 2013) – Synonym: *Sarcogyne privigna*

SARCOGYNE MITZIAE K. Knudsen, Kocourk. & McCune (--Knudsen, K., M. Harding and J. Hoines 2013, p. 52, on soil in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains at Long Canyon area, San Riverside County, CA)

SARCOGYNE NOVOMEXICANA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 52, on gneiss and granite in Joshua Tree National Park, at the following sites: Hills near west entrance, Little San Bernardino Mountains (Berdoo Canyon), Ryan Mountain, Sheep's Pass, Riverside and San Bernardino Counties, CA)

SARCOGYNE PLICATA H. Magn. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 54, common, on gneiss and granite, but not on basalt, in Joshua Tree National Park, at the following sites: Hills near west entrance and north entrance, Little San

Bernardino Mountains (Berdoo Canyon), Malapai Hill (on granite), Pinto Mountains (Belle Mountain), Pleasant Valley, Queen Mountain, Ryan Mountain, Skull Rock, Smith Water Canyon, Squaw Tank, Stirrup Tank, Wonderland of Rocks at Keys Ranch, Riverside and San Bernardino Counties, CA)

Sarcogyne privigna (Ach.) A. Massal
(--Knudsen, K., M. Harding and J. Hoines 2013, p. 54, on gneiss and granite in Joshua Tree National Park, at the following sites: Hexie Mountains, Juniper Flats, Little San Bernardino Mountains (Black Rock, Keys View, Pushwalla Pass), Pine City, Pinto Mountains (Belle Mountain), Queen Mountain, Queen Valley, Ryan Mountain, Sheep's Pass, Stirrup Tank, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT) = *SARCOGYNE HYPOPHAEA*

SARCOGYNE REGULARIS Körber (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on rock, Spring Mountains, Clark County, NV) – Synonym: *Biatorrella pruinoso* (Körber) Mudd.

SARCOGYNE SIMILIS H. Magn. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on rock Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 54, on gneiss and granite in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (Berdoo Canyon, Pushwalla), Queen Mountain, Ryan Mountain, Squaw Tank, Riverside and San Bernardino Counties, CA)

SCYTINIUM (Ach.) Gray

SCYTINIUM CALLOPISMUM (A. Massal.) Otálora, P. M. Jørg. & Wedin – Synonym: *Collema callopismum* A. Massal.

SCYTINIUM TENUISSIMUM (Dickson) Otálora, P. M. Jørg. & Wedin – Synonym: *Leptogium tenuissimum* (Dicks.) Körber

SEIROPHORA Poelt

SEIROPHORA CONTORTUPLICATA (Ach.) Fröden
(--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 18, rare, on rock, Spring Mountains, Clark County, NV)

SILOBIA M. Westb. & Wedin

Silobia smaragdula (Wahlenb.) M. Westb. & Wedin Synonym: *Acarospora smaragdula* (Wahlenb.) A. Massal. = *MYRIOSPORA SMARAGDULA* (Wahlenb. ex Ach.) K. Knudsen & L. Arcadia

SOLORINA Ach.

SOLORINA SPONGIOSA (Ach.) Anzi (Beyer, C. and L. St. Clair, 2004, pp. 1-6, rare, over moss, Spring Mountains, Clark County, NV)

SPILONEMA Bornet

SPILONEMA REVERTENS Nyl. (--Doell, J. 1999, p. 11, found at 3 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

SQUAMARINA Poelt

SQUAMERINA LENTIGERA (Weber) Poelt
(--Jackson, H. et al. 2005, p. 37, rare, on gypsiferous soil, Black Rock Road vicinity, Mojave County, Northwestern AZ)

SQUAMULEA Arup. Søchting & Frödén

SQUAMULEA SQUAMOSA (B. de Lesd.) Arup, Søchting & Frödén – Synonym: *Caloplaca squamosa* (B. de Lesd.) Zahlbr.

