

The Annotated Checklist of Lichens, Lichenicolous and Allied Fungi of Channel Islands National Park

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ABSTRACT. – For Channel Islands National Park, at the beginning of the 21st century, a preliminary baseline of diversity of 504 taxa in 152 genera and 56 families is established, comprising 448 lichens, 48 lichenicolous fungi, and 8 allied fungi. *Verrucaria othmarii* K. Knudsen & L. Arcadia nom. nov. is proposed for the illegitimate name *V. rupicola* (B. de Lesd.) Breuss, concurrently a neotype is also designated. *Placidium boccanum* is reported new for North America and California. *Bacidia coprodes* and *Polycoccum pulvinatum* are reported new for California. *Catillaria subviridis* is verified as occurring in California. *Acarospora rhabarbarina* is no longer recognized as occurring in North America. Seven species are considered endemic to Channel Islands National Park: *Arthonia madreana*, *Caloplaca obamae*, *Dacampia lecaniae*, *Lecania caloplacicola*, *Lecania ryaniana*, *Plectocarpon nashii* and *Verrucaria aspecta*. At least 54 species, many of which occur in Mexico, are only known in California from Channel Islands National Park

INTRODUCTION

Channel Islands National Park (heretofore referred to as CINP) in Ventura and Santa Barbara Counties in southern California consists of five islands totalling approximately 346 square miles in area (221331 acres, 89569 ha, 900 km²). Santa Barbara Island, with an area of 1.02 square miles (639 acres, 259 ha, 2.63 km²) is the smallest island in CINP. It is considered a member of the southern islands which include San Nicolas Island, Santa Catalina Island, and San Clemente Island, all outside the boundaries of the national park. The other four islands in CINP are called the northern islands and once formed a single island called Santarosae during a time of lower sea levels in the Pleistocene. They are Anacapa Island (699 acres, 283 ha, 1.14 mi², 2.8 km²), Santa Cruz Island (60,645 acres, 24,542 ha, 96.51 mi², 249.95 km²), Santa Rosa Island (52,794 acres, 21,365 ha, 83.12 mi², 215.27 km²), and San Miguel Island (9,325 acres, 3,774 ha, 14.7 mi², 37.74 km²) (Wikipedia, 2012). None of the islands were ever connected to the mainland of California. The northern islands represent the northwest end of the Transverse Ranges of southern California which include the Santa Monica Mountains and extend southeast to the Little San Bernardino Mountains in Joshua Tree National Park.

The geology of the islands is comprised of various volcanic and sedimentary rocks on San Miguel, Santa Cruz, and Santa Rosa Island with extensive marine terraces. Santa Barbara and Anacapa Island are primarily volcanic rock. Caliche can be found on San Miguel and Santa Rosa Island (Weigand 1998). The oceanic climate and the calcareous and non-calcareous rocks support a diverse community of saxicolous lichens. The marine terraces support biological soil crusts, which were probably extensive, before grazing, erosion, and the introduction of non-native plants. On all of the islands, the cessation of grazing, has allowed biological soil crusts to begin to become reestablished.

Channel Islands National Park hosts approximately 790 plant taxa, of which about 578 are native and 205 are nonnative (CINP 2012). Major native plant communities are coastal sage shrub, maritime

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chaparral, and forests of island oaks, mixed hardwoods, pine, and riparian trees. These plant communities support a rich diversity of epiphytic macrolichens and crusts, including 17 species of *Usnea*. The introduction of non-native animals including sheep, cattle, pigs, and rabbits (the latter on Santa Barbara Island) had a significant impact on vegetation, denuding large parts of the islands and causing greatly increased erosion rates. However non-native animals, as well as introduced elk and deer (both on Santa Rosa Island), have been removed from the CINP. Throughout the islands the native vegetation is regenerating as is the lichen flora. Based on available data all of the lichens reported here are native to CINP.

The only historical collections of lichens from CINP that we have examined are a small number of collections by Blanche Trask from Santa Barbara Island, some which can be found in the Farlow Herbarium at Harvard University (FH) and at New York Botanical Garden (NY). The major modern collections from CINP are those assembled by William Weber (University of Colorado, Boulder; COLO) and Charis Bratt (Smithsonian Institution (US) and Santa Barbara Botanic Garden (SBBG)), beginning in the 1980's. The Sonoran Lichen Flora Project, led by Thomas H. Nash III (Arizona State University; ASU) and Bruce Ryan (ASU), with the help of Charis Bratt, led to the extensive collection of lichens in the mid-nineties on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Island by an international team of lichenologists. The three volumes of the *Lichen Flora of the Greater Sonoran Desert Region* (Nash et al. 2002, 2004, 2007), written by an international team of more than 80 lichenologists included both the southern and northern Channel Islands as well as the Santa Monica Mountains. It forms the foundation for the study of the lichens and lichenicolous fungi of CINP in the beginning of the 21st century. Our study of CINP began in 2006.

There are a total of 9,361 collections of lichens, lichenicolous fungi, and allied fungi deposited in the four herbaria with significant collections from CINP (ASU, MIN (University of Minnesota), SBBG, and UCR (University of California, Riverside)) (CNALH 2012; UCR Herbarium 2012). These same herbaria contain 51,528 collections from the whole of California. Thus with 18% of the total number of lichen vouchers from California having been collected in CINP, the study area represents the most collected and studied area in the state in terms of Lichenology. Nonetheless, after the publication of the *Lichen Flora of the Greater Sonoran Desert Region*, new records and new species for the CINP continue to be discovered (Knudsen 2008, 2009a–b; Knudsen & Kocourková 2008, 2010; Knudsen & Lendemer 2009; Kocourková & Knudsen 2008, 2009a–c, 2010, 2011; Kocourková et al. 2009, 2012; Kukwa & Knudsen 2011; Lendemer & Knudsen 2010; Lendemer 2010; Lendemer & Hodkinson in review). During our studies, we have also discovered many remaining taxonomic problems that need to be resolved and identifications of specimens that need to be verified or revised, particularly at SBBG.

Much exploration for lichens also remains to be done in CINP. For instance, the majority of collections from Santa Cruz and Santa Rosa Islands were made only near the main roads. The east end of Santa Cruz Island had not even been visited by lichenologists until our recent fieldwork. There have been no collections on the Middle Island of Anacapa. In fact we estimate that 75% or more of the total area of the islands has never been explored for lichens. Lichenicolous fungi as well as some lichen genera and substrates have also been undercollected, including epiphytic crusts on bark, sterile crusts, and biological soil crusts. There has also been no study of intertidal lichens, which are in danger of extirpation if ocean levels rise rapidly due to global warming.

Several rare lichen species such as *Harpidium nashii* Scheidegger, *Hypogymnia schizidiata* McCune, and *Tornabea scutellifera* (With.) J.R. Laundon may be extirpated and should be the subject of targeted surveys to relocate and map any extant populations. Three species endemic to CINP are currently only known from their type collections and should be the subject of similar investigations. These include *Dacampia lecaniae* Kocourk. and K. Knudsen, *Plectocarpon nashii* Hafellner, and *Toninia nashii* Timdal. The discovery of *Arthonia subdispuncta* Nyl. ex Hasse on West Anacapa (Knudsen & Kocourková 2010a), a species apparently extirpated from the Santa Monica Mountains, gives us hope that other rare or extirpated taxa from the Santa Monica Mountains and southern California, such as *Bacidia veneta* S. Elman, *Verrucaria dacryodes* Nyl. ex Hasse (Plate 1, Fig. A), and *Rinodina terricola* Sheard and K. Knudsen (Plate 1, Fig. B) will be discovered in CINP. All of these areas of investigation have necessitated the publication of this preliminary checklist of CINP, officially sanctioned by the National Park Service, to guide further exploration, study, and prepare for the eventual publication of a lichen flora of the northern Channel Islands.

MATERIALS AND METHODS

The identification of specimens was based primarily on the *Lichen Flora of the Greater Sonoran Desert Region* (Nash et al. 2002, 2004, 2007), except where other literature is cited for the description of the species in the header or in the notes. The identifications of specimens not seen by the authors were only accepted if made by recognized taxonomic experts, usually the assorted authors of the treatments of the *Lichen Flora of the Greater Sonoran Desert Region*, or our colleague J.C. Lendemer (NY). All the identifications of Channel Island specimens at SBBG, not verified by taxonomic experts or the authors of the present work, are here excluded from the species list and distribution data until they are revised in the future for a flora of CINP. Specimens at UCR needing further verification were also excluded but are searchable online <http://www.herbarium.ucr.edu>. Undescribed taxa mentioned in the literature or filed in the herbarium at UCR were also excluded. Verified new additions to the official checklist will be published in updates in future volumes of *Opuscula Philolichenum*. Excluded species listed here in the appendix are those that have been published in the literature but not accepted by the us.

Authorities follow *A Cumulative Checklist for the Lichen-forming, Lichenicolous and Allied Fungi of the Continental United States and Canada* including the exclusion of unnecessary abbreviations of authorities with short names (Esslinger 2011). The family level taxonomy follows Lumbsch and Huhndorf (2010) unless other literature is cited. Taxonomic research was carried out during this study at the herbaria ASU, FH, NY, SBBG, UCR.

The terms “central coast” and “central California” used herein refer to the area from Santa Barbara County north to at least Marin County. Species are considered endemic to California or the Channel Islands based on current research and conforming to general California environmental assessment standards. Anacapa Island is comprised of three islets, usually referred to as West, Middle, and East Anacapa. The islets are separated by water and steep cliffs. The information on the distributions of lichens in mainland California is based on the subjective experience and opinions of the authors. Many parts of California are poorly collected or unexplored for lichens as is illustrated by the fact that 18% of the total lichen collections from California available in four major herbaria are derived from CINP. Additionally it should be noted that collectors in the past have favored macrolichens while most taxa in California are crustose (Tucker and Ryan 2006). Global distribution is treated on the continental level. Continental distributions are based on the literature cited for a description of a taxon and the opinion of the authors. We consider species “cosmopolitan” in a very broad sense, when they occur on more than three continents, the term in our usage being synonymous with “widely distributed”. The use of the term “cosmopolitan” does not imply that a given species occurs everywhere. It also does not imply that the species is common. Images were captured using an Olympus DP20 digital camera with Microsuite Special Edition. The illustrations were prepared using Adobe Photoshop.

LICHENS, LICHENICOLOUS FUNGI, AND ALLIED FUNGI OF THE NORTHERN CHANNEL ISLANDS

This checklist reports a total of 504 taxa, 498 species, 2 subspecies, 4 varieties, 152 genera, and 56 families (with 6 genera of uncertain placement and 6 genera of anamorphic fungi) from the northern Channel Islands. Of these 448 are lichens, 48 are lichenicolous fungi, and 8 are allied fungi. In this section all lists are arranged alphabetically by genus and species, or family in the case of Part 4. Throughout the section the asterisk “*” indicates a taxon is a lichenicolous fungus and a dagger “†” indicates a taxon is an allied fungus (i.e., a non-lichenized fungus belonging to one of several groups that have been traditionally treated by lichenologists).

When describing the distributions of individual species in the northern Channel Islands the following abbreviations are used to denote specific islands: A=Anacapa, EA=East Anacapa, SB=Santa Barbara Island, SM=San Miguel Island, SC=Santa Cruz Island, SR=Santa Rosa Island, WA=West Anacapa. As has already been noted above, all species are considered native to the study area and thus this information is not repeated below.

PART 1 – INDICES TO THE ANNOTATED CHECKLIST

To facilitate the use of the annotated checklist a series of indices with minor annotations are provided in this section. These indices include i) a full listing of the taxa treated here with annotations of their distributions within the study area (Part 1A); ii) a listing of only the lichenicolous fungi, again with

annotations of their distributions within the study area (Part 1B); iii) a listing of only the allied fungi, also with annotations of their distributions within the study area (Part 1C); and iv) a listing of the families and genera of fungi treated here with notes on the number of species that occur in the study area (Part 1D).

PART 1A - INDEX OF LICHENS, LICHENICOLOUS FUNGI, AND ALLIED FUNGI

Acarospora americana H. Magn. – SR
Acarospora elevata H. Magn. – SC (possibly WA & SR)
Acarospora fuscata (Schrader) Th. Fr. – SC
Acarospora obnubila H. Magn. – SR
Acarospora obpallens (Nyl. ex Hasse) Zahlbr. – SC, SR
Acarospora robiniae K. Knudsen – SC, SR
Acarospora schleicheri (Ach.) A. Massal. – SC, SM, SR
Acarospora socialis H. Magn. – EA, SB, SM, SC, SR, WA
Acarospora terricola H. Magn. – SC
Acarospora thamnina (Tuck.) Herre – SC, SR
Acarospora veronensis A. Massal. – SC, SR
Adelolecia sonorae Hertel – SM
Amandinea punctata (Hoffm.) Coppins & Scheidegger – EA, SC, SM, SR, WA
Arthonia atra (Pers.) A. Schneider – SM
†*Arthonia beccariana* (Bagl.) Stizenb. – SC, SR
**Arthonia diploiciae* Calat. & Diederich – EA, WA
Arthonia gerhardii Egea & Torrente – SR
Arthonia glebosa Tuck. – SC
Arthonia infectans Egea & Torrente – SR
Arthonia lecanactidea Zahlbr. – WA
Arthonia madreana Egea & Torrente – SR
**Arthonia molendoi* (Heufl. ex Frauenf.) R. Sant. – SR
**Arthonia phaeophysciae* Grube & Matzer – SC
Arthonia pruinata (Pers.) A.L. Sm. – EA, SB, SC, SR, WA
†*Arthonia subdispuncta* Nyl. ex Hasse – EA
Arthopyrenia lyrata R.C. Harris – SC
†*Arthopyrenia plumbaria* (Stizenb.) R.C. Harris – SR
**Arthrorhaphis aeruginosa* R. Sant. & Tønsberg – SR
Aspicilia glaucopsina (Nyl. ex Hasse) Hue – SR
Aspicilia pacifica Owe-Larss. & A. Nordin – EA, SC, SR, WA
Aspicilia phaea Owe-Larss. & A. Nordin – SC, SR
Aspicilia praecrenata (Nyl. ex Hasse) Hue – SR
Bacidia coprodes (Körb.) Lettau – SR
Bacidia coruscans S. Ekman – SC, SM, SR
Bacidia heterochroa (Müll. Arg.) Zahlbr. – SC, SM, SR
Bacidina californica S. Ekman – SC, SM, SR
Bactrospora acicularis (C.W. Dodge) Egea & Torrente – SC
Bactrospora brevispora R.C. Harris – SC
Bactrospora brodoi Egea & Torrente – SR
Bactrospora patellarioides (Nyl.) Almq. – SC, SR
Bactrospora patellarioides var. *convexa* (B. de Lesd.) Egea & Torrente – SR
Bagliettoa calciseda (DC.) Gueidan & Cl. Roux – SC, SR
Buellia abstracta (Nyl.) H. Olivier – EA, SB, SC, SM, SR, WA
Buellia badia (Fr.) A. Massal. – SR, WA
Buellia capitis-regum W.A. Weber – SC, SM, SR, WA
Buellia christophii Bungartz – SB, SC, SM, SR, WA
Buellia disciformis (Fr.) Mudd – SR
Buellia dispersa A. Massal. – SC, SR
Buellia griseovirens (Turner & Borrer ex Sm.) Almb. – SC
Buellia halonia (Ach.) Tuck. – SB, SC, SM, SR, WA

Buellia maritima (Nyl.) Mull. Arg. – SC, SM, SR
Buellia oidalea (Nyl.) Tuck. – SC, SM, SR, WA
Buellia prospersa (Nyl.) Riddle – SM, SR, WA
Buellia pullata Tuck. – EA, SC, SM, SR, WA
Buellia ryanii Bungartz – SC, SM, SR
Buellia sequax (Nyl.) Zahlbr. – SR
Buellia stellulata (Taylor) Mudd – EA, SB(?), SC, SM, SR, WA
Buellia tesserata Körber – SC, SM, SR, SB
**Buellia inops* (Triebel & Rambold) Hafellner – SB
**Buellia physciicola* Poelt & Hafellner – SC, SR
Calicium abietinum Pers. – SC
Calicium glaucellum Ach. – SC, SR
Caloplaca ammiopila (Wahlenb.) Th. Fr. – SC, SR
Caloplaca atroflava (Turner) Mong. – SC, SR
Caloplaca bolacina (Tuck.) Herre – EA, SB, SC, SM, SR, WA
Caloplaca brattiae W.A. Weber – SB, SC, SM, SR, WA
Caloplaca catalinae H. Magn. – SC
Caloplaca cerina (Ehrh. ex Hedwig) Th. Fr. – EA, SB, SC, SR, WA
Caloplaca citrina (Hoffm.) H. Olivier – SB, SC, SM, SR
Caloplaca coralloides (Tuck.) Hulting – SB, SC, SM, SR, WA
Caloplaca crenulatella (Nyl.) H. Olivier – SM, SR
Caloplaca durietzii H. Magn. – SC
Caloplaca ferruginea (Hudson) Th. Fr. – SC, SR
Caloplaca ignea Arup – SC, SR
Caloplaca impolita Arup – EA, SB, SC, SR, WA
Caloplaca ludificans Arup – EA, SB, SC, SM, SR, WA
Caloplaca luteominia var. *bolanderi* (Tuck.) Arup – SB, SM, SR, WA
Caloplaca luteominia (Tuck.) Zahlbr. – EA, SB, SM, SR, WA
Caloplaca marina ssp. *americana* Arup – SC, SM
Caloplaca marmorata (Bagl.) Jatta – SM, SR
Caloplaca microphyllina (Tuck.) Hasse – SC
Caloplaca nashii Nav.-Ros., Gaya & Hladun – SR
Caloplaca obamae K. Knudsen – SR
Caloplaca peliophylla (Tuck.) Zahlbr. – SR
Caloplaca pyracea (Ach.) Zwackh – EA, SB, SC, SM, SR
Caloplaca rosei Hasse – SB, SC, SR, SM, WA
Caloplaca saxicola (Hoffm.) Nordin – SC, SR
Caloplaca stanfordensis H. Magn. – EA, SC, SM, SR, WA
Caloplaca stantonii W.A. Weber ex Arup – SB, SC, SM, SR, WA
Caloplaca stellata Wetmore & Kärnefelt – SR
Caloplaca stipitata Wetmore – SB, SC, SM, SR
Caloplaca subsoluta (Nyl.) Zahlbr. – SB, SC
Candelaria pacifica M. Westberg & Arup – SC, SR
Candelariella aurella (Hoffm.) Zahlbr. – SM, SR
Candelariella lutella (Vainio) Räsänen – SR
Candelariella vitellina (Hoffm.) Mull. Arg. – SC, SM, SR, WA
Candelariella xanthostigma (Ach.) Lettau – EA, SC, SM, SR
Carbonea latypizodes (Nyl.) Knoph & Rambold – SC
Catillaria chalybeia (Borrer) A. Massal. – SR
Catillaria lenticularis (Ach.) Th. Fr. – SR
Catillaria nigroclavata (Nyl.) Schuler – SM
Catillaria subviridis (Nyl.) Zahlbr. – SC
**Cercidospora cladoniicola* Alstrup – SR
Chrysothrix granulosa G. Thor – SC, SM, SR, WA
Chrysothrix xanthina (Vainio) Kalb – SC, SR
Cladonia chlorophaea (Flörke ex Sommerf.) Spreng. – SR, WA

Cladonia hammeri Ahti – SR, WA
Cladonia macilenta Hoffm. – SC, SR
Cladonia maritima K. Knudsen & Lendemer – SC, SR, WA
Cladonia nashii Ahti – SC, SM, SR, WA
Cladonia scabriuscula (Delise) Nyl. – SC, SR, WAS
Cladonia subfimbriata Ahti – SC, SR
Clavascidium lacinulatum (Sch.) M. Prieto. – SC, SR, WA
Cliostomum griffithii (Sm.) Coppins – SC, SM, SR, WA
Collema coccophorum Tuck. – SC, SM, SR
Collema crispum (Hudson) F.H. Wigg. – SC, SR, WA
Collema cristatum (L.) F.H. Wigg. – SM, SR
Collema furfuraceum (Arnold) Du Rietz – SC, SR
Collema nigrescens (Hudson) DC. – SC, SR
Collema tenax (Sw.) Ach. – SC
Collemopsidium sublitoralis (Leighton) Grube & B.D. Ryan – SR
Cresponea chloroconia (Tuck.) Egea & Torrente – SR
Cyphelium brunneum W.A. Weber – SR
**Dacampia lecaniae* Kocourk. & K. Knudsen – WA
**Dactylospora pleiosperma* Triebel – SC, SR
**Dactylospora saxatilis* (Schaerer) Hafellner – SR
Dendrographa alectoroides Sundin & Tehler – SC, SR
Dendrographa leucophaea (Tuck.) Darb. – EA, SB, SC, SM, SR, WA
Dermatocarpon americanum Vainio – SC, SR
Dermatocarpon leptophyllodes (Nyl.) Zahlbr. – SC
Dimelaena californica (H. Magn.) Sheard – SC, SM, SR, WA
Dimelaena radiata (Tuck.) Hale & Culb – EA, SB, SC, SM, SR, WA
Dimelaena weberi Sheard – SB, SC, SM
Diploicia canescens (Dicks.) A. Massal. – EA, SB, SC, SM, SR, WA
Diploschistes actinostomus (Ach.) Zahlbr. – SC, SR, WA
Diploschistes aeneus (Müll. Arg.) Lumbsch – SR
Diploschistes diacapsis (Ach.) Lumbsch – SC, SR, WA
Diploschistes muscorum (Scop.) R. Sant. – SC, SM, SR, WA
Diploschistes scruposus (Schreber) Norman – SB, SC, SR
Diplotomma alboatrum (Hoffm.) Flotow – SM, SR
Diplotomma venustum (Körber) Körber – SM, SR
Dirina catalinariae Hasse – EA, SB, SC, SM, SR, WA
Endocarpon loscosii Müll. Arg. – SM, SR
Endocarpon pallidulum (Nyl.) Nyl. – SB (?)
Endocarpon petrolepidium (Nyl.) Hasse – SC, SR
Endocarpon pusillum Hedwig – SB, SC, SM, SR, WA
Endocarpon simplicatum (Nyl.) Nyl. – SC, SR
**Endococcus matzeri* D. Hawksw. & Iturr. – SR
**Endococcus stigma* (Körb) Stizenb. – SR
**Endococcus thelommatidis* Kocourk. & K. Knudsen – SR
Evernia prunastri (L.) Ach. – SC, SM, SR
Flavoparmelia caperata (L.) Hale – SB, SC, SM, SR, WA
Flavopunctelia flaventior (Stirton) Hale – SC, SR
Flavopunctelia soledica (Nyl.) Hale – SC, SR
Fulgensia desertorum (Tomin) Poelt – SR
Fuscopannaria coralloidea P.M. Jørg. – SC, SR
Fuscopannaria praetermissa (Nyl.) P.M. Jørg. – SC, SR
Gyalecta herrei Vězda – SC, SR, WA
Gyalecta jenensis (Batsch) Zahlbr. – EA, SR, WA
Harpidium nashii Scheidegger – SC
Heterodermia erinacea (Ach.) Hale – SC, SR, WA
Heterodermia leucomela (L.) Poelt – SC, SM, SR, WA

Heterodermia namaquana Brusse – SB, SC, SM, SR, WA
Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt – SC
Hyperphyscia confusa Essl., C.A. Morse & S. Leavitt – SC
Hypocnomyce scalaris (Ach. Ex Lilj.) M. Choisy – SC
Hypogymnia gracilis McCune – SC
Hypogymnia heterophylla L. Pike – SC, SR
Hypogymnia imshaugii Krog – SC
Hypogymnia minilobata McCune & Schoch – SC, SR
Hypogymnia mollis L.H. Pike & Hale – SC, SR, WA
Hypogymnia schizidiata McCune – SC, SR
Hypogymnia tubulosa (Schaerer) Hav. – SC
Hypotrachyna afrorevoluta (Krog & Swinscow) Krog & Swinscow – SC
Ingvariella bisporea (Nagl.) Guderley & Lumbsch – SR
**Intralichen baccisporus* D. Hawksw. & M.S. Cole – SC, SR
**Intralichen lichenicola* M.S. Christ. & D. Hawksw. – SR
†*Julella vitrispora* (Cooke & Harkness) M.E. Barr – SC
Kaernefeltia merrillii (Du Rietz) Thell & Goward – SC, SR
Koerberia sonomensis (Tuck.) Henssen – SC
Lecanactis californica Tuck. – EA, SC, SM, SR, WA
Lecanactis salicina Zahlbr. – SC
Lecania brunonis (Tuck.) Herre – SB, SC, SM, SR, WA
Lecania caloplacicola B.D. Ryan & v.d. Boom – SR
Lecania cyrtella (Ach.) Th. Fr. – SC, SM, SR
Lecania dudleyi Herre – SB, SC, SM, SR
Lecania franciscana (Nyl. ex Hasse) K. Knudsen & Lendemer – SB, SC, SM, SR
Lecania fructigena Zahlbr. – EA, SB, SC, SM, SR, WA
Lecania fuscella (Schaerer) Körber. – EA, SB, SR, WA
Lecania hassei (Zahlbr.) W. Noble – EA, SB, SC, SR, WA
Lecania inundata (Hepp ex Körber) M. Mayrhofer – SC, SM, SR
Lecania naegelii Diederich & v.d. Boom – SC, SM, SR
Lecania pacifica Zahlbr. ex B.D. Ryan & v.d. Boom – SB, SC, SR
Lecania rabenhorstii (Hepp) Arnold – SR
Lecania ryaniana v.d. Boom – SB, SM, SR
Lecania toninioides Zahlbr. – SM, SR
Lecania turicensis (Hepp) Müll. Arg. – SM, SR, WA
Lecanographa aggregata Egea & Torrente – SR
Lecanographa brattiae (Egea & Ertz) Ertz & Tehler – EA, SB, SC, SM, SR, WA
Lecanographa dimelaenoides (Egea & Torrente) Egea & Torrente – EA, SB, SC, SM, SR, WA
Lecanographa hypothallina (Zahlbr.) Egea & Torrente – EA, SB, SC, SM, SR, WA
Lecanographa insolita Lendemer & K. Knudsen – SR
Lecanographa lyncea (Sm.) Egea & Torrente – SR
Lecanographa lynceoides (Müll. Arg.) Egea & Torrente – SR
Lecanora albella (Pers.) Ach. – SC, SR
Lecanora albocaesiella B.D. Ryan & T.H. Nash – SR
Lecanora andrewii B. de Lesd. – SR
Lecanora brattiae B.D. Ryan & T.H. Nash – SB, SC
Lecanora caesiorubella Ach. – SC, SM, SR
Lecanora californica Brodo – SC, SM, SR
Lecanora campestris (Schaerer) Hue – SC, SR, WA(?)
Lecanora carneolutescens Nyl. – SM
Lecanora comonduensis T.H. Nash & Hertel – SC
Lecanora confusa Almb. – SC, SM, SR
Lecanora crenulata Hook. – SR
Lecanora demosthenesii Lumbsch & Messuti – SC, SM, SR
Lecanora dispersa (Pers.) Sommerf. – SM, SR
Lecanora expallens Ach. – SR

Lecanora gangaleoides Nyl. – SC, SR, WA
Lecanora hagenii (Ach.) Ach. – SC, SM, SR
Lecanora horiza (Ach.) Lindsay – SB, SC, SM, SR, WA
Lecanora laxa (Šliwa & Wetmore) Printzen – SC, SR
Lecanora muralis (Schreber) Rabenh. [= *L. saxicola* (Pollich) Ach.] – SC, SR, WA
Lecanora pacifica Tuck. – SC, SM, SR, WA
Lecanora plumosa Müll. Arg. – SR
Lecanora subcarnea (Lilj.) Ach. – SC, SR
Lecanora subimmergens Vainio – SR
Lecanora subrugosa Brodo – SC
Lecanora substrobilina Printzen – SC, SM, SR
Lecanora verrucariicola B.D. Ryan – SR
Lecanora zosteræ (Ach.) Nyl. – SM
Lecidea cruciaria Tuck. – SC, SR
Lecidea diducens Nyl. – SC
Lecidea fuscoatra (L.) Ach. – SC, SR
Lecidea laboriosa Müll. Arg. – SC, SM, SR
Lecidella asema (Nyl.) Knoph & Hertel – EA, SB, SC, SM, SR, WA
Lecidella carpathica Körber – SC, SR
Lecidella elaeochroma (Ach.) M. Choisy – SC, SM, SR
Lecidella granulosa (Nyl.) Knoph & Leuckert – SR
Lecidella meiococca (Nyl.) Leuckert & Hertel – SC, SR
Lecidella scabra (Taylor) Hertel – SR, WA
Lecidella stigmata (Ach.) Hertel & Leuckert – WA
Lempholemma chalazanum (Ach.) B. de Lesd. – WA
Lepraria lobificans Nyl. – SC, SR
Lepraria neglecta (Nyl.) Erichsen – SR
Lepraria xerophila Tønsberg – SB, SC, SM, SR, WA
Leprocaulon americanum Lendemer & Hodkinson ined. – SB, SC, SM, SR, WA
Leprocaulon knudsenii Lendemer & Hodkinson ined. – SC
Leprocaulon santamonicae (K. Knudsen & Elix) Lendemer & Hodkinson ined. – SR
Leprocaulon terricola (Lendemer) Lendemer & Hodkinson ined. – SC, SR
Leptochidium albociliatum (Desm.) M. Choisy – SC
Leptogium californicum Tuck. – SC
Lichinella robustoides Henssen, Budel & T.H. Nash – SC, SR
Lichinella stipatula Nyl. – SC
**Lichenocodium erodens* M.S. Christ. & D. Hawksw. – SR
**Lichenocodium lecanorae* (Jaap) D. Hawksw. – SR
**Lichenocodium lichenicola* (P. Karst.) Petr. & Sydow – SR
**Lichenodiplis lecanorae* (Vouaux) Dyko & D. Hawksw. – SR
**Lichenodiplis lecanoricola* (M.S. Cole & D. Hawksw.) Diederich – SR
**Lichenostigma amplum* Calat. & Hafellner – SR
**Lichenostigma bolacinae* Nav.-Ros., Calat. & Hafellner – SR
**Lichenostigma cosmopolites* Hafellner & Calat. – SC, SR
**Lichenostigma radicans* Calat. & Barreno – SR
**Lichenostigma rugosum* Thor – SR
**Lichenostigma subadians* Hafellner, Calat. & Nav.-Ros. – SR
**Marchandiomyces corallinus* (Roberge) Diederich & D. Hawksw. – SR
Maronea polyphaea H. Magn. – SC
Megalaria columbiana (G. Merr.) S. Ekman & Tønsberg – SR
Micarea denigrata (Fr.) Hedl. – EA, SC, SR
Micarea nitschkeana (J. Lahm ex Rabenh.) Harm. – SM
Mobergia angelica (Stizenb.) H. Mayr. & Sheard – SB, SC, SM, SR, WA
Moelleropsis nebulosa (Hoffm.) Gyeln – SC
**Muellerella lichenicola* (Sommerf. ex Fr.) D. Hawksw. – SR
†Mycocalicium subtile (Persoon) Szatala – SC, SR

†*Mycocalicium victoriae* (Knight ex F. Wilson) Tibell – SC
Myriospora hassei (Herre) K. Knudsen & L. Arcadia – SR
Myriospora scabrida (Hedl. ex H. Magn.) K. Knudsen & L. Arcadia – SC
 †*Naetrocymbe punctiformis* (Pers.) A. Massal. – WA
Nephroma parile (Ach.) Ach. – SR
Niebla cephalota (Tuck.) Rundel & Bowler – EA, SB, SC, SM, SR, WA
Niebla ceruchis (Ach.) Rundel & Bowler – EA, SB, SC, SM, SR, WA
Niebla ceruchoides Rundel & Bowler – SB, SC, SM, SR, WA
Niebla combeoides (Nyl.) Rundel & Bowler – SB, SC, SM, SR, WA
Niebla homalea (Ach.) Rundel & Bowler – EA, SB, SC, SM, SR, WA
Niebla isidiaescens Bowler, Marsh, T.H. Nash & Riefner – EA, SB, SC, WA
Niebla laevigata Bowler & Rundel – EA, SB, SC, SM, SR, WA
Niebla polymorpha Bowler, J.E. Marsh, T.H. Nash & Riefner – EA, SC
Niebla procera Rundel & Bowler – SB, SC, SM, SR
Niebla robusta (R.H. Howe) Rundel & Bowler – EA, SB, SC, SM, SR, WA
Normandina pulchella (Borrer) Nyl. – SC, SR
Ochrolechia africana Vainio – SR
Ochrolechia arborea (Kreyer) Almb. – SC
Ochrolechia mexicana Vainio – SC
Ochrolechia subpallescens Versegghy – SR
 **Opegrapha anomea* Nyl. – SC, SR
Opegrapha herbarum Mont. – EA, SB, SC, SM, SR, WA
Opegrapha niveoatra (Borrer) J.R. Laundon – SC
Opegrapha vulgata (Ach.) Ach. – SR
Parmelia sulcata Taylor – SC, SR
Paraschismatomma ochroleucum (Zahlbr.) K. Knudsen, Ertz & Tehler – SM (historical)
Parmotrema arnoldii (Du Rietz) Hale – SC, SR
Parmotrema hypoleucinum (B. Steiner) Hale – SC, SM, SR, WA
Parmotrema perlatum (Hudson) M. Choisy (syn. *P. chinense* (Osbeck) Hale) – SC, SM, SR, WA
Parmotrema reticulatum (Taylor) M. Choisy – SC, SR
Parmotrema stuppeum (Taylor) Hale – SC, SR
Peltigera collina (Ach.) Schrader – SR
Peltula bolanderi (Tuck.) Wetmore – SB, SR
Peltula corticola Budel & R. Sant. – SC
Peltula euploca (Ach.) Poelt – SC, SR
Peltula farinosa Budel – SC
Peltula obscurans (Nyl.) Gyeln. var. *deserticola* (Zahlbr.) Wetmore – SC, SR
Peltula obscurans var. *hassei* (Zahlbr.) Wetmore – SR, WA
Peltula omphaliza (Nyl.) Wetmore – SR
Peltula patellata (Bagl.) Swinscow & Krog – SR
Pertusaria amara (Ach.) Nyl. – SC, SR
Pertusaria brattiae Lumbsch & T.H. Nash – SB, SC, SM, SR, WA
Pertusaria californica Dibbins – SR, WA
Pertusaria flavicunda Tuck. – SC, SM, SR, WA
Pertusaria islandica Bratt, Lumbsch & Schmitt – SM
Pertusaria lecanina Tuck. – SC, SR, WA
Pertusaria moreliensis B. de Lesd. – SR
Pertusaria occidentalis Bratt, Lumbsch & Schmitt – SM
Pertusaria ophthalmiza (Nyl.) Nyl. – SC
Pertusaria rubefacta Erichsen – SC, SR
Pertusaria tejocotensis de Lesd. – SC
Pertusaria velata (Turner) Nyl. – SR
Pertusaria xanthodes Müll. Arg. – SC, SR
Phaeophyscia hirsuta (Mereschk.) Essl. – SC, SM, SR
 **Phaeosporobolus usneae* D. Hawksw. & Hafellner – SC
Phlyctis speirea G. Merr. – SC

**Phoma cladoniicola* Diederich, Kocourk & Etayo – WA
Physcia adscendens (Fr.) H. Olivier – SB, SC, SR
Physcia aipolia (Ehrh. ex Humb.) Furnr. – SB, SC, SR
Physcia biziana (A. Massal.) Zahlbr. – SR
Physcia dimidiata (Arnold) Nyl. – SC, SR
Physcia millegrana Degel. – SR
Physcia neglecta Moberg – SR
Physcia phaea (Tuck.) J.W. Thomson – EA, SB, SC, SR, WA
Physcia subtilis Degel. – SR
Physcia tenellula Moberg – SB, SC, SR, WA
Physcia tribacia (Ach.) Nyl. – SB, SC, SR
Physcia undulata Moberg – SR
Physconia enteroxantha (Nyl.) Poelt – SC, SM, SR, WA
Physconia fallax Essl. – SR
Physconia isidiigera (Zahlbr.) Essl. – SC, SM, SR, WA
Placidium boccanum (Servít) Breuss – SC, SR
Placidium squamulosum (Ach.) Breuss – SC, SR
Placynthiella icmalea Coppins & P. James – SC, SR
Placynthium nigrum (Hudson) Gray – SC
**Plectocarpon nashii* Hafellner – WA
Pleopsidium chlorophanum (Wahlenb.) Zopf – SC
**Polycoccum pulvinatum* (Eitner) R. Sant. – SC
**Polysporina arenacea* (H. Magn.) K. Knudsen & Kocourk. – SR
Polysporina simplex (Davies) Vězda – SC, SR
**Polysporina subfuscescens* (Nyl.) K. Knudsen & Kocourk. – SC, SR
Protoparmelia badia (Hoffm.) Hafellner – SC
Protoparmelia ryaniana v.d. Boom, Sipman & Elix – SC, SR, WA
Pseudosagedia aenea (Wallr.) Hafellner & Kalb – SC, SR
Pseudosagedia cestrensis (Tuck. ex Michener) R.C. Harris – SR
Pseudosagedia chlorotica (Ach.) Hafellner & Kalb – SC, SR
Psora brunneocarpa Timdal – SR
Psora pacifica Timdal – SC, SR
Psorotichia schaeferi (A. Massal.) Arnold – SR
Punctelia borreri (Sm.) Krog – SC, SR
Punctelia jeckeri (Roum.) Kalb – SC, SR
Pyrrhospora quernei (Dickson) Körber – SC, SM, SR, WA
Pyrrhospora varians (Ach.) R.C. Harris – SC, SR
Ramalina canariensis J. Steiner – EA, SB, SC, SM, SR, WA
Ramalina farinacea (L.) Ach. – SC, SM, SR, WA
Ramalina leptocarpha Tuck. – SC, SM, SR, WA
Ramalina menziesii Taylor – SC, SR
Ramalina pollinaria (Westr.) Ach. – SC, SR
Ramalina subleptocarpha Rundel & Bowler – SB, SC, SM, SR, WA
Rinodina bolanderi H. Magn. – SC, SM, SR, WA
Rinodina brouardii B. de Lesd. – SC
Rinodina californiensis Sheard – SC
Rinodina capensis Hampe ex A. Massal. – SC, SR
Rinodina endospora Sheard – SC, SR
Rinodina gennarii Bagl. – EA, SC, SR
Rinodina griseosoralifera Coppins – SM
Rinodina hallii Tuck. – SC
Rinodina herrei H. Magn. – SC, SR
Rinodina innata Sheard – SC, SR
Rinodina intermedia Bagl. – SC, SR
Rinodina marysvillensis H. Magn. – SC, SR
Rinodina oxydata (A. Massal.) A. Massal. – SC