SQUAMULEA SUBSOLUTA (NYL.) Arup, Søchting & Frödén – Synonym: *Caloplaca subsoluta* (Nyl.) Zahlbr.

STAUROTHELE Norman

STAUROTHELE AREOLATA (Ach.) Lettau (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13,18, abundant, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 54, on gneiss and granite in Joshua Tree National Park, at the following sites: Hills near west entrance, Ryan Mountain, Upper Covington Flats, Wonderland of Rocks at Keys Ranch and near park west entrance, Riverside and San Bernardino Counties, CA; --Jackson, H. et al. 2005, p. 37, rare to common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 106, common, on soft granite along washes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

STAUROTHELE DRUMMONDII (Tuck.) Tuck.

(--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, uncommon, on rock, Spring Mountains, Clark County, NV)

STAUROTHELE MONICAE (Zahlbr.) Wetmore

(--Knudsen, K., M. Harding and J. Hoines 2013, p. 55, common, on gneiss and granite in Joshua Tree National Park, at the following sites: Juniper Flats, Hidden Valley, Little San Bernardino Mountains (Berdo Canyon, Eureka Peak), Lost Horse Mountains, Queen Mountain, Sheep's Pass, Saddle Rock, Skull Rock, Stirrup Tank, Wonderland of Rocks near JTNP west entrance, Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, common, on granite in drainage on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

STAUROTHELE POLYGONIA B. de Lesd. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 12, 19, rare, on rock, Spring Mountains, Clark County, NV)

STRANGOSPORA Körber

STRANGOSPORA MICROHAEMA (Norman) R. A. Anderson (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on bark, Spring Mountains, Clark County, NV)

TETRAMELAS Norman

TETRAMELAS CHLOROLEUCUS (Körber) A. Nordin – Synonym: *Buellia chloroleuca* Körber

THYREA A. Massal.

THYREA CONFUSA Henssen (--Proulx, M. W. and L. L. St. Clair 2013, pp. 11, 16, uncommon, on rock, Spring Mountains, Clark County, NV; --Jackson, H. et al. 2005, p. 37, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ)

TONINIA A. Massal.

TONINIA CANDIDA (Weber) Th. Fr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on soil, rock, Spring Mountains, Clark County, NV)

TONINIA RUGINOSA (Tuck.) Herre subsp.

RUGINOSA (--Knudsen, K., M. Harding and J. Hoines 2013, p. 55, common in California in general; found on granite-derived soils, monzogranite, and moss, in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Berdo Canyon, Eureka Peak), Wonderland of Rocks (hills near west entrance), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, common on crumbling granite and soil in shaded washes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; -- Knight, K. B. et al. 2002, p. 30, common-locally abundant on basalt, Mojave National Preserve, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, common, mixed with mosses on north and east slopes of Eureka Peak, Joshua Tree National

Park, Riverside and San Bernardino Counties, CA)

TONINIA SEDIFOLIA (Scop.) Timdal (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on soil, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 55, common in California “in general”; on calcareous soil in the Mojave Desert in Joshua Tree National Park, at the following sites: Hills near north entrance, Wonderland of Rocks (Keys Ranch), San Bernardino County, CA; --Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on moss, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, frequent, in washes on decaying granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, rare, on soil over rock, or on open soil surfaces in inter-shrub spaces, Black Rock Road vicinity, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 106, rare, on soil along washes, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, rare, soil over rock, Mojave National Preserve, San Bernardino County, CA; --Shrestha G. et al. 2012, p. 5, rare at 2 of 5 sites, on soil over rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

TONINIA SUBMEXICANA B. de Lesd (--Knudsen, K., M. Harding and J. Hoines 2013, p. 55, probably rare in the Mojave Desert in Joshua Tree National Park, on granite-derived soil in the following sites: Little San Bernardino Mountains (Berdo Canyon), Riverside County, CA)

TONINIA TRISTIS (Th. Fr.) Th. Fr. subsp. **TRISTIS** (--Knudsen, K. and S. Werth 2008, p. 17, rare, on soil, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

UMBILICARIA Hoffm.

UMBILICARIA HYPERBOREA (Ach.) Hoffm. Var.

HYPERBOREA (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on rock, Spring Mountains, Clark County, NV)

UMBILICARIA PHAEA Tuck. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 55, common, on basalt, gneiss, and monzogranite in Joshua Tree National Park, at the following sites: Little San Bernardino Mountains (Black Rock, Eureka Peak, Pushwalla), Lost Horse Mountains (on basalt), Lower and Upper Covington Flats, Ryan Mountain, Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at 3 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 17, frequent, on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino Cnty, CA; --Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

USNEA Dill. ex Adanson

USNEA HIRTA (L.) Weber ex F. H. Wigg. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on bark, Spring Mountains, Clark County, NV)

USNEA LAPPONICA Vainio (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on bark, Spring Mountains, Clark County, NV)

VERRUCARIA Schrader

VERRUCARIA BERNARDINENSIS Breuss (--Knudsen, K., M. Harding and J. Hoines 2013, p. 57, is a lichenicolous lichen which is a fungal parasite on *Staurothele* species (eventually becoming independent), and found in the Mojave Desert in Joshua Tree National Park, at the following sites: Juniper’s Flats, Little San Bernardino Mountains (Black Rock, Pushwalla), Lower and Upper Covington Flats, Queen Valley, Ryan Mountain, Skull Rock, Stirrup Tank, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 17, frequent, parasitic on *Staurothele monicae*,

eventually becoming independent, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

VERRUCARIA COMPACTA (A. Massal.) Jatta (--Knudsen, K. and S. Werth 2008, p. 17, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, common, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, Eastern San Bernardino County, CA)

VERRUCARIA FUSCA Pers. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 57, rare, on granite in Joshua Tree National Park, at the following site: Little San Bernardino Mountains in Berdoo Canyon, Riverside County, CA)

Verrucaria fuscella (Turner) Winch (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA) = *PLACOPYRENIUM FUSCELLUM* (Turner) Gueidan and Cl.

VERRUCARIA FUSCOATROIDES Servít (--Knudsen, K., M. Harding and J. Hoines 2013, p. 57, on granite in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (Eureka Peak), Riverside County, CA; --Knudsen, K. and S. Werth 2008, p. 17, rare on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, rare, on granite, on the north slope of Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA)

VERRUCARIA SPHAEROSPORA Anzi. (--Knudsen, K., M. Harding and J. Hoines 2013, p. 57, rare, on monzogranite in Joshua Tree National Park, at

the following sites: Hidden Valley, Oyster Bar, Riverside and San Bernardino Counties, CA)

XANTHOCARPIA A. Massal. & De Not.
XANTHOCARPIA CRENULATELLA (Nyl.) Frödén, Arup and Søchting – Synonym: *Caloplaca crenulatella* (Nyl.) H. Olivier

XANTHOCARPIA MARMORATA (Bagl.) Frödén, Arup and Søchting – Synonym: *Caloplaca marmorata* (Bagl.) Jatta

XANTHOMENDOZA S. Kondr. and Kärnefelt
XANTHOMENDOZA FALLAX (Hepp ex Arnold) Søchting, Kärnefelt and S. Y. Kondr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, common, on bark, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 57, common, on granite and junipers in Joshua Tree National Park, at the following sites: Hidden Valley, hills near west entrance, Juniper Flats, Little San Bernardino Mountains (Pushwalla), Lower and Upper Covington Flats, Queen Valley, Sheep's Pass, Skull Rock, Smith Water Canyon, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 18, frequent on Juniperus bark, decomposing granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, locally common, on bark of creosote shrubs, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Shrestha G. et al. 2012, p. 5, common at 1 of 5 sites, on bark, Mojave Desert, Beaver Dam Slope, Washington County, UT) – Synonym: *Xanthoria fallax* (Hepp ex Arnold) Arnold