Rinodina pacifica Sheard – SB
Rinodina poeltiana Giralt & W. Obermayer – SC, SR
Rinodina santae-monicae H. Magn. – SC, SR
Roccella gracilis Bory – SB, SR, WA
Roccellina conformis Tehler – SR
Roccellina franciscana (Zahlbr. ex Herre) Follmann – SR
**Roselliniella cladoniae* (Anzi) Matzer & Hafellner – SR
Sarcogyne arenosa (Herre) K. Knudsen & Standley – SC, WA
Sarcogyne privigna auct. non (Ach.) A. Massal. – SR
Sarcogyne regularis Körber – SM
†Sarea resinae (Th. Fr.) Kuntze – SR
Schizopelte californica Th. Fr. – EA, SB, SC, SM, SR, WA
Schizopelte crustosa Ertz & Tehler – SC, SR
Schizopelte parishii (Hasse) Ertz & Tehler – EA, SB, SC, SM, SR, WA
Scoliciosporum umbrinum (Ach.) Arnold – SR
Seiophora californica (Sipman) Fröden – SB, SM, SR
Sigridea californica (Tuck.) Tehler – SC, SR
**Skyttea pertusariicola* Diederich & Etayo – SR
**Skyttea tavaresiae* R. Sant., Etayo & Diederich – SM
Solenopsora crenata (Herre) Zahlbr. – SB, SC
Sparria cerebriformis (Egea & Torrente) Ertz & Tehler – SC, SR
**Sphinctrina leucopoda* Nyl. – SC, SR
Staurothele areolata (Ach.) Lettau – SR
Staurothele drummondii (Tuck.) Tuck. – SR
Sticta fuliginosa (Hoffm.) Ach. – SR
**Stigmidium californicum* K. Knudsen & Kocourk. – EA, SR
**Stigmidium epistigmellum* (Nyl. ex Vouaux) Kocourk. & K. Knudsen – EA, SB, SC, SM, SR, WA
**Stigmidium epixanthum* Hafellner – SR, WA
**Stigmidium hesperium* Kocourk., K. Knudsen & Diederich – SR
**Stigmidium pumilum* (Lettau) Matzer & Hafellner – SR
**Stigmidium squamariae* (B. de Lesd.) Cl. Roux & Triebel – SR
**Stigmidium xanthoparmeliarum* Hafellner – SR
**Syzygospora physciacearum* Diederich – SR, WA
Teloschistes chrysophthalmus (L.) Th. Fr. – SC, SR
Teloschistes flavicans (Swartz) Norman – SC, SM, SR
Tephromela atra (Hudson) Hafellner – SC, SM, SR
Tephromela nashii Kalb – SC, SM, SR
Thelenella muscorum (Th. Fr.) Vainio – SC
Thelomma mammosum (Hepp A.) L. Tibell – EA, SB, SC, SM, SR, WA
Thelomma santessonii L. Tibell – SC, SM, SR, WA
Thelopsis isiaca Stizenb. – SC
Toninia aromatica (Turner) A. Massal. – SB, SC, SM, SR
Toninia nashii Timdal – SM, SR
Toninia ruginosa ssp. *pacifica* Timdal – SC, SR
Toninia sedifolia (Scop.) Timdal – SM
**Toninia subdispersa* (Nyl. ex Hasse) K. Knudsen – EA, SC, SM, SR, WA
**Toninia subtalparum* v.d. Boom – SR
Topelia californica P.M. Jørg. & Vezda – SC, SR
Tornabea scutellifera (With.) J.R. Laundon – SR
Trapelia coarctata (Turner ex Small) M. Choisy – SC, SR
Trapelia glebulosa (Sw.) J.R. Laundon – SC, SR, WA
Trapeliopsis flexuosa (Fr.) Coppins & P. James – SC, SM, SR
Trapeliopsis glaucopholis (Nyl. ex Hasse) Printzen & McCune – SC, SR
**Tremella dendrographae* Diederich & Tehler – SR
**Tremella nieblae* Diederich – SR
**Tremella parmeliarum* Diederich – SR, WA

**Tremella ramalinae* Diederich – SC
Tuckermanopsis chlorophylla (Willd.) Hale – SC, SR
Tuckermanopsis orbata (Nyl.) M.J. Lai – SC, SR
Umbilicaria phaea Tuck. – SC, SR
Usnea brasiliensis (Zahlbr.) Motyka – SC
Usnea brattiae P. Clerc – SC, SM, SR
Usnea ceratina Ach. – SC, SR
Usnea cornuta Körber – SC, SR
Usnea dasaea Stirton – SC, SM, SR
Usnea esperantiana P. Clerc – SC, SM, SR
Usnea flavocardia Räsänen – SC, SM, SR, WA
Usnea fragilescens Lynge – SC, SR
Usnea fulvovirens (Räsänen) Räsänen – SC
Usnea glabrata Vainio – SC, SR
Usnea hirta (L.) F.H. Wigg. – SC
Usnea lapponica Vainio – SC, SM, SR
Usnea mutabilis Stirton – SC
Usnea rubicunda Stirton – SC, SM, SR
Usnea scabrata Nyl. – SC
Usnea subfloridana Stirton – SC, SR
Usnea subscabrosa Nyl. ex Motyka – SC
Vahliella californica (Tuck.) P.M. Jørg. – SC
Vahliella labrata (P.M. Jørg.) P.M. Jørg. – SC
Vahliella leucophaea (Vahl.) P.M. Jørg. – SB, SC
Verrucaria adelminienii Zschacke – SR
Verrucaria aspecta Breuss – SR
Verrucaria calkinsiana Servit – SM, SR, WA
Verrucaria cetera Breuss – SM
Verrucaria floerkeana Dalla Torre & Sarnth. – SC, SM
Verrucaria furfuracea (B. de Lesd.) Breuss – SM, SR
Verrucaria fusca Pers. ex Ach. – SR
Verrucaria fuscoatroides Servit – SR
Verrucaria mimicrans Servit – SM, SR
Verrucaria muralis Ach. – SM, SR
Verrucaria othmarii (B. de Lesd.) K. Knudsen & L. Arcadia – SC
Verrucaria papillosa Pers. ex Ach. – SM, SR
Verrucaria rufofuscella Servit – SR
Verrucaria sandstedei B. de Lesd. – SR
Verrucaria subdivisa Breuss – EA, SB, SC, SM, SR, WA
Verrucaria viridula (Schrader) Ach. – SR
**Vouauxiella lichenicola* (Lindsay) Petr. & Sydow – SR
Wahlenbergiella striatula (Wahlenb.) Gueidan & Thüs – WA
Waynea californica Moberg – SC, SR
Xanthomendoza fallax (Hepp ex Arnold) Søchting, Kärnefelt & S.Y. Kondr. – SC, SR
Xanthomendoza fulva (Hoffm.) Søchting, Kärnefelt & S.Y. Kondr. – SM, SR
Xanthomendoza oregana (Gyelnik) Søchting, Kärnefelt & S.Y. Kondr. – SC, SM, SR
Xanthoparmelia commonii Elix & T.H. Nash – SR
Xanthoparmelia cumberlandia (Gyelnik) Hale – SC, SR
Xanthoparmelia lineola (E.C. Berry) Hale – SC, SR
Xanthoparmelia mexicana (Gyelnik) Hale – SC, SR, WA
Xanthoparmelia neotartica Hale – SR
Xanthoparmelia standaertii (Gyelnik) Hale – SC, SR
Xanthoparmelia subramigera (Gyelnik) Hale – SC, WA
Xanthoparmelia verruculifera (Nyl.) O. Blanco et al. – SC, SR
Xanthoria ascendens S.Y. Kondr. – EA, SM, SR, WA
Xanthoria candelaria (L.) Th. Fr. – EA, SB, SC, SM, SR, WA

Xanthoria elegans (Link) Th. Fr. – SR
Xanthoria parietina (L.) Th. Fr. – SB
Xanthoria pollinarioides L. Lindblom & D.M. Wright – SM
Xanthoria polycarpa (Hoffm.) Rieber – SC, SR
Xanthoria tenax L. Lindblom – SB, SC, WA

PART 1B - INDEX OF LICHENICOLOUS FUNGI

**Arthonia diploiciae* Calat. & Diederich – WA
 **Arthonia molendoi* (Heufl. ex Frauenf.) R. Sant. – SR
 **Arthonia phaeophysciae* Grube & Matzer – SC
 **Arthrurhaphis aeruginosa* R. Sant. & Tønsberg – SR
 **Buelliella inops* (Triebel & Rambold) Hafellner – SB
 **Buelliella physciicola* Poelt & Hafellner – SC, SR
 **Cercidospora cladoniicola* Alstrup – SR
 **Dacampia lecaniae* Kocourk. & K. Knudsen – WA
 **Dactylospora pleiosperma* Triebel – SC, SR
 **Dactylospora saxatilis* (Schaerer.) Hafellner – SR
 **Endococcus matzeri* D. Hawksw. & Iturr. – SR
 **Endococcus stigma* (Körb) Stizenb. – SR
 **Endococcus thelommatidis* Kocourk. & K. Knudsen – SR
 **Intralichen baccisporus* D. Hawksw. & M.S. Cole – SR
 **Intralichen lichenicola* M.S. Christ. & D. Hawksw. – SR
 **Lichenocodium erodens* M.S. Christ. & D. Hawksw. – SR
 **Lichenocodium lecanorae* (Jaap) D. Hawksw. – SR
 **Lichenocodium lichenicola* (P. Karst.) Petr. & Syd. – SR
 **Lichenodiplis lecanoricola* (M.S. Cole & D. Hawksw.) Diederich – SR
 **Lichenostigma amplum* Calat. & Hafellner – SR
 **Lichenostigma bolacinae* Nav.-Ros., Calat. & Hafellner – SR
 **Lichenostigma cosmopolites* Hafellner & Calat. – SC, SR
 **Lichenostigma radicans* Calat. & Barreno – SR
 **Lichenostigma rugosum* Thor – SR
 **Lichenostigma subadians* Hafellner, Calat. & Nav.-Ros. – SR
 **Marchandiomyces corallinus* (Roberge) Diederich & D. Hawksw. – SR
 **Muellerella lichenicola* (Sommerf. ex Fr.) D. Hawksw. – SR
 **Opegrapha anomea* Nyl. – SC, SR
 **Phaeosporobolus usneae* D. Hawksw. & Hafellner – SC
 **Phoma cladoniicola* Diederich, Kocourk. & Etayo – WA
 **Plectocarpon nashii* Hafellner – WA
 **Polysporina arenacea* (H. Magn.) K. Knudsen & Kocourk. – SR
 **Polysporina subfuscens* (Nyl.) K. Knudsen & Kocourk. – SC, SR
 **Roselliniella cladoniae* (Anzi) Matzer & Hafellner – SR
 **Skyttea pertusariicola* Diederich & Etayo – SR
 **Skyttea tavaresiae* R. Sant., Etayo & Diederich – SM
 **Sphinctrina leucopoda* Nyl. – SC, SR
 **Stigmidium californicum* K. Knudsen & Kocourk. – EA, SR
 **Stigmidium epistigmellum* (Nyl. ex Vouaux) Kocourk. & K. Knudsen – EA, SB, SC, SM, SR, WA
 **Stigmidium epixanthum* Hafellner – SR, WA
 **Stigmidium hesperium* Kocourk., K. Knudsen & Diederich – SR
 **Stigmidium pumilum* (Lett.) Matzer & Hafellner – SR
 **Stigmidium squamariae* (B. de Lesd.) Cl. Roux & Triebel – SR
 **Stigmidium xanthoparmeliarum* Hafellner – SR
 **Syzygospora physciacearum* Diederich – SR, WA
 **Toninia subdispersa* (Nyl. ex Hasse) K. Knudsen – EA, SM, SR, WA
 **Toninia subtalparum* v.d. Boom – SR
 **Tremella dendrographae* Diederich & Tehler – SR

- **Tremella nieblae* Diederich – SR
- **Tremella parmeliarum* Diederich – SR, WA
- **Tremella ramalinae* Diederich – SC
- **Vouauxiella lichenicola* (Lindsay) Petrak & Sydow – SC

PART 1C - INDEX OF ALLIED FUNGI

- †*Arthonia beccariana* (Bagl.) Stizenb. – SC, SR
- †*Arthonia subdispuncta* Nyl. ex Hasse – EA
- †*Arthopyrenia plumbaria* (Steinz.) R.C. Harris – SR
- †*Julella vitrispora* (Cooke & Harkness) M.E. Barr – SC
- †*Mycocalicium subtile* (Persoon) Szatala – SC, SR
- †*Mycocalicium victoriae* (Knight ex F. Wilson) Tibell – SC
- †*Naetrocymbe punctiformis* (Pers.) A. Massal. – WA
- †*Sarea resinae* (Th. Fr.) Kuntze – SR

PART 1D - FUNGAL FAMILIES OF LICHENS, LICHENICOLOUS FUNGI AND ALLIED FUNGI

***Acarosporaceae* Zahlbr.**

- Acarospora* A. Massal. – 11 species
- Myriospora* Nägeli ex Uloth – 2 species
- Pleopsidium* Körber – 1 species
- Polysporina* Vězda – 3 species
- Sarcogyne* Flotow – 3 species

***Arthoniaceae* Reichenb.**

- Arthonia* Ach. – 12 species

***Arthopyreniaceae* W. Watson**

- Arthopyrenia* A. Massal. – 2 species

***Arthrorhaphidaceae* Poelt & Hafellner**

- Arthrorhaphis* Th. Fr. – 1 species

***Candelariaceae* Hakul.**

- Candelaria* A. Massal. – 1 species
- Candelariella* Müll. Arg. – 4 species

***Catillariaceae* Hafellner**

- Catillaria* A. Massal. – 4 species
- Solenopsora* A. Massal. – 1 species

***Chrysotrichaceae* Zahlbr.**

- Chrysothrix* Mont. – 2 species

***Cladoniaceae* Zenker**

- Cladonia* Hill ex P. Browne – 7 species

***Collemataceae* Zenker**

- Collema* F.H. Wigg. – 6 species
- Leptogium* (Ach.) Gray – 1 species

***Corticaceae* Herter**

- Marchandiomyces* Diederich & D. Hawksw. – 1 species

***Dacampiaceae* Körber.**

- Dacampia* A. Massal. – 1 species
Polycoccum Saut. ex Körber – 1 species
- Dactylosporaceae*** Bellem. & Hafellner
Dactylospora Körber – 2 species
- Graphidaceae*** Dumort. (including *Thelotrema* (Nyl.) Stizenb.)
Diploschistes Norman – 5 species
- Gyalectaceae*** (A. Massal.) Stizenb.
Gyalecta Ach. – 2 species
- Fuscideaceae*** Hafellner
Maronea A. Massal. – 1 species
- Lecanoraceae*** Körber.
Carbonea (Hertel) Hertel – 1 species
Lecanora Ach. – 27 species
Lecidella Körber – 7 species
Pyrrhospora Körber – 2 species
- Lecideaceae*** Chevall.
Lecidea Ach. – 4 species
- Leprocaulaceae*** Lendemer & Hodkinson ined.
Leprocaulon Nyl. – 4 species
- Lichenotheliaceae*** Henssen
Lichenostigma Hafellner – 6 species
- Lichinaceae*** Nyl.
Harpidium Körber – 1 species
Lempholemma Körber – 1 species
Lichinella Nyl. – 2 species
Psorotichia A. Massal. – 1 species
- Lobariaceae*** Chevall.
Sticta (Schreber) Ach. – 1 species
- Megalariaceae*** Hafellner
Megalaria Hafellner – 1 species
- Megalosporaceae*** Lumbsch, Feige & K. Schmitz
Aspicilia A. Massal. – 4 species
- Mycoblastaceae*** Hafellner
Tephromela M. Choisy – 2 species
- Mycocaliciaceae*** A.F.W. Schmidt
Mycocalicium Vain. ex Reinke – 2 species
- Mycosphaerellaceae*** Lindau
Stigmidium Trevis. – 7 species
- Nephromataceae*** Wetmore ex J.C. David & D. Hawksw.
Nephroma Ach. – 1 species

Naetrocymbaceae Höhn. ex R. C. Harris
Naetrocymbe Körber – 1 species

Ochrolechiaceae R.C. Harris ex Lumbsch & I. Schmitt
Ochrolechia A. Massal. – 4 species

Ophioparmaceae R.W. Rogers & Hafellner
Hypocenomyce M. Choisy – 1 species

Opegraphaceae Stizenb. (generic taxonomy following Ertz and Tehler (2010))
Opegrapha Ach. – 4 species
Paraschismatomma Ertz & Tehler – 1 species
Sparria Ertz & Tehler – 1 species

Pannariaceae Tuck.
Fuscopannaria P.M. Jørg. – 2 species
Moelleropsis Gyeln. – 1 species
Vahliella P.M. Jørg. – 3 species

Parmeliaceae Zenker
Evernia Ach. – 1 species
Flavoparmelia Hale – 1 species
Flavopunctelia Hale – 2 species
Hypogymnia (Nyl.) Nyl. – 7 species
Hypotrachyna (Vainio) Hale – 1 species
Kaernefeltia Thell & Goward – 1 species
Parmelia Ach. – 1 species
Parmotrema A. Massal. – 5 species
Protoparmelia M. Choisy – 2 species
Punctelia Krog – 2 species
Tuckermanopsis Gyelnik – 2 species
Usnea Dill. ex Adans. – 17 species
Xanthoparmelia (Vainio) Hale – 8 species

Peltigeraceae Dumort.
Peltigera Willd. – 1 species

Peltulaceae Büdel
Peltula Nyl. – 6 species, 2 varieties

Pertusariaceae Körber ex Körber
Pertusaria DC. – 13 species

Phlyctidaceae Poelt & Vězda ex J.C. David & D. Hawksw.
Phlyctis (Wallr.) Flot. – 1 species

Physciaceae Zahlbr. (including Caliciaceae Chevall.)
Amandinea M. Choisy – 1 species
Buellia De Not. – 16 species
Calicium Pers. – 2 species
Cyphelium Ach. – 1 species
Dimelaena Norman – 3 species
Diploicia A. Massal. – 1 species
Diplotomma Flot. – 2 species
Heterodermia Trevis. – 3 species

Hyperphyscia Müll. Arg. – 2 species
Mobergia H. Mayrhofer, Sheard & Matzer – 1 species
Phaeophyscia Moberg – 1 species
Physcia (Schreber) Michx. – 11 species
Physconia Poelt – 3 species
Rinodina (Ach.) Gray – 16 species
Thelomma A. Massal. – 2 species
Tornabea Oesth. – 1 species

Placynthiaceae Å.E. Dahl

Koerberia A. Massal. – 1 species
Leptochidium M. Choisy – 1 species
Placynthium (Ach.) Gray – 1 species

Pilocarpaceae Zahlbr.

Micarea Fr. – 2 species

Porinaceae Reichenb.

Pseudosagedia (Müll. Arg.) M. Choisy – 3 species (following Harris 1995)

Psoraceae Zahlbr.

Psora Hoffm. – 2 species

Ramalinaceae C. Agardh

Adelolecia Hertel & Hafellner – 1 species
Bacidia De Not. – 3 species
Bacidina Vězda – 1 species
Cliostomum Fr. – 1 species
Lecania A. Massal. – 15 species
Niebla Rundel & Bowler – 10 species
Ramalina Ach. – 6 species
Toninia A. Massal. – 5 species, 1 subspecies
Waynea Moberg – 1 species

Roccellaceae Chevall.

Bactrospora A. Massal. – 4 species and 1 variety
Cresponea Egea & Torrente – 1 species
Dendrographa Darb. – 2 species
Dirina Fr. – 1 species
Lecanactis Körber – 2 species
Lecanographa Egea & Torrente – 7 species
Plectocarpon Fée – 1 species
Roccella DC. – 1 species
Roccellina Darb. – 2 species
Schizopelte Th. Fr. – 3 species
Sigridea Tehler – 1 species

Scoliciosporaceae Hafellner

Scoliciosporum A. Massal. – 1 species

Sphinctrinaceae M. Choisy

Sphinctrina Fr. – 1 species

Stereocaulaceae Chevall.

Lepraria Ach. – 3 species

Stictidaceae Fr.

Ingvariella Guderley & Lumbsch – 1 species (Fernández-Brime et al. 2011)

Thelopsis Nyl. – 1 species

Topelia P.M. Jørg. & Vězda – 1 species

Syzygosporaceae Jülich

Syzygospora G.W. Martin – 1 species

Teloschistaceae Zahlbr.