XANTHOMENDOZA MENDOZAE (Räsänen) S. Y. Kondr. & Kärnefelt (--Knudsen K., M. Harding and J. Hoines 2013, p. 58, rare, on rock in Joshua Tree National Park, at the following site: Lost Horse Mountains, Riverside County, CA; --Doell, J. 1999, p. 11, rare, in rock crevices, Sweeney

Granite Mountains, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, rare, on granite at two sites along the wash in shade, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

XANTHOMENDOZA MONTANA (L. Lindblom) Søchting, Kärnefelt & S. Y. Kondr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, abundant, on bark, lignum, Spring Mountains, Clark County, NV)

XANTHOMENDOZA TRACHYPHYLLA (Tuck.) Frödén, Arup and Søchting – Synonym: *Caloplaca trachyphylla* (Tuck.) Zahlbr.

XANTHOPARMELIA (Vainio) Hale
XANTHOPARMELIA AJOENSIS (T. H. Nash) Egan (--Jackson, H. et al. 2005, p. 37, rare, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ)

XANTHOPARMELIA CALIFORNICA Hale --Shrestha G. et al. 2012, p. 5, rare at 2 of 5 sites, on rock, this represents a new record for the Mojave Desert, Beaver Dam Slope, Washington County, UT)

XANTHOPARMELIA COLORADOËNSIS (Gyelnik) Hale (--Knight, K. B. et al. 2002, p. 30, rare to locally common, on basalt, Mojave National Preserve, San Bernardino County, CA)

XANTHOPARMELIA CUMBERLANDIA (Gyelnik) Hale (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, found at 1 of 4 collection sites, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 58, rare, on basalt in Joshua Tree National Park, at the following site: Lost Horse Mountains, Riverside County, CA; --Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, common, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA)

XANTHOPARMELIA LAVICOLA (Gyelnik) Hale (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, on rock, Sweeney Granite Mountains, San Bernardino County, CA)

XANTHOPARMELIA LINEOLA (E. C. Berry) Hale (--Knudsen, K., M. Harding and J. Hoines 2013, p. 58, rare, on non-calcareous rock and soil in Joshua Tree National Park, at the following sites: Wonderland of Rocks at Keys Ranch and Wall Street Canyon, San Bernardino County, CA)

XANTHOPARMELIA LOXODES (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch – Synonym: *Neofuscelia loxodes* (Nyl.) Essl.

XANTHOPARMELIA MARICOPENSIS T. H. Nash & Elix (--Knudsen, K., M. Harding and J. Hoines 2013, p. 58, frequent, on basalt, gneiss and monzogranite in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (along geology tour road), Malapai Hill, Queen Valley, Sheep's Pass, Skull Rock, Squaw Tank, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 5, rare at 1 of 5 sites, on rock, this represented a new record for the Mojave Desert at the time of publication of the Shrestha paper in 2012, Beaver Dam Slope, Washington County, UT)

XANTHOPARMELIA MEXICANA (Gyelnik) Hale (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, rare, on rock, Spring Mountains, Clark County, NV; -- Knudsen, K., M. Harding and J. Hoines 2013, p. 58, common, on gneiss and monzogranite in Joshua Tree National Park, at the following sites: Hidden Valley, Little San Bernardino Mountains (Eureka Peak), Lost Horse Mountains, Lost Horse Valley, Pine City, Pinkham Canyon, Pinto Mountains (Belle Mountain), Queen Mountain, Smith Water Canyon, Stirrup Tank, Wonderland of Rocks (Keys Ranch, near west entrance, Willow Hole), Riverside and San Bernardino Counties, CA; --Doell, J. 1999, p. 11, found at 3 of 4 collection

sites, Sweeney Granite Mountains, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 18, common on granite, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA; --Knight, K. B. et al. 2002, p. 30, locally common, on basalt, Mojave National Preserve, San Bernardino County, CA; --Knudsen, K. and T. La Doux 2006, p. 26, abundant, on granite on Eureka Peak, Joshua Tree National Park, Riverside and San Bernardino Counties, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 2 of 5 sites, on rock, Mojave Desert, Beaver Dam Slope, Washington County, UT)