Caloplaca Th. Fr. – 28 species, 1 subspecies, 1 varieties

Fulgensia A. Massal. & De Not. – 1 species

Seiophora Poelt – 1 species

Teloschistes Norman – 2 species

Xanthomendoza S.Y. Kondr. & Kärnefelt – 3 species

Xanthoria (Fr.) Th. Fr. – 7 species

Thelenellaceae H. Mayrhofer

Julella Fabre – 1 species

Thelenella Nyl. – 1 species

Tremellaceae Fr. 1821

Tremella Pers. – 4 species

Trapeliaceae M. Choisy *ex* Hertel

Placynthiella Elenkin – 1 species

Sarea Fr. – 1 species

Trapelia M. Choisy – 2 species

Trapeliopsis Hertel & Gotth. Schneider – 2 species

Umbilicariaceae Chevall.

Umbilicaria Hoffm. – 1 species

Verrucariaceae Zenker

Bagliettoa A. Massal. – 1 species

Clavascidium Breuss – 1 species

Dermatocarpon Eschw. – 2 species

Endocarpon Hedwig – 5 species

Muellerella Hepp – 1 species

Placidium A. Massal. – 2 species

Staurothele Norman – 2 species

Verrucaria Schrader – 16 species

Wahlenbergiella Gueidan & Thüs – 1 species

Genera of Uncertain Placement

Lichenicolous anamorphic fungi

Intralichen D. Hawksw. & M.S. Cole – 2 species

Lichenodiplis Dyko & D. Hawksw. – 2 species

Licheniconium Petrak & H. Sydow – 3 species

Phaeosporobolus D. Hawksw. & Hafellner – 1 species

Phoma Sacc. – 1 species

Vouauxiella Petr. & Sydow – 1 species

Dothideomycetes

Buelliella Fink – 2 species

Cercidospora Körber – 1 species

Endococcus Nyl. – 3 species

Sordariales

Roselliniella Vainio – 1 species

Helotiales

Skyttea Sherwood, D. Hawksw. & Coppins – 2 species

Ascomycetes

Normandina Nyl. – 1 species

PART 2 - ANNOTATED TAXONOMIC CHECKLIST OF LICHENS, LICHENICOLOUS FUNGI, AND ALLIED FUNGI

Acarospora americana H. Magn., Kongl. Vetensk. Svenska Acad. Handl. ser. 3, 7: 198 (1929). Description: Knudsen et al. 2011. Substrate: non-calcareous rock. World distribution: North and South America. CINP distribution: SR.

PLATE 1, FIG. C.

NOTES. – *Acarospora americana* is common in California and throughout North America. It occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Army Road, on sandstone, *Knudsen 7411.3 & Baguskus* (UCR).

Acarospora elevata H. Magn., Kongl. Vetensk. Svenska Acad. Handl. ser. 3, 7: 179 (1929). Description: Knudsen 2007a. Substrate: non-calcareous rock, especially granite. World distribution: North America. CINP distribution: SC.

NOTES. – *Acarospora elevata* was described from an H.E. Hasse collection made in the San Gabriel Mountains of southern California. It is common in the Rocky Mountains and frequent in the mountains of southern California. It is currently known from CINP from a single collection from the High Mountains at the east end of Santa Cruz Island. Some poorly developed specimens from Santa Rosa Island and from West Anacapa, identifiable only to genus and with deeply fissured areoles, are probably *A. elevata*.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Channel Islands National Park, Santa Cruz Island, High Mountains, on small volcanic rock, *Knudsen 12011* (UCR).

Acarospora fuscata (Schrader) Th. Fr., Lich. Scand. 1: 215 (1872). Description: Knudsen 2007a. Substrate: non-calcareous rocks. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Acarospora fuscata* is a cosmopolitan species especially common in eastern North America and Europe. In southern California it is frequent in the mountains on north slopes and in watersheds, especially above 3000 feet, but so far appears rare in the Sierra Nevada Mountains and in the coastal ranges of the central coast. In the past, the name was often misapplied to any brown *Acarospora* specimen with gyrophoric/lecanoric acids from North and South America. In CINP it is known from only Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Sierra Blanca on the way to Ragged Mountain, *Bratt 6411 & Timdal* (ASU, SBBG; det. Knudsen).

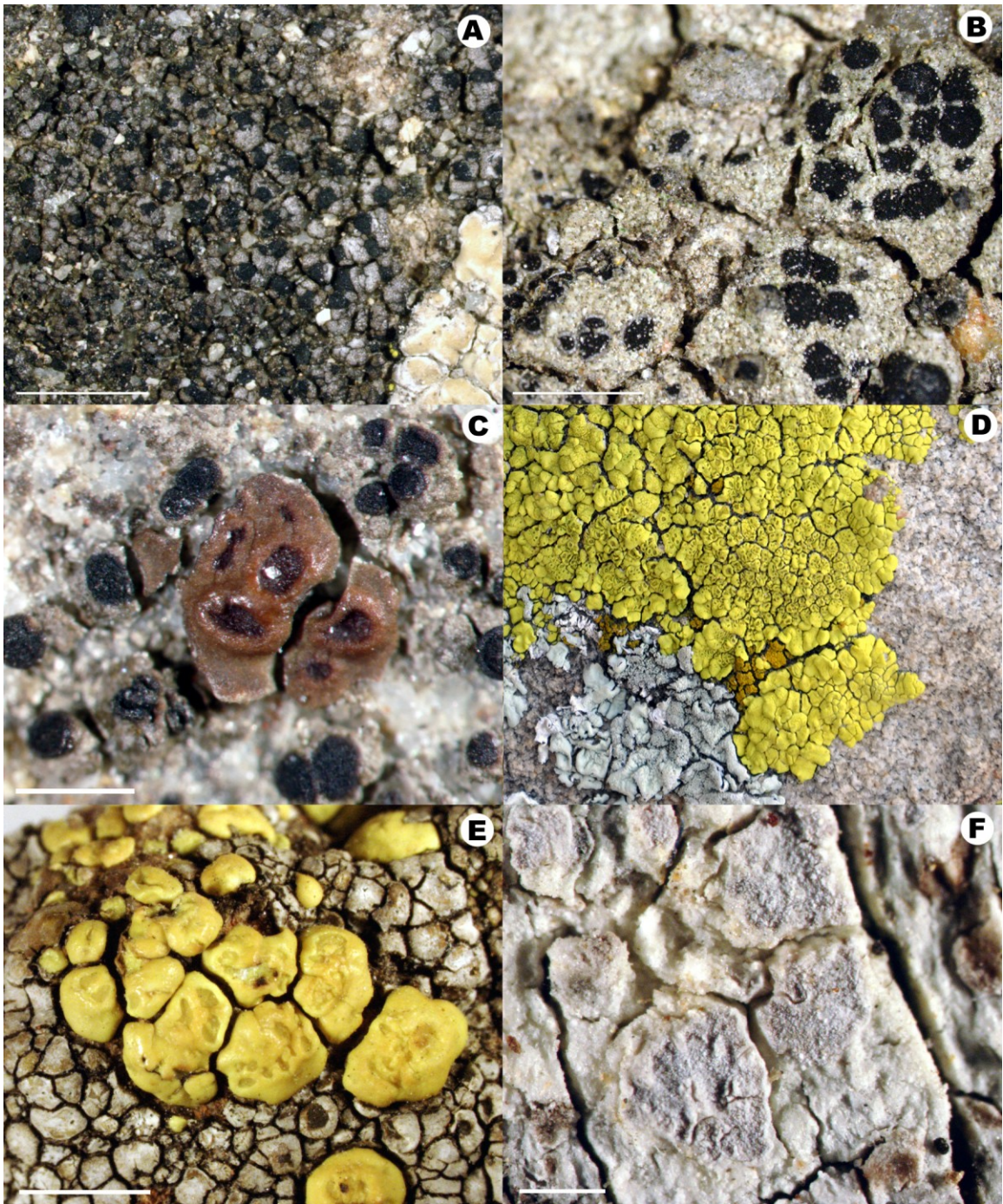


Plate 1, A, *Verrucaria dacryodes* (Knudsen 11736, UCR). B, *Rinodina terricola* (Knudsen 6203, UCR). C, *Acarospora americana* (Harris 12143, NY). D, *A. socialis* (photograph in the field by Jana Kocourková). E, *A. robiniae* (Schoeninger 411, UCR). F, *Arthonia pruinata* (Knudsen 11398, UCR). Scales = 1.0 mm in A, B, D; 0.5 mm in C and F.

Acarospora obnubila H. Magn., Kongl. Svenska Vetensk. Acad. Handl. ser. 3, 7: 263 (1929). Description: Knudsen 2007a. Substrate: non-calcareous rock, sometimes overgrowing other lichens. World distribution: North America. CINP distribution: SR.

NOTES. – *Acarospora obnubila* was described from Arizona and is common in western North America, especially in California. In CINP it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Quemada Canyon, on rock, *Knudsen 8693.2 & Kocourková* (UCR).

Acarospora obpallens (Nyl. ex Hasse) Zahlbr., Beih. Bot. Centralbl. 13: 161 (1902). Description: Knudsen 2007a. Substrate: non-calcareous rock, sandstone, soil. World distribution: North and South America. CINP distribution: SC, SR.

NOTES. – *Acarospora obpallens* was originally described from the city of Santa Monica based on an H.E. Hasse collection growing on soil. The species is primarily saxicolous, but in coastal California is often terricolous, occurring in biological soil crusts. It is common in Arizona and southern California. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, in well developed biological soil crusts, *Knudsen 114108 & Chaney* (UCR).

Acarospora robiniae K. Knudsen, Lichen Flora of the Greater Sonoran Desert Region 3: 25 (2007). Description: Knudsen 2007a. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC, SR.

PLATE 1, FIG. E.

NOTES. – *Acarospora robiniae* is the only yellow species of *Acarospora* with gyrophoric acid that occurs in California. It was described from Santa Cruz Island and often grows with *Dimelaena radiata* as in the accompanying figure. The species occurs along the west coast of North America from Morro Rock in central California to Baja California Sur in Mexico. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Quemada Canyon, on rock, *Knudsen 8693.3 & Kocourková* (UCR).

Acarospora schleicheri (Ach.) A. Massal., Ric. Auton. Lich. Crost.: 27 (1852). Description: Knudsen 2007a. Substrate: soil. World distribution: Africa, Europe, North America. CINP distribution: SC, SM, SR.

NOTES. – *Acarospora schleicheri* is a terricolous lichen that occurs in biological soil crusts. It is infrequent throughout California. At the beginning of the 20th century the species was common in Lake Elsinore, the Santa Monica Mountains and Verdugo Hills of southern California (Hasse 1913). It is still widespread in southern California but is rare at all of the sites we have recently studied. This taxon is the best evidence we have for a historical reduction of terricolous habitats and late successional biological soil crusts in southern California. The name *A. schleicheri* was misapplied by W.A. Weber to all species of yellow *Acarospora* (Knudsen 2004). *Acarospora schleicheri* is rare on San Miguel, Santa Cruz, and Santa Rosa Islands. It was probably almost extirpated by sheep and cattle grazing as well as the subsequent erosion of large areas.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on soil, *Knudsen 10584* (UCR).

Acarospora socialis H. Magn., Mycologia 21: 252 (1929). Description: Knudsen 2007a. Substrate: non-calcareous rock, rarely on consolidated soil, wood of a fence (only on Santa Rosa Island). World distribution: North America. CINP distribution: EA, WA, SM, SB, SC, SR.

NOTES.— This polymorphic yellow *Acarospora* was originally described from Santa Catalina Island. When well developed, it is easily identified by its stipe and yellowish underside (when not darkened by substrate interactions), but it is often depauperate. In some stressful situations it rarely produces a stipe, for instance when it occurs directly on coast above the spray zone or on hard vertical granite in full sun. The species produces abundant pycnidia and many populations are sterile. This is the most common yellow *Acarospora* in western North America and is a dominant in the Mojave and Sonoran Deserts. It is common on all of the north Channel Islands.

Selected voucher. — **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on rock, *Knudsen 5320* (UCR).

Acarospora terricola H. Magn., Kongl. Vetensk. Svenska Acad. Handl., ser. 3, 7: 157 (1929). Description: Knudsen 2007a. Substrate: soil, rarely on decaying non-calcareous rocks. World distribution: North America. CIMP distribution: SC.

NOTES. — *Acarospora terricola* was originally described from an H.E. Hasse collection made in the Santa Monica Mountains. The species is frequent on soil in southern California biological soil crusts. It is rare on the north Channel Islands where it is known from a single collection from Santa Cruz Island. This is another terricolous species that has probably been almost extirpated from the Channel Islands by grazing.

Voucher. — **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge south of Canada Cervida, in biological soil crust, *Knudsen et al. 8577* (UCR).

Acarospora thamnina (Tuck.) Herre, Bot. Gaz. 51: 290 (1911). Description: Knudsen 2007a. Substrate: non-calcareous rock. World distribution: Europe, North America. CIMP distribution: SC, SR.

NOTES. — *Acarospora thamnina* is common throughout the mountains of central and southern California. In it CIMP is known from Santa Cruz and Santa Rosa Island.

Selected voucher. — **U.S.A. CALIFORNIA.** Santa Rosa Island, below Black Mountain, on rock, *Wetmore 73533* (ASU, MIN; det. Knudsen).

Acarospora veronensis A. Massal., Ric. Auton. Lich. Crost.: 29, nr. 45, fig. 48 (1852). Description: Knudsen 2007a (where it was lumped with *A. americana*, the illustration of *A. veronensis* in that work corresponds to *A. americana*); Knudsen et al. 2011 (revision distinguishing *A. americana* and *A. veronensis*). Substrate: non-calcareous rock. World distribution: Europe, North America. CIMP distribution: SC, SR.

NOTES. — This taxon is a small brown *Acarospora* species that is easily confused with *A. americana* (which is more common in California). *Acarospora veronensis* is known from Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. — **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lopez Road above Jolla Vieja Canyon, on rock, *Knudsen 8777* (UCR).

Adelolecia sonora Hertel, Lichen Flora of the Greater Sonoran Desert Region 2: 17 (2004). Description: Hertel 2004. Substrate: noncalcareous rock. World distribution: North America. CIMP distribution: SM.

NOTES. — *Adelolecia sonora* is currently only known from the type locality in Baja Sur in Mexico and in California from San Miguel Island.

Voucher. — **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, *Nash 41442* (ASU).

Amandinea punctata (Hoffm.) Coppins & Scheidegger in Scheidegger, Lichenologist 25: 343 (1993). Description: Bungartz et al. 2007 (as *Buellia punctata*). Substrate: bark and wood, fences, not on rock in our area but commonly on rocks in Europe and eastern North America. World distribution: cosmopolitan (but probably heterogeneous). CIMP distribution: EA, SC, SM, SR, WA.

NOTES. – *Amandinea punctata* is one of the most common lichens in California. Its lecideine apothecia often cover the branches of trees and shrubs. In California it is often the only corticolous species in polluted areas. Interestingly it appears to also be a pioneer species, quickly reentering disturbed areas. Current molecular data does not apparently support the genus *Amandinea* as separate from *Buellia* (Scheidegger 2009) but this is not broadly accepted in Europe or North America. According to Bungartz et al. (2007) specimens from California may represent two taxa. *Buellia schaeferi* De Not., which has shorter, thinner ascospores and hardly any visible thallus, may also grow on bark on the Channel Islands. In CIMP *A. punctata* occurs on East and West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – U.S.A. CALIFORNIA. VENTURA CO.: East Anacapa Island, on unknown dead shrub, *Knudsen 5287* (UCR).

Arthonia atra (Pers.) A. Schneider, A Guide to the Study of Lichens: 131 (1898). Description: Ertz and Egea 2007 (as *Opegrapha atra*). Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SM.

NOTES. – *Arthonia atra* is rare in California, with most of the collections from the central California coast and Santa Catalina Island. It is only known from San Miguel Island.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: San Miguel Island, Willow Canyon, on willows, *Nash 41317* (ASU; det. Ertz).

†*Arthonia beccariana* (Bagl.) Stizenb., Ber. Tätigk. St. Gall naturw. Gesellsch. 1889/90: 200 (1891). Description: Grube 2007. Substrate: smooth bark. World distribution: Europe, North America. CIMP distribution: SC, SR.

NOTES. – The non-lichenized fungus *Arthonia beccariana* is infrequent in southern California. It was collected on Santa Cruz and Santa Rosa Islands.

Selected voucher. – U.S.A. CALIFORNIA. Santa Rosa Island, Cherry Canyon, on bark, *Sundin 1466* (ASU).

**Arthonia diploiciae* Calat. & Diederich, Mycotaxon 65: 366 (1995). Description: Grube 2007. Substrate: *Diploicia canescens*. World distribution: Africa, Europe, North America. CIMP distribution: EA, WA.

NOTES. – This lichenicolous fungus is parasitic on *Diploicia canescens*, which is common on all of the Channel Islands. *Arthonia diploiciae* occurs on East and West Anacapa Island in CIMP.

Selected voucher. – U.S.A. CALIFORNIA. VENTURA CO.: West Anacapa Island, above Rat Rock, on *Diploicia canescens*, *Kocourková & Knudsen* (PRM 915316).

Arthonia gerhardii Egea & Torrente, Flechten Follmann: 195 (1995). Description: Grube 2007. Substrate: non-calcareous rock. World distribution: North America. CIMP distribution: SR.

NOTES. – The grayish-white thallus of *Arthonia gerhardii* looks similar to *A. infectans* and occurs in the same communities. It is a rare species, known from only from Baja California and Santa Rosa Island. We have not located any extant populations in Channel Islands National Park.

No vouchers were examined for this study.

Arthonia glebosa Tuck., Gen. Lich.: 221 (1872). Description: Grube 2007. Substrate: soil. World distribution: Asia, North America. CINP distribution: SC.

NOTES. – *Arthonia glebosa* is infrequent in central and southern California in biological soil crusts. It occurs on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon, Bratt 3069 & Larson (SBBG).

Arthonia infectans Egea & Torrente, Flechten Follmann: 196 (1995). Description: Grube 2007. Substrate: non-calcareous rock, lichens. World distribution: North America (California endemic). CINP distribution: SR.

NOTES. – *Arthonia infectans* is a rare endemic species only known from three sites: the type locality in Monterey County, Arlington Canyon on Santa Rosa Island, and Point Dume in the Santa Monica Mountains. It has a white thallus with C+ red reaction caused by an unknown exolite and ascospores with 3-to-4 septa. It is a juvenile parasite on *Lecanographa hypothallina* and *Sparria cerebriformis* (Kocourková et al. 2012), developing an independent lichenized thallus.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Arlington Canyon, on *Lecanographa hypothallina*, Knudsen et al. 8721 (UCR).

Arthonia lecanactidea Zahlbr., Beih. Bot. Centralbl. 13: 155 (1902). Description: Grube 2007. Substrate: smooth bark. World distribution: North America (California endemic). CINP distribution: WA.

NOTES. – *Arthonia lecanactidea* is a little known California endemic that grows on the smooth bark of coastal chaparral, possibly only on *Lycium californicum* Nutt., the phorophyte of the type collection. It was originally collected in San Pedro at White Point by H.E. Hasse. In CINP it occurs on West Anacapa Island.

Voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, above Rat Rock, on *Lycium californicum*, Knudsen 10646 & Kocourková (UCR).

Arthonia madreana Egea & Torrente, Flechten Folimann: 199 (1995). Description: Grube 2007. Substrate: non-calcareous rock. World distribution: North America (California endemic). CINP distribution: SR.

NOTES. – *Arthonia madreana* is endemic to Santa Rosa Island and is currently known from only a single population in Lobo Canyon.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, Knudsen 11397 (UCR).

**Arthonia molendoi* (Heufl. ex Frauenf.) R. Sant., Thunbergia 3: 2 (1986). Description: Grube 2007. Substrate: *Caloplaca* and *Xanthoria* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Arthonia molendoi* is lichenicolous on *Caloplaca* and *Xanthoria* species. It is probably frequent in California (Kocourková et al. 2012). In CINP it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Caloplaca coralloides*, Kocourková & Knudsen s.n. (PRM 909650).

**Arthonia phaeophysciae* Grube & Matzer, Bibl. Lichenol. 68: 10 (1997). Description: Grube 2007. Substrate: *Phaeophyscia*. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – The lichenicolous fungus *Arthonia phaeophysciae* is probably infrequent in California. In CINP it occurs on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Central Valley, on *Phaeophyscia hirsuta* on exposed oak root, *Weber & Bratt s.n.* (GZU; det. Hafellner).

Arthonia pruinata (Pers.) Steud. ex A.L. Sm., Monogr. Brit. Lich. 2: 214 (1911). Description: Grube 2007. Substrate: bark, especially on oaks. World distribution: Africa, Europe, North America. CINP distribution: EA, SB, SC, SR, WA.

PLATE 1, FIG. F.

NOTES. – *Arthonia pruinata* is the most common lichenized *Arthonia* on trees in coastal California. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on mature bark of *Heteromeles arbutifolia*, *Knudsen 11928* (UCR).

†*Arthonia subdispuncta* Nyl. ex Hasse, Bull. Torrey Bot. Club 24: 448 (1897). Description: Grube 2007. Substrate: caudex of *Leptosyne gigantea*. World distribution: North America (California endemic). CINP distribution: EA.

NOTES. – The non-lichenized fungus *Arthonia subdispuncta* is a symbiont on the caudex of *Leptosyne gigantea* Kellogg. The species was described from Point Dume in the Santa Monica Mountains where it is now extirpated. It is currently only known in California from East Anacapa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on *Leptosyne gigantea*, *Knudsen 10748* (UCR).

Arthopyrenia lyrata R.C. Harris in Tucker & R.C. Harris, Bryologist 83: 6 (1980). Description: Aptroot 2002a. Substrate: bark. World distribution: North America. CINP distribution: SC.

NOTES. – *Arthopyrenia lyrata* forms beautiful white patches on the smooth bark of phorophytes. It is common on the central coast of California. The species is considered part of the subtropical element in the California lichen biota and in CINP it occurs on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon, *Weber 80225* (ASU; det. Aptroot).

†*Arthopyrenia plumbaria* (Stizenb. ex Hasse) R.C. Harris in Egan, Bryologist 90: 163 (1987). Description: Aptroot 2002a. Substrate: bark, sometimes wood. World distribution: North America. CINP distribution: SR.

NOTES. – The usually non-lichenized *Arthopyrenia plumbaria* is infrequent along the coast of western North America. In CINP it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, between Cow and Lobo Canyon, on *Baccharis* wood, *Knudsen et al. 10558* (UCR).

**Arthrorhaphis aeruginosa* R. Sant. & Tønsberg, Lichenologist 26: 295 (1994). Description: Santesson & Tønsberg 1994. Substrate: *Cladonia* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Arthrorhaphis aeruginosa* is lichenicolous on *Cladonia* species where it forms a distinctive blue infection. It is currently only known in California from a single fertile collection made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Cladonia* species, *Kocourková & Knudsen s.n.* (PRM 909678, UCR).

Aspicilia glaucopsina (Nyl. ex Hasse) Hue, Lich. Morphol. et Anat. 112 (1912). Description: Owe-Larsson et al. 2007. Substrate: soil (including serpentine), *Selaginella bigloveii*, disintegrating granite and crumbling sandstone. World distribution: North America (California endemic). CINP distribution: SR.

NOTES. – *Aspicilia glaucopsina* is infrequent in southern and central California. The type of *Aspicilia glaucopsina* was collected by H.E. Hasse on decaying granite in the Santa Monica Mountains (Hasse 1913). *Aspicilia glaucopsina* is usually terricolous, occurring especially in biological soil crusts on the terraces created by California spike moss, *Selaginella bigloveii* L. Underw. It often coats the branches of spike moss creating impressive specimens. It is an indicator species of Spike Moss Terrace, a successional biological soil crust community in California (Hernandez & Knudsen 2012). It occurs on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on soil, *Knudsen 11417 & Chaney* (UCR).

Aspicilia pacifica Owe-Larss. & A. Nordin, Lichen Flora of the Greater Sonoran Desert Region, 3: 97 (2007). Description: Owe-Larsson et al. 2007. Substrate: non-calcareous rocks. World distribution: North America. CINP distribution: EA, SC, SR, WA.

PLATE 2, FIG. A.

NOTES. – *Aspicilia pacifica* is a common maritime species along the coast from Baja California to at least as far north as Monterey County. The type of *A. pacifica* was collected on Santa Cruz Island. Some specimens have low concentrations of exolites and the spot text reaction is best seen in squash preparations under a light microscope. It is common on Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on basalt, *Knudsen 10860* (UCR).

Aspicilia phaea Owe-Larss. & A. Nordin, Lichen Flora of the Greater Sonoran Desert Region, 3: 100 (2007). Description: Owe-Larsson et al. 2007. Substrate: non-calcareous rocks. World distribution: North America (California endemic). CINP distribution: SC, SR.

NOTES. – *Aspicilia phaea* is common in California from low to high elevations. It probably also occurs in Mexico. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, near Christi Pines, *Knudsen et al. 8567* (UCR).

Aspicilia praecrenata (Nyl ex Hasse) Hue, Lich. Morphol. et Anat. 112 (1912). Description: Owe-Larsson et al. 2007. Substrate: soil in biological soil crusts, rarely on decayed rock or sandstone. World distribution: North America (California endemic). CINP distribution: SR.

Plate 2, Fig. B.

NOTES. – *Aspicilia praecrenata* is rare in California where it occurs in biological soil crusts and forms a thick squamulose thallus. It can also grow on soft decaying rocks where it will typically produce a poorly developed thallus. The species was originally described from the Santa Monica Mountains from same type locality as *A. glaucopsina* (Hasse 1913). *Aspicilia praecrenata* will eventually be transferred to the genus *Circinaria* (A. Nordin, pers. comm.). In CINP it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, in biological soil crusts, *Knudsen 11411 & Chaney* (NY, UCR, UPS).

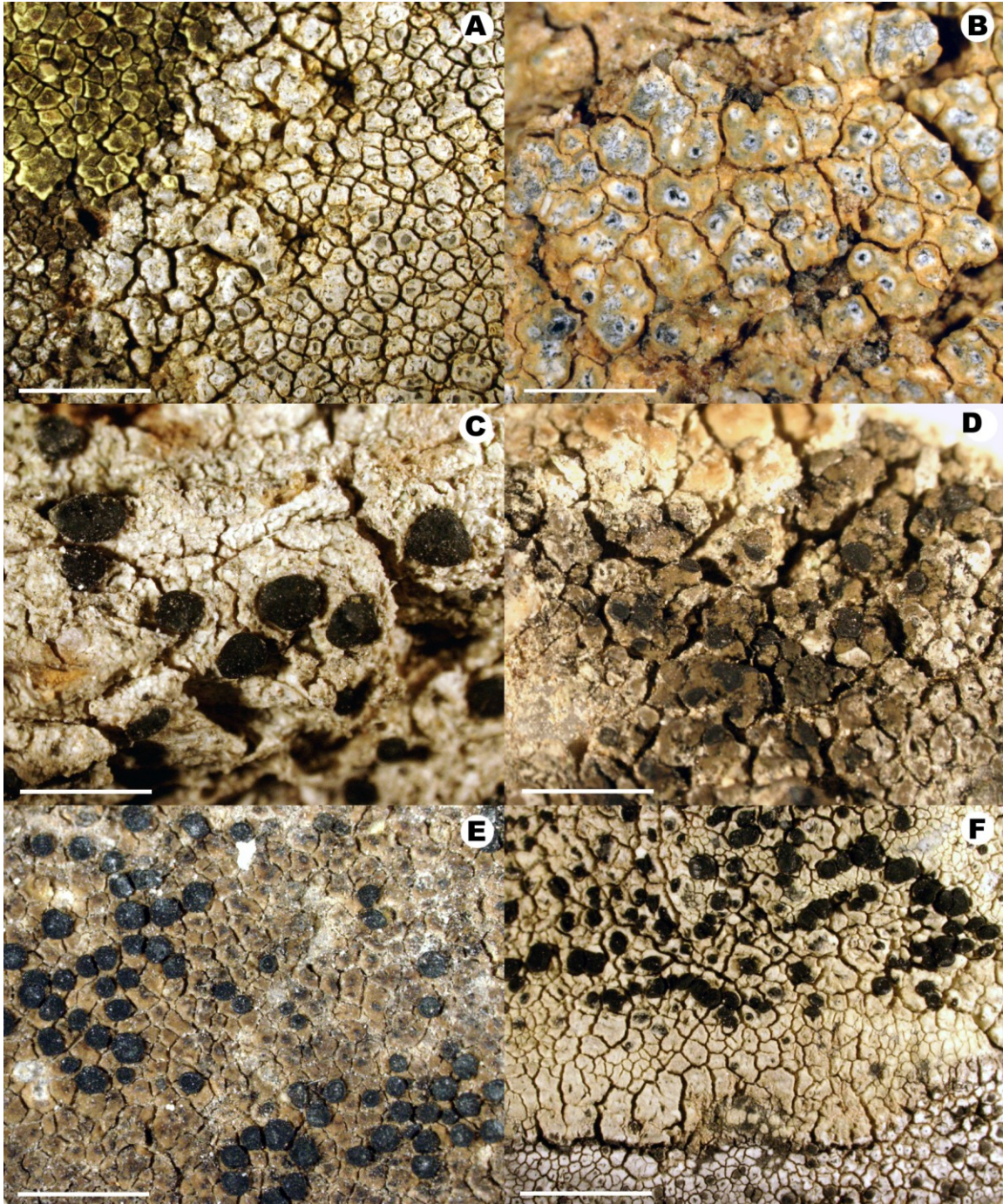


Plate 2, A, *Aspicilia pacifica* (Knudsen 8776, UCR). B, *A. praecrenata* (Knudsen 11411, UCR). C, *Bacidia coruscans* (Knudsen 10617, UCR). D, *Buellia badia* (Knudsen 8070, UCR). E, *Buellia christophii* (Nash 12952, UCR). F, *B. halonia* (Knudsen 7365, UCR). Scales = 2.0 mm in A and F; 1.0 mm in B-E.

Bacidia coprodes (Körber) Lettau, Hedwigia 52: 132 (1912). Description: Llop & Ekman 2007. Substrate: calcareous rock. World distribution: Antarctica, Europe, North America. CINP distribution: SR.

NOTES. – *Bacidia coprodes* is a saxicolous member of the genus, with a red paraplectenchymatous hypothecium, blue-green epihymenium, and relatively broad 3-septate hyaline ascospores. It occurs on Santa Rosa Island in CINP. The species is here reported new for California. It was also collected in Joshua Tree National Park in Keys Ranch. It is probably undercollected.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Carrington, on sandy reconsolidated soil, *Knudsen et al.* 8878 (UCR).

Bacidia coruscans S. Ekman, Lichen Flora of the Greater Sonoran Desert Region, 3: 23 (2004). Description: Ekman 2004a. Substrate: twigs and branches of various shrubs and trees. World distribution: North America. CINP distribution: SC, SM, SR.

PLATE 2, FIG. C.

NOTES. – *Bacidia coruscans* occurs on a wide variety of shrubs including *Baccharis*, particularly on dead branches and bushes. It was recently described from San Miguel Island where it was found on *Lupinus albifrons* Benth. (Ekman 2004). It is rare on the mainland with scattered populations from Baja California to Point Reyes. In 1915, shortly before his death, H.E. Hasse collected it on *Juglans californica* in the Santa Monica Mountains and wrote on the packet “rare” (FH!). Based on our studies in the region the taxon is probably extirpated from the Santa Monica Mountains, but it is still common on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Miguel Island, on *Artemisia californica*, *Printzen s.n.* (ASU; det. Printzen).

Bacidia heterochroa (Mull. Arg.) Zahlbr., Cat. Lich. Univ. 4: 204 (1926). Description: Ekman 2004a. Substrate: bark. World distribution: Pantropic, cosmopolitan. CINP distribution: SC, SM, SR.

NOTES. – *Bacidia heterochroa* appears to be particularly frequent from San Francisco north to Sonoma County. It occurs on San Miguel, Santa Cruz and Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain area, on *Heteromeles arbutifolia*, *Nash 32640* (ASU, det. Ekman).

Bacidina californica S. Ekman, Op. Bot. 127: 117 (1996). Description: Ekman 2004b. Substrate: bark. World distribution: North America (California endemic). CINP distribution: SC, SM, SR.

NOTES. – *Bacidina californica* is a California endemic known from scattered coastal populations as far north as Sonoma County and is frequent at Point Lobos in Monterey County. Though not known from the Channel Islands, *B. ramea* S. Ekman was collected several times in the Santa Monica Mountains by H.E. Hasse (FH!) and may be expected to occur on the islands. If the narrow thalline margin is not observed, it may be confused with *B. californica*. This species is common on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on *Astragalus*, *Knudsen 6798* (UCR).

Bactrospora acicularis (C.W. Dodge) Egea & Torrente, Lichenologist 25: 219 (1993). Description: Egea et al. 2004a. Substrate: bark of trees, particularly oaks. World distribution: North and South America. CINP distribution: SC.

NOTES. – In the context of the California lichen biota, *Bactrospora acicularis* belongs to the American Mediterranean biogeographical unit, occurring in both Mediterranean areas of the Americas (Chile and California). In Chile *B. acicularis* has been collected on non-native *Eucalyptus* trees. In

California it is only known from CINP. Charis Bratt collected it several times in the Central Valley of Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Central Valley, *Bratt 6484* (NY; det. Lendemer).

Bactrospora brevispora R.C. Harris, *Some Florida Lichens*: 39 (1990). Description: Egea et al. 2004a. Substrate: bark, wood. World distribution: North America, Caribbean. CINP distribution: SC.

NOTES. – *Bactrospora brevispora* is part of the subtropical biographical unit of the California lichen biota. It is only known from a single collection made on Santa Cruz Island where it was found on oaks (*Quercus agrifolia* Née).

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Cañada del Puerto, *Nash 32436* (ASU; det. Nordin).

Bactrospora brodoi Egea & Torrente, *Lichenologist* 25: 224 (1993). Description: Egea et al. 2004a. Substrate: bark. World distribution: North America. CINP distribution: SR.

NOTES. – *Bactrospora brodoi* is frequent in eastern Canada but rare along the central coast of California. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Old Ranch Canyon, on *Heteromeles arbutifolia*, *Nash 33095* (ASU; det. Egea and Torrente).

Bactrospora patellarioides (Nyl.) Almq., *Sci. Nat. Cherbourg* 2: 333 (1869). Description: Egea et al. 2004a. Substrate: bark, wood. World distribution: Africa, Europe, North America. CINP distribution: SC, SR.

NOTES. – *Bactrospora patellarioides* is rare along the coast of California where it is currently known only from the Santa Monica Mountains. It is common on the Channel Islands where it grows on both native and non-native trees. The California endemic *B. spiralis* Egea & Torrente occurs along the coast from Point Loma in San Diego County to Monterey and is expected on the Channel Islands, although it has not yet been found there. *Bactrospora patellarioides* is frequent on Santa Cruz and Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Quercus pacifica*, *Knudsen et al. 7831* (UCR).

Bactrospora patellarioides* var. *convexa (B. de Lesd.) Egea & Torrente, *Lichenologist* 25: 249 (1993). Description: Egea et al. 2004a. Substrate: bark. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Bactrospora patellarioides* var. *convexa* is narrowly distinguished from the typical variety *patellarioides*. In CINP it occurs on oaks on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, East Point, on oak bark, *Wetmore 73784* (ASU; det. Tehler).

Bagliettoa calciseda (DC.) Gueidan & Cl. Roux, *Bulletin de la Société Linnéenne de Provence* 58: 187 (2007). Description: Breuss 2007 (as *Verrucaria calciseda*). Substrate: caliche, limestone, Monterey shale. World distribution: Cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Bagliettoa calciseda* is a strict calciphile known from scattered locations in California (Breuss 2007). It is rare on Santa Rosa Island where it occurs on caliche and also on east Santa Cruz Island where it occurs on Monterey shale.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on caliche, *Knudsen et al. 8790* (UCR).

Buellia abstracta (Nyl.) H. Olivier, Bull. Acad. Intern. Géogr. Bot. 12: 176 (1903). Misapplied name: *B. sequax* auct. Description: Bungartz et al. 2007 (as *B. sequax*). Substrate: non-calcareous rock. World distribution: Europe, North America. CIMP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Buellia abstracta* is the most frequent saxicolous *Buellia* species in California, occurring in a wide range of habitats. The species is distinguished by its dark thin-walled ellipsoid ascospores, which only become ornamented when mature, and often abundant small black lecideine apothecia with an endolithic or a pale gray or brown thallus mixed with grains of the substrate. Its production of norstictic acid varies in concentration and specimens without norstictic acid are common in southern California. The name *Buellia sequax* was misapplied to this species (Giralt et al. 2011). It is common on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Willow Canyon, on rock, *Knudsen 6810.2* (UCR).

Buellia badia (Fr.) A. Massal., Memor. Lichenogr. 1853: 124–125 (1853). Description: Bungartz et al. 2007. Substrate: lichens, non-calcareous rock, rarely on wood or bark in eastern North America. World distribution: Africa, Europe, North America. CIMP distribution: WA, SR.

PLATE 2, FIG. D.

NOTES. – *Buellia badia* is common in California. It begins as a non-lichenized juvenile parasite, infiltrating the thallus of many different lichen genera, and destroying them. In the early stages of infection the apothecia of *B. badia* sometimes form on the host and can be identified by their 1-septate brown ascospores and ascus structure, which has a wide I- cone usually with parallel blue flanks. Eventually *B. badia* forms an independent dull brown non-lobate lichenized crust, which is sometimes bullate to squamulose and lacks lichen substances. In California it is usually parasitic on *Aspicilia* species. It occurs on West Anacapa and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, boulder field above Ford Point, *Knudsen et al. 10496* (UCR).

Buellia capitis-regum W.A. Weber, Bryologist 74: 185 (1971). Descriptions: Bungartz et al. 2007. Substrate: non-calcareous rock. World distribution: North America. CIMP distribution: SC, SM, SR. WA.

NOTES. – *Buellia capitis-regum* occurs from Marin County south to Baja California. It is distinguished by its beautiful thick white thallus with a yellow medulla. It is common on San Miguel, Santa Cruz, Santa Rosa, and West Anacapa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, nameless canyon along Smith Highway, on rock, *Knudsen 8864.1 & Kocourková* (UCR).

Buellia christophii Bungartz, Canad. J. Bot. 82: 542 (2004). Descriptions: Bungartz et al. 2007. Substrate: non-calcareous rocks. World distribution: North America. CIMP distribution: SB, SC, SM, SR, WA.

PLATE 2, FIG. E.

NOTES. – *Buellia christophii* is frequent along the coast of southern and central California. It is frequent on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, between East End and Torrey Pine forest, on sandstone, *Knudsen 7422 & Baguskus* (UCR).

Buellia disciformis (Fr.) Mudd, Man. Brit. Lich.: 261 (1861). Description: Bungartz et al. 2007. Substrate: bark, rarely wood. World distribution: Europe, North America. CIMP distribution: SR.

NOTES. – *Buellia disciformis* is infrequent in southern California, though often locally abundant on chaparral. It occurs on Santa Rosa Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, north of Black Mountain, on *Quercus pacifica*, Knudsen et al. 7683 (UCR).

Buellia dispersa A. Massal., Schedul. Critic. 8: 150 (1856). Description: Bungartz et al. 2007. Substrate: non-calcareous rock. World distribution: Africa, Europe, North America. CIMP distribution: SC, SR.

NOTES. – *Buellia dispersa* is frequent in California, especially in the southwestern Mojave Desert. It occurs on Santa Cruz and Santa Rosa Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Old Ranch Canyon, Wetmore 73810 (MIN).

Buellia griseovirens (Turner & Borrer ex. Sm.) Almb., Bot. Notiser 1952: 247 (1952). Description: Bungartz et al. 2007. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SC.