XANTHOPARMELIA NOVOMEXICANA (Gyelnik) Hale (--Knudsen, K., M. Harding and J. Hoines 2013, p. 60, rare, on gneiss in Joshua Tree National Park, at the following site: Upper Covington Flats, San Bernardino County, CA; --Knudsen, K. and S. Werth 2008, p. 18, rare, on granite slopes, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA)

XANTHOPARMELIA PLITTII (Gyelnik) Hale (--Doell, J. 1999, p. 11, found at 1 of 4 collection sites, Sweeney Granite Mountains, San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, rare to locally common, on rock, Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knight, K. B. et al. 2002, p. 31, common, on basalt, Mojave National Preserve, San Bernardino County, CA)

XANTHOPARMELIA SUBAMIGERA (Gyelnik) Hale (--Knudsen, K., M. Harding and J. Hoines 2013, p. 60, scattered, on non-calcareous rock in Joshua Tree National Park, at the following site: Little San Bernardino Mountains (Black Rock), Lower Covington Flats, Saddle Rock, Riverside and San Bernardino Counties, CA)

XANTHOPARMELIA SUBPLITTII Hale (--Knudsen, K., M. Harding and J. Hoines, p. 60, rare, on gneiss in Joshua Tree National Park, at the following site: Little San Bernardino Mountains (Berdo Canyon), Riverside County, CA; --Shrestha G. et al. 2012, p. 5, rare to common at 2 of 5 sites, on rock, this represented a new record for the Mojave Desert at the time of the Shrestha publication in 2012, Beaver Dam Slope, Washington County, UT)

XANTHOPARMELIA VERRUCULIFERA (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch (--Knudsen, K., M. Harding and J. Hoines 2013, p. 60, rare, on gneiss and granite in Joshua Tree National Park, at the following sites: Queen Mountain, Ryan Mountain, Riverside and San Bernardino Counties, CA)

XANTHORIA (Fr.) Th. Fr.

Xanthoria elegans (Link) Th. Fr. (--Proulx, M. W. and L. L. St. Clair 2013, pp. 13, 19, abundant, on rock, Spring Mountains, Clark County, NV; --Knudsen, K., M. Harding and J. Hoines 2013, p. 60, common, on basalt, gneiss and monzogranite in Joshua Tree National Park, at the following sites: Juniper Flats, Little San Bernardino Mountains (Black Rock, Eureka Peak, Pushwalla), Lost Horse Mountains (on basalt), Lost Horse Valley, Lower and Upper Covington Flats, Queen Mountain, Saddle Rock, Sheep's Pass, Smith Water Canyon, Wonderland of Rocks (Keys Ranch), Riverside and San Bernardino Counties, CA; --Knudsen, K. and S. Werth 2008, p. 18, common on granite slopes at higher elevations, often poorly developed especially at lower elevations, Sweeney Granite Mountains and Sweeney Mountain Desert Research Center, Eastern San Bernardino County, CA; --Jackson, H. et al. 2005, p. 37, rare to locally common, on rock Black Rock Road vicinity, Mojave County, Northwestern AZ; --Knudsen, K. and T. La Doux 2005, p. 106, abundant, on granite, Keys Ranch, Joshua Tree National Park, San Bernardino County, CA) = *RUSAVSKIA ELEGANS* (Link) S. Y. Kondr. & Kärnefelt

Xanthoria fallax (Hepp ex Arnold) Arnold
(--Knight, K. B. et al. 2002, p. 31, rare to locally
common, on Blackbrush lignum (*Coleogyne*
ramosissima), Mojave National Preserve, San

Bernardino County, CA) = XANTHOMENDOZA
FALLAX (Hepp ex Arnold) Søchting, Kärnefelt & S.
Y. Kondr.

Xanthoria mendozae Räsänen (--Doell, J. 1999,
p. 11, found at 2 of 4 collection sites, in crevices of
rock, Sweeney Granite Mountains, San
Bernardino County, CA) = XANTHOMENDOZA
MENDOZAE (Räsänen) S. Kondr. & Kärnefelt

Xanthoria sorediata (Vainio) Poelt (--Proulx, M.
W. and L. L. St. Clair 2013, pp. 13, 19, rare, on
rock, Spring Mountains, Clark County, NV) =
RUSAVSKIA SOREDIATA (Vainio) S. Y. Kondr. &
Kärnefelt

XYLOGRAPHA (Fr.) Fr.

XYLOGRAPHA PARALLELA (Ach.: Fr.) Behlen &
Desberger (--Proulx, M. W. and L. L. St. Clair
2013, pp. 13, 19, rare, on lignum, Spring
Mountains, Clark County, NV)

Discussion and Conclusions:

The Mojave Desert lichen flora is dominated by
crustose species with a significant number of
small foliose species and only two fruticose taxa
reported only rarely for the Spring Mountains
northwest of Las Vegas. The Spring Mountains
represent an island mountain range in the
Mojave Desert with significant elevation,
increased precipitation, and generally more
moderate temperatures – not typical of other
portions of the Mojave Desert. Rock substrates
support more species than any other substrate
with some development of biological soil crusts
supporting a limited number of lichen species.
Corticolous lichens are generally limited with low
species diversity – more commonly found on
some trees (at higher elevations) and some
shrubs.

The Mojave Desert of the American southwest
has recently attracted the attention of several
lichenologists, and has been the focus of a series
of recent surveys from which we have compiled
this checklist of Mojave Desert lichens. The
Mojave Desert is an unusual and complicated
ecosystem with well-defined environmental
parameters that have shaped and selected for a
unique biological system. The environmental
constraints of the Mojave Desert (high
temperatures and very low annual precipitation)
have resulted in very slow community and
ecosystem recovery rates following perturbation.
For example, the biological lichen-containing soil
crust communities at Yuma Proving Grounds in
southwestern Arizona were severely damaged due
to heavy vehicular activity related to training
exercises during WW II (Belnap and Warren
2002). The impact on these fragile biological soil
crusts is still evident over half a century later with
minimal recovery (Belnap and Warren 2002).
Likewise, recent data demonstrates conclusively
that the introduction of non-native invasive
grasses has seriously altered the Mojave Desert
fire regime resulting in severe damage to native
plant communities followed by replacement with
monocultures of annual non-native grasses
(D'Antonio and Vitousek 1992; Abella, 2010;
Vamstad and Rotenberry 2010; Horn et al. 2015).

The Sonoran Desert southeast of the Mojave
Desert is warmer, lower in elevation on average,
and surprisingly, has a much more diverse lichen
flora. More than 1,900 lichen species have been
reported for the Sonoran Desert (Nash et al. Eds.
2004) compared to 279 species for the Mojave
Desert. Generally, lichenologists think that
additional survey work in the Mojave will yield
higher species numbers; however, most agree
that the species diversity in the Mojave will
probably never approach the species richness
reported for the Sonoran. This assumption is
based on several factors - the Sonoran land area
is roughly five times the size of the Mojave, the
Sonoran has a very different set of environmental

conditions with a greater diversity of habitat types, and a much richer vascular plant community. Further study of the Mojave Desert lichen flora will provide a more complete picture of total lichen diversity and this kind of information will be particularly important, in light of the various human-related threats to the

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