NOTES. – *Buellia griseovirens* is a sorediate species that is predominately montane in California, occurring in the Sierra Nevada Mountains as well as the mountain ranges of southern California. In CIMP it is known from a single collection made on wood on the west end of the Central Valley of Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, pine forest, on wood, Nash 32303 (ASU; det. Tønsberg).

Buellia halonia (Ach.) Tuck., Lich. Calif.: 26 (1866). Description: Bungartz et al. 2007. Substrate: non-calcareous rock. World distribution: Africa, North and South America. CIMP distribution: SB, SC, SM, SR, WA.

PLATE 2, FIG. F.

NOTES. – *Buellia halonia* is common along the coast of California and Mexico. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Miguel Island, west of Green Mountain, Bratt 9009 (SBBG; det. Bungartz).

Buellia maritima (A. Massal.) Bagl. in Massal., Schedul. Critic. 8: 150 (1856). Description: Bungartz et al. 2007. Substrate: calcareous and non-calcareous rock. World distribution: Africa, Europe, North America. CIMP distribution: SC, SM, SR.

PLATE 3, FIG. A.

NOTES. – *Buellia maritima* is common along the California coast. It is common on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Miguel Island, Willow Canyon, on rock, Knudsen 6957 (UCR).

Buellia oidealea (Tuck.) Tuck., Lich. Calif.: 26 (1866). Description: Bungartz et al. 2007. Substrate: bark and wood. World distribution: North America. CIMP distribution: SC, SM, SR, WA.

PLATE 3, FIG. B.

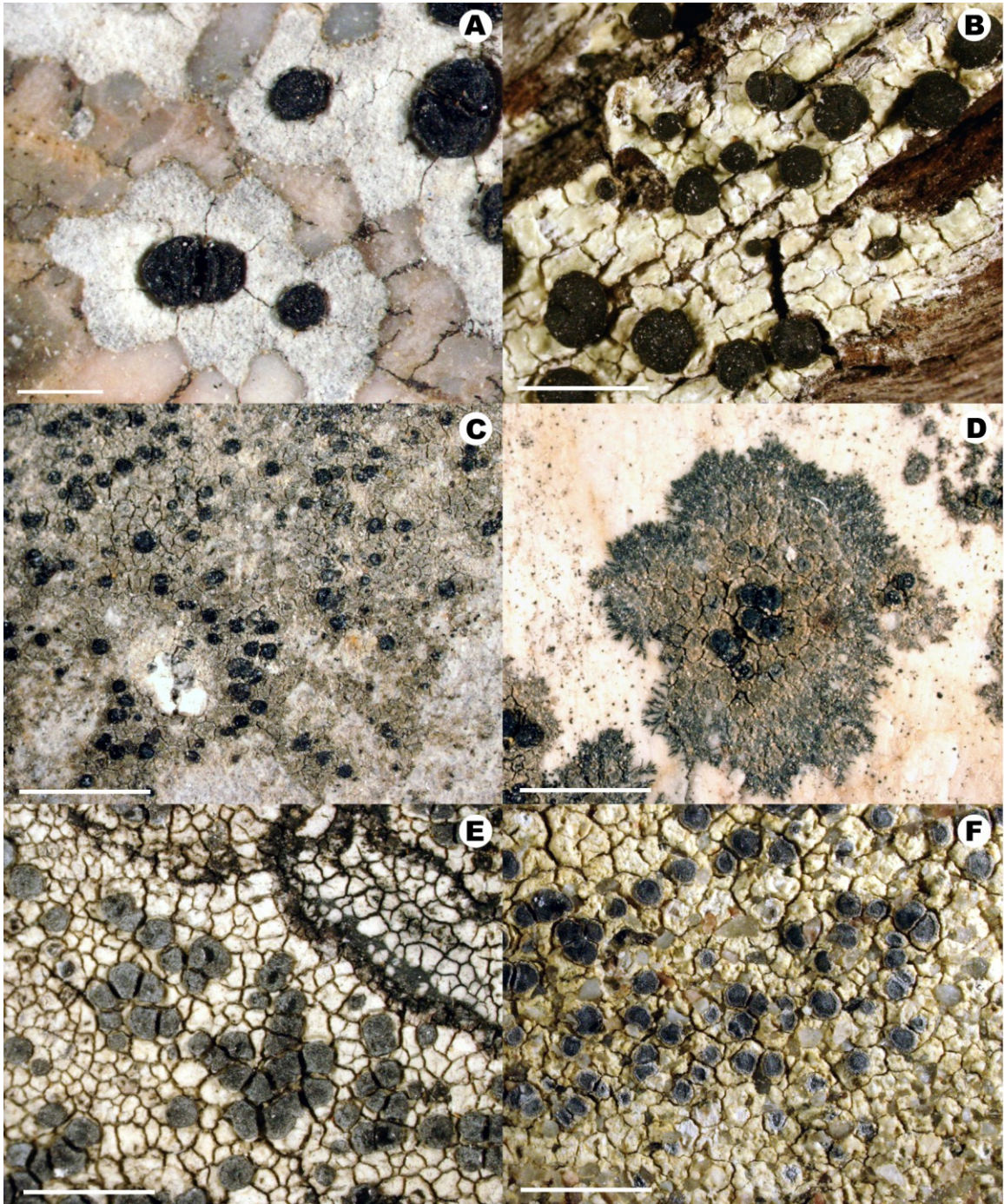


Plate 3, A, *Buellia maritima* (Knudsen 6784, UCR). B, *B. oidalea* (Knudsen 7817, UCR). C, *B. pullata* (Nash 32672, UCR). D, *B. ryanii* (Knudsen 8541, UCR). E, *B. tessarata* (Nash 32176, UCR). F, *Diplotomma venustum* (Knudsen 10479, UCR). Scales = 1.0 mm in B, D, E and F; 0.5 mm in A, C

NOTES. – *Buellia oidalea* is endemic to western North America and grows along the coast from Coos County in Oregon south to Baja California Sur in Mexico. *Buellia muriformis* A. Nordin also occurs along coast north of San Francisco and has atranorin its thallus (K+ strong yellow) instead of diploicin as well as smaller submuriform ascospores. That species might also occur on the Channel Islands but has not yet been found in the study area. *Buellia oidalea* is common on West Anacapa, San Miguel, Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, southeast side of Green Mountain, on redwood fence post, *Nash 41366* (ASU; det. Nordin).

Buellia prospersa (Nyl.) Riddle, Brookl. Bot. Gard. Mem. 1: 114 (1918). Substrate: silicate rock. Description: Bungartz et al. 2007. World distribution: probably cosmopolitan. CINP distribution: SM, SR, WA.

NOTES. – *Buellia prospersa* is rare along the California coast. It looks vaguely similar to *B. maritima* but is usually UV+ orange from xanthones if the thallus is not too thin. It occurs on West Anacapa, San Miguel, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, lower part of Willow Canyon, on rock, *Nash 41312* (ASU; det. Bungartz).

Buellia pullata Tuck., Lich. Californ.: 26 (1866). Substrate: non-calcareous rock. Description: Bungartz et al. 2007. World distribution: North America. CINP distribution: AN, SC, SM, SR.

PLATE 3, FIG. C.

NOTES. – *Buellia pullata* is common along the California coast. On the Channel Islands it can be confused with *B. christophii* which differs in having ascospores without ornamentation and a different ontogeny. The ornamentation of the ascospores of *B. pullata* is evident from early development. It is frequent on Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Tucker 35711* (SBBG; det. Bungartz).

Buellia ryanii Bungartz, Canad. J. Bot. 82: 548 (2004). Description: Bungartz et al. 2007. Substrate: non-calcareous rock, especially on small pebbles. World distribution: North America. CINP distribution: SC, SM, SR.

PLATE 3, FIG. D.

NOTES. – *Buellia ryanii* occurs at scattered locations in southern California like the northwestern Santa Ana Mountains where it is found on rounded granite pebbles washed out of sandstone. It was originally described from Santa Cruz Island. It is frequent on San Miguel, Santa Cruz, and Santa Rosa Islands, usually occurring on small stones.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km E of radar station, *Nash 31621* (ASU, det. Bungartz).

Buellia sequax (Nyl.) Zahlbr., Cat. Lich. Univ. 7: 410 (1931) emend Giralt, Bungartz & Elix, Mycolog. Prog. 10: 116 (2011). Description: Bungartz et al. 2007 (as *B. lepidastroidea*). Substrate: non-calcareous rock. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Buellia sequax* is infrequent along the coast of western North America from Washington south to Baja California. It is distinguished by its areolate to bullate or subsquamulose thallus, interspersed hymenium, and the production of atranorin and diploicin. The name *Buellia sequax* was misapplied to *B. abstracta*. It is only known from Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Knudsen 11440 & Chaney* (UCR).

Buellia stellulata (Taylor) Mudd., Man. Brit. Lich.: 216 (1861). Description: Bungartz et al. 2007. Substrate: non-calcareous rocks. World distribution: Asia, Europe, North America. CIMP distribution: AN, SC, SR.

NOTES. – *Buellia stellulata* is common along the coast of central California. A record from Santa Barbara Island collected by Charis Bratt at SBBG and determined by W.A. Weber needs to be verified. It frequent on Anacapa, Santa Cruz, and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Ryan 31283-A* (ASU; det. Bungartz).

Buellia tesserata Körber, Parerg. Lich.: 189 (1860). Description: Bungartz et al. 2007. Substrate: non-calcareous rock. World distribution: Africa, Europe, North America. CIMP distribution: SB, SC, SM, SR.

PLATE 3, FIG. E.

NOTES. – *Buellia tesserata* is common along the coast of California and is easily recognized by its spidery black margin and white areolate thallus which lacks both norstictic acid and xanthones (UV-). It is frequent on San Miguel, Santa Barbara, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Ryan 31282-B* (ASU; det. Bungartz).

****Buelliella inops*** (Triebel & Rambold) Hafellner, Mycotaxon 84: 298 (2002). Description: Hafellner 2004a. Substrate: *Caloplaca* species on rock. World distribution: Australia, North America. CIMP distribution: SB.

NOTES. – The lichenicolous fungus *Buelliella inops* is rare in southern California. It occurs on *Caloplaca bolacina* in CIMP (Santa Barbara Island only) and in the Santa Monica Mountains.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on *Caloplaca bolacina*, *Bratt 5141* (SBBG; det. Ertz).

****Buelliella physciicola*** Poelt & Hafellner in Hafellner, Beih. Nova Hedwigia 62: 155 (1979). Description: Hafellner 2004a. Substrate: *Phaeophyscia* species. World distribution: Australia, North America. CIMP distribution: SC, SR.

NOTES. – The lichenicolous fungus *Buelliella physciicola* is probably frequent in California. It occurs on Santa Cruz and Santa Rosa Islands.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo Ridge, on *Phaeophyscia hirsuta*, *Nash 32836* (ASU; det. Hafellner)

Calicium abietinum Pers., Tent. Disp. Meth. Fung. 59 (1797). Description: Tibell and Ryan 2004a. Substrate: wood and bark of oaks and conifers, and on decaying logs and stumps in sunlight. World distribution: cosmopolitan. CIMP distribution: SC.

NOTES. – *Calicium abietinum* is frequent in California. The species is locally common in the Los Osos area of San Luis Obispo County. It is currently known in CIMP from a single collection on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km E of radar station, *Nash 32481* (SBBG; det. Tibell).

Calicium glaucellum Ach., Meth. Lich.: 97 (1803). Description: Tibell and Ryan 2004a. Substrate: wood of stumps, fallen conifer and hardwood trees, rarely on bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Calicium glaucellum* is common in California. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on fallen Bishop Pine, *Kocourková s.n. & Knudsen* (UCR).

Caloplaca ammiospila (Wahlenb.) H. Olivier, Mem. Soc. Nat. Sci. Nat. Cherbourg 37: 136 (1909). Description: Wetmore 2007. Substrate: on bryophytes (sometimes growing on the trunks of trees) and on detritus. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Caloplaca ammiospila* is apparently rare in California. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountains area, on *Quercus pacifica*, *Nash 32593* (UCR; det. Wetmore).

Caloplaca atroflava (Turner) Mong., Bull. Geogr. Bot. 32: 192 (1914). Description: Wetmore 2007. Substrate: non-calcareous rocks. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Caloplaca atroflava* is uncommon in California. It is infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Old Ranch Canyon, on rock, *Wetmore 73928* (ASU, MIN).

Caloplaca bolacina (Tuck.) Herre, Proc. Wash. Acad. Sci. 12: 233 (1910). Description: Wetmore 2007. Substrate: non-calcareous rocks. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 4, FIG. A.

NOTES. – *Caloplaca bolacina* is endemic to the western coast of North America and especially common in central and southern California. The spidery lines of the parasite *Lichenostigma bolacinae* can frequently be seen on the areoles of *C. bolacina* populations from Santa Rosa Island. It is common on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island: hilltop of volcanic rock above St. Augustine Canyon near Sierra Pablo Road, *Knudsen 8822.1* (UCR).

Caloplaca brattiae W.A. Weber, Graphis Scripta 2: 168 (1910). Description: Wetmore 2007. Substrate: non-calcareous rocks. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Caloplaca brattiae* is frequent along the central coast of California. It occurs on all the Channel Islands in CINP where it often grows with *C. impolita*.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Wetmore 74030* (ASU, MIN).

Caloplaca catalinae H. Magn., Bot. Notiser 1944: 71 (1944). Description: Wetmore 2007. Substrate: wood, bark. World distribution: North America (California endemic). CINP distribution: SC.

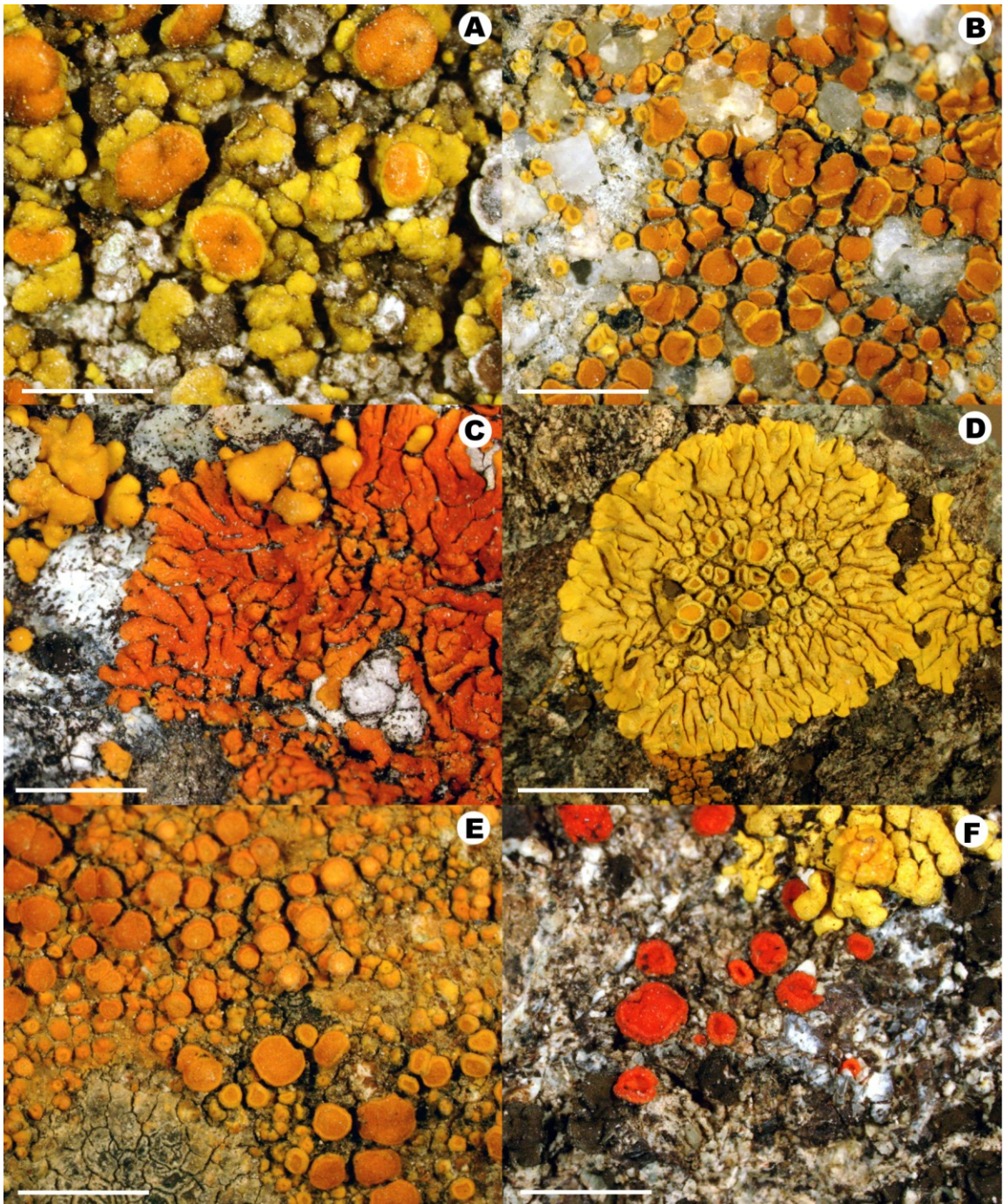


Plate 4, A, *Caloplaca bolacina* (Knudsen 8877, UCR). B, *C. crenulatella* (Knudsen 14573, UCR). C, *C. ignea* (Knudsen 12026, UCR). D, *C. impolita* (Knudsen 12036, UCR). E, *C. ludificans* (Knudsen 11210, UCR). F, *C. luteominia* var. *bolanderi* (Knudsen 12037, UCR). Scales = 2.0 mm in D; 1.0 mm in A-C, E and F.

NOTES. – *Caloplaca catalinae* is a rare California endemic known from the Channel Islands and the central California coast. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end of Central Valley, *Bratt 6485b* (ASU, SBBG; det. Wetmore).

Caloplaca cerina (Hedw.) Th. Fr., Lich. Arct.: 118 (1860). Description: Wetmore 2007. Substrate: bark. World distribution: cosmopolitan. CINP distribution: EA, SB, SC, SR.

NOTES. – *Caloplaca cerina* is common in California. In CINP it occurs on East Anacapa, Santa Barbara, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa, on *Leptosyne gigantea*, *Knudsen 10777* (UCR).

Caloplaca citrina (Hoffm.) Th. Fr., Nova Acta Regiae Soc. Sci. Upsal. 3: 218 (1861). Description: Wetmore 2007. Substrate: bark, wood, bryophytes. World distribution: cosmopolitan. CINP distribution: SB, SC, SM, SR.

NOTES. – *Caloplaca citrina* is common in California including on the Channel Islands. As presently circumscribed however, it is probably heterogeneous. The broad concept of Wetmore (2007) is used here but the specimens from the CINP need further study. It occurs on San Miguel, Santa Barbara, Santa Cruz, and Santa Rosa Islands in the study area.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on rock, *Bratt 4878* (ASU; det. Wetmore) [this collection is mistakenly attributed to Wetmore in the ASU database].

Caloplaca coralloides (Tuck.) Hulting, Hedwigia 35: 187 (1896). Description: Wetmore 2007. Substrate: rocks in salt spray zone. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Caloplaca coralloides* grows on coastal rocks in the salt spray zone. It is common along the California coast and occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, mouth of Lobo Canyon, on rock, *Knudsen et al. 11376.2* (UCR).

Caloplaca crenulatella (Nyl.) H. Olivier, Mem. Soc. Nat. Sci. Nat. Cherbourg 37: 110 (1909). Description: Wetmore 2007. Substrate: calcareous rock, concrete, or usually in southern California on drainages and seeps on non-calcareous rocks. World distribution: Europe, New Zealand, North America. CINP distribution: SM, SR.

PLATE 4, FIG. B.

NOTES. – *Caloplaca crenulatella* is a calciphile, which can grow on concrete, but also grows on decaying silicate rock in drainages and seeps. It is common in California. In CINP it occurs on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on caliche, *Wetmore 73642* (MIN).

Caloplaca durietzii H. Magn., Bot. Notiser 1953: 188 (1953). Description: Wetmore 2007. Substrate: bark or wood, especially junipers in Mojave Desert. World distribution: North America. CINP distribution: SC.

NOTES. – *Caloplaca durietzii* is separated from *C. pyracea* (Ach.) Zwackh based on its yellow-orange areolate thallus. The taxon is in need of further study and the species concept needs revision. It is common in the Mojave Desert on old junipers and has been identified from scattered locations in California by C.M. Wetmore (e.g., Banning Pass, the Granite Mountains, Joshua Tree National Park, the San Jacinto Mountains, and the Santa Monica Mountains from a historic Hasse collection). It was determined by Wetmore as occurring on Santa Cruz Island on oak.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km E of radar station, on oak bark, *Ryan 32481* (ASU; det. Wetmore).

Caloplaca ferruginea (Hudson) Th. Fr., Nova Acta Reg. Soc. Sci. Ups. 3: 223 (1861). Description: Wetmore 2007. Substrate: wood or bark. World distribution: cosmopolitan. CIMP distribution: SC, SR.

NOTES. – *Caloplaca ferruginea* is frequent in California. It can be confused with *C. catalinae* which has smaller ascospores and also occurs on Santa Cruz Island. The species is frequent on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, slope of Black Mountain, on bark, *Wetmore 73554* (MIN).

Caloplaca ignea Arup, Bryologist 98: 98 (1995). Description: Wetmore 2007. Substrate: calcareous or non-calcareous rocks. World distribution: North America. CIMP distribution: SC, SM, SR.

PLATE 4, FIG. C.

NOTES. – *Caloplaca ignea* is a beautiful reddish lichen with long lobes that is fantastic to see in the noonday sun covering a dark boulder. It is separated from *C. biatorina* (A. Massal.) J. Steiner mainly by ascospore size and shape (Gayee 2009). Some older identifications from the islands may prove to be *C. biatorina* because both species occur in the adjacent Santa Monica Mountains on the mainland. *Caloplaca ignea* occurs on San Miguel, Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain area, on rock, *Nash 32648-b* (ASU; det. Wetmore).

Caloplaca impolita Arup, Bryologist 98: 101 (1995). Description: Wetmore 2007. Substrate: non-calcareous rocks, serpentine. World distribution: North America. CIMP distribution: EA, SB, SC, SR, WA.

PLATE 4, FIG. D.

NOTES. – The coastal species *Caloplaca impolita* is frequent along the southern and central California coast. It can be confused with *C. brattiae*, with which it is sympatric, but it is easily distinguished by the broader lobe tips that are yellow due to a fine pruina. It is the more common of the two species and is common on all of the Channel Islands where it is often found growing associated with *Niebla* species and *C. brattiae*.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, slope of bluff above Lobo Canyon, *Knudsen 10570.2* (UCR).

Caloplaca ludificans Arup, Bryologist 98: 107 (1995). Description: Substrate: calcareous and non-calcareous rocks, serpentine. World distribution: North America. CIMP distribution: EA, SB, SC, SM, SR, WA.

PLATE 4, FIG. E.

NOTES. – *Caloplaca ludificans* is a common coastal species in southern California and Mexico. It was originally described from the tip of Point Dume in the Santa Monica Mountains and is common on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, bluff between Soledad and Arlington Canyon near Gulch benchmark, *Knudsen 8943.2* (NY, UCR).

Caloplaca luteominia (Tuck.) Zahlbr., Cat. Lich. Univ. 7: 156 (1930). Description: Wetmore 2007. Substrate: calcareous and non-calcareous rock, serpentine, occasionally on soil. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 5, FIG. A.

NOTES. – *Caloplaca luteominia* is a common species along the coast of southern and central California. It can occur in the salt spray zone and also grows on soil in biological soil crusts. On the central coast of California it is often infected by the lichenicolous fungus *Opegrapha hellespontica* Vondrák & Kocourk. when occurring in the salt spray zone (Kocourková et al. 2012). The species is common on all of the islands in the study area. *Caloplaca subpyraceella* Nyl. ex Hasse is a terricolous species described from the Santa Monica Mountains in a biological soil crust and has been confused with *C. luteominia* (Wetmore 2007). It has especially a darker reddish hue than *C. luteominia* as well as thinner margin, is a member of the *crenulatella* group, and is expected on the Channel Islands (U. Arup, pers. comm.)

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Ford Point, on rock, *Knudsen et al. 10492* (UCR).

Caloplaca luteominia* var. *bolanderi (Tuck.) Arup, Bryologist 96: 469 (1993). Description: Wetmore 2007. Substrate: calcareous and non-calcareous rocks, serpentine. World distribution: North America. CINP distribution: SB, SM, SR, WA.

PLATE 4, FIG. F.

NOTES. – *Caloplaca luteominia* var. *bolanderi* is infrequent along the coast of western North America. It has distinctive reddish apothecia and is particularly beautiful when growing on greenish serpentine in Cayucos along the coast of central California. It is rare on West Anacapa, San Miguel, Santa Barbara, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, close to radar station, top of ridge just before main paved road, *Marsh 6765* (ASU; det. Esslinger).

Caloplaca marina* ssp. *americana Arup, Bryologist 95: 158 (1992). Description: Wetmore 2007. Substrate: non-calcareous rocks. World distribution: North America. CINP distribution: SC, SM.

NOTES. – *Caloplaca marina* ssp. *americana* has a scattered distribution along the coast of western North America and is probably undercollected or misidentified. It is apparently rare on the north Channel Islands and is known only from San Miguel and Santa Cruz Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, *Arup L89151* (LD).

Caloplaca marmorata (Bagl.) Jatta, Syl. Lich. Ital.: 251 (1900). Description: Wetmore 2007. Substrate: calcareous rocks. World distribution: Europe, North America. CINP distribution: SM, SR.

NOTES. – *Caloplaca marmorata* is known in California only from the Channel Islands, where it is usually found on caliche. It occurs on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, ridge of first marine terrace near road to China Camp, on exposed caliche, *Knudsen et al. 7821.1* (UCR).

Caloplaca microphyllina (Tuck.) Hasse, Contrib. U.S. Nat. Herb. 17: 114 (1913). Description: Wetmore 2007. Substrate: bark, wood, including fences. World distribution: Africa, Europe, North America. CINP distribution: SC.

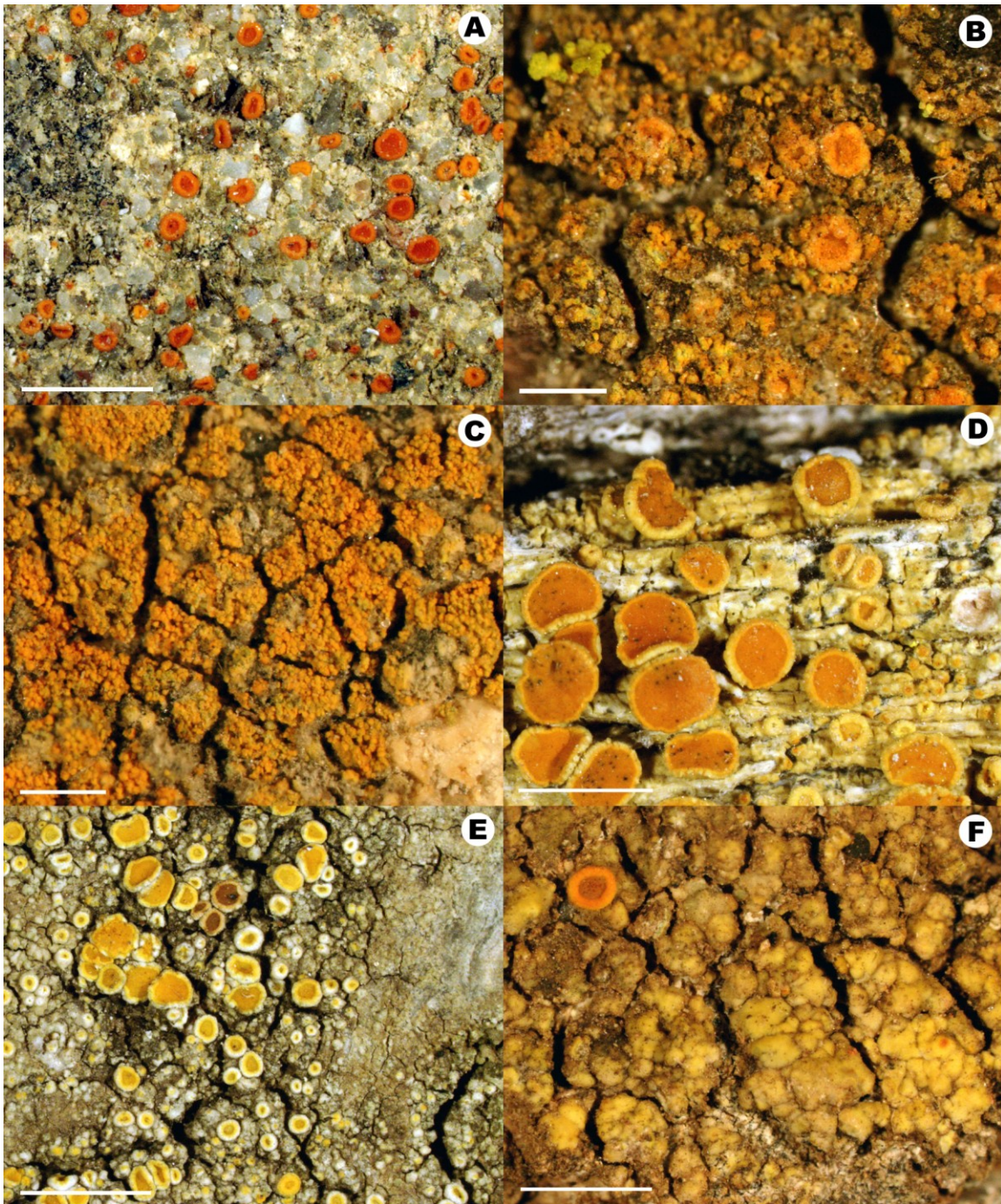


Plate 5, A, *Caloplaca luteominia* var. *luteominia* (Knudsen 10492, UCR). B, *C. microphyllina* (Lendemer 14751A, NY). C, *C. obamae* (Knudsen 10572, UCR). D, *C. stipitata* (Wetmore 73651, NY). E, *C. stanfordensis* (Knudsen 10048, UCR). F, *C. stantonii* (Weber s.n. in *Lichenes Exs. COLO* 672, NY). Scales = 1.0 mm in A, D-F; 0.5 mm in B and C.

PLATE 5, FIG. B.

NOTES. – *Caloplaca microphyllina* has a scattered distribution in California and may be among those species disappearing with the increase in fire frequency. It is infrequent on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Christy Ranch, on wood, *Wetmore 74073* (MIN)

Caloplaca nashii Nav.-Ros., Gaya & Hladun, Mycotaxon 79: 31 (2001). Description: Wetmore 2007. Substrate: calcareous and non-calcareous rock (especially in drainage and seeps), concrete. World distribution: North America. CIMP distribution: SR.

NOTES. – The two calciphiles *Caloplaca nashii* and *C. crenulatella* often occur in drainages or seasonal seeps on non-calcareous rock in California, sometimes together. Both species are endolithic, common, and even grow on concrete. *Caloplaca nashii* has larger ascospores than *C. crenulatella*. In CIMP it is currently only known from Sandy Point on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, *Nash 32680* (ASU; det. Wetmore).

Caloplaca obamae K. Knudsen, Opuscula Philolichenum 6: 37 (2009). Description: Knudsen 2009. Substrate: soil. World distribution: North America (California endemic). CIMP distribution: SR.

PLATE 5, FIG. C.

NOTES. – *Caloplaca obamae* is identified by its small granules, rhizohyphae, and growth on soil. It is endemic to Santa Rosa Island, growing on marine terraces of fine Pleistocene soils and forming biological soil crusts on flat surfaces. The species is a hardy pioneer, having survived grazing and disturbance by sheep, cattle, as well as herds of elk and deer introduced for hunting. We expect it to become common on Santa Rosa Island in the next hundred years as the island recovers from grazing. Unpublished molecular work shows that *Caloplaca obamae* is most closely related to several undescribed taxa from South America and Africa (Arup, pers. comm.). The lichen was named for President Obama in recognition of his support of science and research.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Soledad Canyon, on soil, *Knudsen et al. 10545* (UCR).

Caloplaca peliophylla (Tuck.) Zahlbr., Cat. Lich. Univ. 7: 262 (1931). Description: Wetmore 2007. Substrate: non-calcareous rocks, rarely soil. World distribution: North America. CIMP distribution: SR.

NOTES. – *Caloplaca peliophylla* is apparently rare in California. It grows on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Soledad Canyon, on soil, *Wetmore 73749* (MIN).

Caloplaca pyracea (Ach.) Zwackh, Flora 45: 487 (1862). Description: Arup 2009. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: EA, SB, SC, SM, SR.

NOTES. – *Caloplaca pyracea* is common throughout California. Until recently, North America specimens on trees were identified *C. holocarpa* (Hoffm. ex Ach.) A. E. Wade, but that name is now applied only to a taxon on rocks (Arup 2009) which has not been reported yet from California. *Caloplaca pyracea* occurs on all of the Channel Islands but is not dominant.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on dead twigs of *Baccharis*, *Knudsen 5293* (UCR).

Caloplaca rosei Hasse, Bryologist 14: 102 (1911). Description: Wetmore 2007. Substrate: calcareous and non-calcareous rock. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Caloplaca rosei* occurs along the coast of western North America usually at elevations less than ten meters above sea level, but can occur at higher elevations on the Channel Islands. It occurs on all the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, *Arup L89153* (LD).

Caloplaca saxicola (Hoffm.) Nordin, *Caloplaca* sect. *Gasparrinia* i Nordeuropa: 87 (1972). Description: Wetmore 2007. Substrate: calcareous and non-calcareous rocks. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Caloplaca saxicola* is common in California but is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km east of navy radar station, *Wetmore 74100* (ASU).

Caloplaca stanfordensis H. Magn., Bot. Notiser 1944: 67 (1944). Description: Wetmore 2007. Substrate: bark and wood, usually oaks, and collected on bone and caliche on Santa Rosa Island. World distribution: North America. CINP distribution: EA, SC, SM, SR, WA.

PLATE 5, FIG. E.

NOTES. – *Caloplaca stanfordensis* is frequent in southern and central California. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on caliche, *Ryan 31030* (ASU, UCR; det. Wetmore).

Caloplaca stantonii W.A. Weber *ex* Arup, Bryologist 95: 454 (1992). Description: Wetmore 2007. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

PLATE 5, FIG. F.

NOTES. – *Caloplaca stantonii* is another beautiful species of *Caloplaca* that is easily identified by its squamulose orange thallus and dark brownish orange apothecia. It is relatively rare along the coast of western North America, but is common on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, *Knudsen 11868* (UCR).

Caloplaca stellata Wetmore & Kärnefelt, Bryologist 101: 246 (1998). Description: Wetmore 2007. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SR.

NOTES. – *Caloplaca stellata* is sorediate and has distinctive short lobes with marginal soralia. It is known from scattered locations in California, where it is most frequent above 4000 feet. In CINP it is only known from South Point on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Wetmore 73910* (ASU, MIN).

Caloplaca stipitata Wetmore, Bryologist 102: 102 (1999). Description: Wetmore 2007. Substrate: bark. World distribution: North America. CIMP distribution: SB, SC, SM, SR.

PLATE 5, FIG. D.

NOTES. – *Caloplaca stipitata* is easily recognized by its yellowish-orange areoles and its large stipitate apothecia. The Channel Islands are at the northern limit of the range of *C. stipitata*, which is especially common along the coast of Baja California. It often grows on weathered wood fences and posts. The species was described from San Rosa Island and is common on that island as well as San Miguel, Santa Barbara, and Santa Cruz Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Miguel Island, Cuyler Harbor, on old driftwood high above the beach, *Knudsen 6893* (UCR).

Caloplaca subsoluta (Nyl.) Zahlbr., Cat. Lich. Univ. 7: 185 (1931). Description: Wetmore 2007. Substrate: calcareous or non-calcareous rocks. World distribution: cosmopolitan. CIMP distribution: SB, SC.

NOTES. – *Caloplaca subsoluta* is a common in California, but is rare on the Channel Islands. It occurs on Santa Barbara and Santa Cruz Islands in CIMP

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end, near the trailer barranca, on rock, *Bratt 4998* (ASU, SBBG; det. Wetmore).

Candelaria pacifica M. Westb. & Arup, Biblioth. Lichenol. 106: 358 (2011). Description: Westberg and Arup 2011. Substrate: bark, wood, on rock (usually under population on phorophytes). World distribution: Europe, North and South America. CIMP distribution: SC, SR.

PLATE 6, FIG. A.

NOTES. – The yellow sorediate *Candelaria pacifica* is distinguished by its 8-spored asci from the polysporous *C. concolor* (Dicks) Stein. For notes on the differences in thallus morphology between the two species see Westberg and Arup (2011). Apothecia are infrequent but not impossible to find. The species is frequent along the coast of western North America and can grow on non-native trees. In the past, California specimens were often reported as *C. concolor* and reports of this species from the Channel Islands need to be revised. Here we do not currently recognize *C. concolor* as occurring on the Channel Islands. In the study area *C. pacifica* occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Ranch, on bark of *Eucalyptus*, *Knudsen 8975.1* (UCR).

Candelariella aurella (Hoffm.) Zahlbr., Cat. Lich. Univ. 5: 790 (1928). Description: Westberg 2004. Substrate: limestone, concrete, non-calcareous rock especially in drainages and seeps, rarely on bark or wood. World distribution: cosmopolitan. CIMP distribution: SM, SR.

PLATE 6, FIG. B.

NOTES. – *Candelariella aurella* occurs throughout California and is common on concrete. It often occurs with *Caloplaca nashii* or *C. crenulatella*. In CIMP it occurs on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, sandy Point, on caliche, *Knudsen et al. 8789* (UCR).

Candelariella lutella (Vainio) Räsänen, Ann. Soc. Zool. Bot. Fenn. "Vanamo" 12: 57 (1939). Description: Westberg 2004. Substrate: bark. World distribution: probably circumpolar. CIMP distribution: SR.

NOTES. – *Candelariella lutella* appears to be frequent in central and northern California, particularly in the Sierra Nevada Mountains, and is probably undercollected. It apparently needs habitats with fairly high relative annual humidity. Within CIMP it is known from a single collection from Santa Rosa Island.

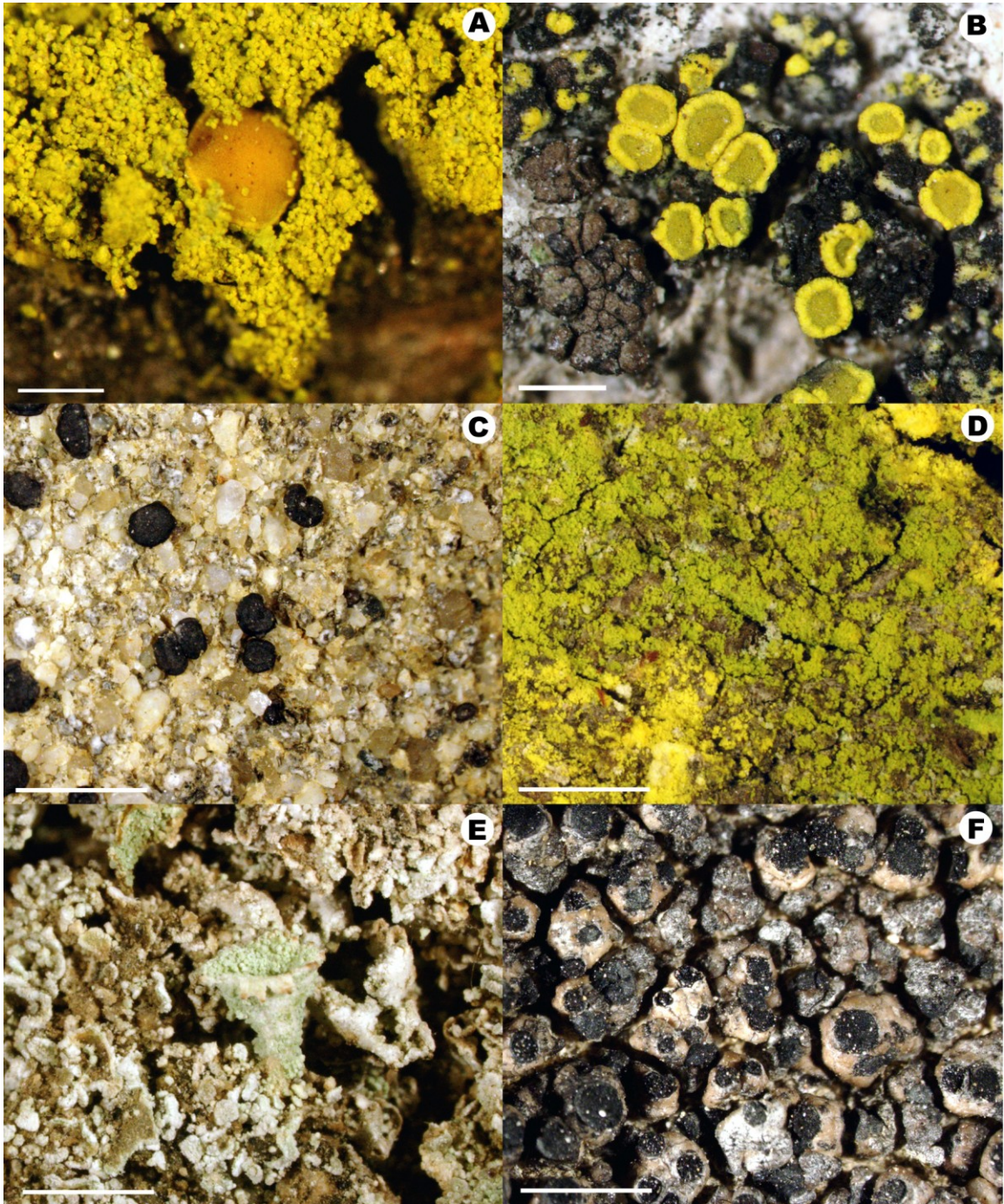


Plate 6, A, *Candelaria pacifica* (Knudsen 3437, UCR). B, *Candelariella vitellina* (Lendemer 14883A, NY). C, *Catillaria lenticularis* (Knudsen 4882, UCR). D, *Chrysothrix xanthina* (Knudsen 12190, UCR). E, *Cladonia nashii* (Knudsen 6437, UCR). F, *Cyphelium brunneum* (Knudsen 11408, UCR). Scales = 1.0 mm in C-F; 0.5 mm in A, B.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Burma Road, on dusty old wood of *Quercus tomentella*, *Knudsen 8708 & Kocourková* (UCR).

Candelariella vitellina (Hoffm.) Müll. Arg., Bull. Herb. Herb. Boissier 2: 47 (1894). Description: Westberg 2004. Substrate: non-calcareous rock, rarely on bark and wood. World distribution: Europe, North America. CINP distribution: SC, SM, SR, WA.

NOTES. – *Candelariella vitellina* is common on silicate rock in California, especially in montane habitats. It is distinguished from *C. aurella* by its asci that contain 16–24 ascospores. The species is frequent on the Channel Islands, occurring on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, *Knudsen 10602 & Chaney* (UCR).

Candelariella xanthostigma (Ach.) Lettau, Hedwigia 52: 196 (1810). Description: Westberg 2004. Substrate: bark and wood of a variety of phorophytes, often common on *Leptosyne gigantea*. World distribution: cosmopolitan. CINP distribution: EA, SC, SM, SR.

NOTES. – *Candelariella xanthostigma* is apparently only common in California on the Channel Islands. It occurs on East Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: East Anacapa Island, on *Leptosyne gigantea*, *Knudsen 10919.2* (UCR).

Carbonea latypizodes (Nyl.) Knoph & Rambold, Lichen Flora of the Greater Sonoran Desert Region 2: 55 (2004). Description: Knoph et al. 2004; Knudsen et al. 2008. Substrate: non-calcareous rocks, especially sandstone, often on pebbles, rarely on soil in biological soil crusts. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Carbonea latypizodes* occurs in California in the southern part of the state where it appears to be infrequent, being locally abundant only on sandstone in the northwest Santa Ana Mountains. It was first collected in the state by H.E. Hasse with *Acarospora obpallens* and *Caloplaca subpyraceella* in a biological soil crust in Santa Monica and was described as *Lecidea subplebeia* Nyl. ex Hasse which is a synonym (Hasse 1913, Knudsen et al. 2008). In CINP the species is only known from a single collection made on Santa Cruz Island where it was growing on soil and small pebbles.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge south of Canada Cervida above Christi Ranch, *Knudsen et al. 8573* (UCR).

Catillaria chalybeia (Borrer) A. Massal., Ric. Auton. Lich. Crost.: 79 (1852). Description: Hertel et al. 2007. Substrate: non-calcareous rock. World distribution: Africa, Europe, North and South America. CINP distribution: SR.

NOTES. – *Catillaria chalybeia* is a coastal species in California, often lacking any visible thallus. In CINP it is only known from a single collection from Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, end of Lobo Canyon, on sandstone, *Knudsen 10221* (UCR).

Catillaria lenticularis (Ach.) Th. Fr., Lich. Scand.: 567 (1864). Description: Hertel et al. 2007. Substrate: calcareous and non-calcareous rock. World distribution: Europe, North America. CINP distribution: SR.

PLATE 6, FIG. C.

NOTES. – *Catillaria lenticularis* is more common along the California coast than *C. chalybeia* and prefers more calcareous substrates. In CINP it is only known from a single collection from Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Soledad, on soft shale, *Knudsen 11287* (UCR).

Catillaria nigroclavata (Nyl.) J. Steiner in Sitzenb. Math.-Nat. Cl. Kais. Akad. Wiss., Wien 107: 157. (1898). Description: Hertel et al. 2007. Substrate: bark, wood. World distribution: Europe, New Zealand, North America. CINP distribution: SM.

NOTES. – *Catillaria nigroclavata* is a rare coastal species in California, often lacking any visible thallus. In CINP it is only known from a single collection from Santa Miguel Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Miguel Island, Green Mountain, on old wood, *Knudsen 6778.2* (UCR; det. Ekman).

Catillaria subviridis (Nyl.) Zahlbr., Cat. Lich. Univ. 4: 75 (1926). Description: Hertel et al. 2007. Substrate: non-calcareous rock. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – Verified occurrences of *Catillaria subviridis* in California are known only from on Santa Cruz Island (Hertel et al. 2007).

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, *Knudsen 14882.1* & *Kocourková* (UCR).

****Cercidospora cladoniicola*** Alstrup, Graphis Scripta 8(1): 26 (1997). Description: Alstrup 1997; Lendemer et al. 2008. Substrate: *Cladonia* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Cercidospora cladoniicola* is lichenicolous on *Cladonia* species and is known in California from a single collection made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Cladonia* species, *Knudsen & Kocourková s.n.* (PRM 909679).

Chrysothrix granulosa G. Thor, Bryologist 91: 361 (1988). Description: Tønsberg 2004a. Substrate: bark and wood. World distribution: North and South America. CINP distribution: SC, SM, SR, WA.

NOTES. – *Chrysothrix granulosa* is common along the coast of California. It is easily identified by its thick stratified thallus with a yellow leprose surface and K+ orange-red reaction due to the presence of the exolite calycin. It is frequent on Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on bark, *Ryan 31332* (ASU; det. Tønsberg).

Chrysothrix xanthina (Vainio) Kalb, Biblioth. Lichenol. 78: 144 (2001). Description: Kukwa and Knudsen 2011. Substrate: bark, wood, wood fences, sometimes on rock, sometimes overgrowing saxicolous lichens. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 6, FIG. D.

NOTES. – *Chrysothrix xanthina* occurs throughout coastal and cismontane southern California and is expected throughout California and Oregon. In the past it has been identified as *C. candelaris* (L.) J.R. Laundon (Tønsberg 2004) which differs in having calycin instead of pinastric acid and very large granules. That species and is currently not known to occur in North America. When *C. xanthina* is beginning to

colonize a new tree, it can form thick clots of granules that can be mistaken for *C. granulosa*, but *C. xanthina* is K-. Records of *C. candelaris* from the Channel Islands need to be revised. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on old Toyon tree, *Knudsen 11917* (UCR).

Cladonia chlorophaea (Flörke ex Sommerf.) Spreng., Syst. Veg. 4: 273 (1827). Description: Ahti and Hammer 2002. Substrate: soil, detritus, trunks of trees, spike moss, decorticate and rotting wood. World distribution: cosmopolitan. CINP distribution: SR, WA.

NOTES. – *Cladonia chlorophaea* is probably the most common species of the genus in California, but the name has often been misapplied. Reports of *Cladonia pyxidata* (L.) Hoffm. from CINP need to be verified. *Cladonia chlorophaea* is infrequent on West Anacapa and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine forest, on soft shale, *Knudsen 11287* (UCR).

Cladonia hammeri Ahti in Ahti & Hammer, Lichen Flora of the Greater Sonoran Desert Region 1: 144 (2002). Description: Ahti and Hammer 2002. Substrate: soil. World distribution: North America. CINP distribution: SR, WA.

NOTES. – *Cladonia hammeri* is endemic to the California Floristic Province and is widespread in southern California. It is easily confused with *C. nashii* Ahti (see the entry for that taxon below). The species is only known on the Channel Islands from West Anacapa and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on soil, *Nash 37107* (ASU; det. Ahti).

Cladonia macilenta Hoffm., Deutschl. Fl. 2: 126 (1796). Description: Ahti and Hammer 2002. Substrate: usually dead wood, occasionally on tree bases, rocks, and soil. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Cladonia macilenta* is frequent along the central and northern coast of California, usually occurring on dry weathered old wood. It is the only *Cladonia* species on the Channel Islands with red apothecia and is common on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, on wood, *Wetmore 73839* (MIN).

Cladonia maritima K. Knudsen & Lendemer, Opuscula Philolichenum 6: 122 (2009). Description: Knudsen and Lendemer 2009. Substrate: soil. World distribution: North America (California endemic). CINP distribution: SC, SR, WA.

NOTES. – *Cladonia maritima* is frequent in southern California, usually occurring near the coast. It was described from the Santa Ana Mountains in Riverside County. In the past, it was identified as *Cladonia cervicornis* (Ach.) Flot., which does not occur in California (Ahti 2007; Knudsen & Lendemer 2009). It is an indicator species of Casperian biological soil crusts on reconsolidated alluvium from sandstone (Hernandez & Knudsen 2012) and in CINP occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on soil, *Knudsen 10848* (UCR).

Cladonia nashii Ahti in Ahti & Hammer, Lichen Flora of the Greater Sonoran Desert Region 1: 148 (2002). Description: Ahti and Hammer 2002. Substrate: soil. World distribution: North America. CINP distribution: SM, SR.

PLATE 6, FIG. E.

NOTES. – *Cladonia nashii* is common in southern California, especially in the Santa Ana Mountains, where it often forms stable biological soil crusts on steep slopes of loose alluvium. It was originally described from Santa Rosa Island, where it is also common. The species is distinguished primarily from *C. hammeri* by the presence of atranorin. Unfortunately spot tests must be carefully done under a microscope and sometimes the atranorin can only be detected with thin-layer chromatography (about two or three of every ten specimens). Contrary to the published accounts *C. nashii* also can produce large granules like *C. hammeri*, which is supposed to be a morphological difference between the two species (Ahti and Hammer 2002). Within CINP *Cladonia nashii* occurs on San Miguel Island (a single population in Willow Canyon) and on West Anacapa, Santa Cruz, Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, on soil, *Knudsen et al. 7721* (H, UCR; verified by Ahti).

Cladonia scabriuscula (Delise) Nyl., Compt. Rend. Hebd. Séances Acad. Sci. Paris 83: 88 (1876). Description: Ahti and Hammer 2002. Substrate: detritus, soil. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

NOTES. – *Cladonia scabriuscula* is frequent in coastal California. It is often found growing on detritus in the chaparral and coastal sage shrub understory. It occurs on West Anacapa, Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, summit of Black Mountain, on soil and moss in sun, *Knudsen 7385 & Baguskus* (UCR).

Cladonia subfimbriata Ahti in Ahti & Hammer, Lichen Flora of the Greater Sonoran Desert Region 1: 153 (2002). Description: Ahti and Hammer 2002. Substrate: soil. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Cladonia subfimbriata* is an impressive species when fully developed with proliferations from the cups. Southern California appears to be at the northern limit of its range on the west coast of North America, with its center of diversity being in central Mexico. In its early development before the cups widen, it can be confused with *C. subulata* (L.) F.H. Wigg. Scrappy specimens, especially from exposed sites, have been identified by S. Hammer from southern California as *Cladonia verruclosa* (Vain.) Ahti (ASU!, FH!), including all of the records of that taxon from California in Ahti and Hammer (2002). As such we do not recognize *C. verruclosa* as occurring in southern California. In CINP *C. subfimbriata* is rare on Santa Cruz and Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on soil in shade, *Knudsen 7844* (H, UCR; verified by Ahti).

Clavascidium lacinulatum (Ach.) Pietro in Pietro et al., Amer. Jour. Bot. 99: 28 (2012). Description: Breuss 2002b (as *Placidium lacinulatum*). Substrate: soil. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

PLATE 16, FIG. A.

NOTES. – *Clavascidium lacinulatum* is common in biological soil crusts throughout western North America. It has long rhizines and a rhizohyphal web that binds and stabilizes the soil as in the species *Endocarpon pusillum*. It occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine grove, on volcanic breccia, *Knudsen 7433* (UCR).

Cliostomum griffithii (Sm.) Coppins in D. Hawksw. et al., Lichenologist 12: 106 (1980). Description: Ekman 2004c. Substrate: bark, rarely on rock usually below phorophytes. World distribution: cosmopolitan. CINP distribution: SC, SM, SR, WA.

NOTES. – *Cliostomum griffithii* is common along the coast from Baja California to Point Lobos. It is common on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, isolated peak along road from Sierra Pablo to East Point, on bark, *Ryan 31149* (ASU).

Collema coccophorum Tuck., Proc. Am. Acad. Arts & Sci. 5: 385 (1862). Description: Schultz et al. 2004. Substrate: soil, soft sandstone. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

NOTES. – *Collema coccophorum* is common in biological soil crusts throughout California, though it is often sterile or easily overlooked. It is a pioneer species and is an indicator of the re-establishment of biological soil crusts in disturbed areas. The species is frequent on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, *Knudsen 6759* (UCR).

Collema crispum (Hudson) F. H. Wigg., Primit. Fl. Holsat.: 89 (1780). Description: Schultz et al. 2004. Substrate: soil, bryophytes, sometimes among filamentous cyanobacteria. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

NOTES. – *Collema crispum* is infrequent in California where it occurs in biological soil crusts on calcareous soil. It is likewise infrequent on West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, N-facing sedimentary outcrops just below Barton Point in grassland, *Nash 32783* (ASU; det. Schultz).

Collema cristatum (L.) F.H. Wigg., Primit. Fl. Holsat.: 89 (1780). Description: Schultz et al. 2004. Substrate: calcareous and noncalcareous rock and soil. World distribution: Asia, Africa, Europe, North America. CINP distribution: SM, SR.

NOTES. – *Collema cristatum* usually occurs on rock or sand-filled crevices and is rare in California, known only from Ventura and Santa Barbara Counties. It is rare on the Channel Islands, only known from San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, lower Willow Canyon, on rock, *Nash 41299* (ASU; det. Schultz).

Collema furfuraceum (Arnold) Du Rietz, Ark. Bot. 22A, 13: 3 (1929). Description: Schultz et al. 2004. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Collema furfuraceum* is common in California, especially in the mountains at higher elevations. It is common on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Quercus dumosa*, *Marsh 6956* (ASU; det. Schultz).

Collema nigrescens (Hudson) DC. in Lamarck & DC., Fl. Franç, ed. 3, 2: 384 (1805). Description: Schultz et al. 2004. Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Collema nigrescens* occurs along the coast of California, frequently on oaks. It is frequent on Santa Cruz Island and is infrequent on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Prisoners Harbor, on oak, *Wetmore 74152* (ASU, MIN; det. Schultz).

Collema tenax (Sw.) Ach., Lich. Univ.: 635 (1810). Description: Schultz et al. 2004. Substrate: soil, rarely rock. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Collema tenax* is frequent in California in a variety of habitats, but due to its polymorphic thallus must be identified by its muriform ascospores. In CINP it is known from a single collection from Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on soil, *Printzen s.n.* (ASU; det. Schultz).

Collemopsidium sublitoralis (Leighton) Grube & B. D. Ryan, Lichen Flora of the Greater Sonoran Desert Region 1: 163 (2002). Description: Grube and Ryan 2002. Substrate: rock, barnacles, limpets. World distribution: Europe, New Zealand, North America. CINP distribution: SR.

NOTES. – *Collemopsidium sublitoralis* is the most common species in the genus along the southern and central California coast. In CINP it occurs on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Point Lobo, on rock, *Knudsen 11372* (UCR).

Cresponea chloroconia (Tuck.) Egea & Torrente, Mycotaxon 48: 310 (1993). Description: Egea et al. 2004b. Substrate: bark, wood. World distribution: Asia, Europe, North America. CINP distribution: SR.

NOTES. – *Cresponea chloroconia* is locally abundant along the central coast of California south to Baja California. It is only known from Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, *Nash 32948* (ASU; det. Egea & Torrente).

Cyphelium brunneum W.A. Weber, Bryologist 70: 199 (1967). Description: Tibell and Ryan 2004b. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SR.

PLATE 6, FIG. F.

NOTES. – *Cyphelium brunneum* is naturally rare, occurring along the coast of southern California and Baja California. The brown verrucae are conspicuous with their black mazadium. The largest population in southern California occurs on South Point on Santa Rosa Island. The rare species *C. brachysporum* Nád., endemic to California, was identified by B.D. Ryan from Channel Islands but the specimen lacks any remaining apothecia. *Cyphelium brunneum* occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Knudsen 11408 & Chaney* (UCR).

****Dacampia lecaniae*** Kocourk. & K. Knudsen, Biblioth. Lichenol. 105: 34 (2010). Description: Kocourková and Knudsen 2010. Substrate: *Lecania fuscella*. World distribution: North America (California endemic). CINP distribution: WA (endemic).

NOTES. – *Dacampia lecaniae* is parasitic on *Lecania fuscella* and is only known from the type collection on West Anacapa Island.

Voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on *Lecania fuscella*, *Knudsen 10800* (UCR).

****Dactylospora pleiosperma*** Triebel in Hafellner et al., Mycotaxon 84: 300 (2002). Description: Hafellner 2004b. Substrate: *Lecanora caesiorubella* (norstictic acid chemotype). World distribution: North America (California endemic). CINP distribution: SC, SR.

NOTES. – *Dactylospora pleiosperma* is lichenicolous on *Lecanora caesiorubella* along the central and southern coast of California (Kocourková et al. 2012). In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Lecanora caesiorubella*, Kocourková 7056 & Knudsen (NY).

****Dactylospora saxatilis*** (Schaerer) Hafellner, Beih. Nova Hedwigia 62: 129 (1979). Description: Hafellner 2004b. Substrate: *Pertusaria* species. World distribution: Asia, Africa, North America. CINP distribution: SR.

NOTES. – *Dactylospora saxatilis* is lichenicolous on various *Pertusaria* species and is currently only known in the state from southern California where it is apparently rare (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, hills above Beecher Bay, on *Pertusaria flavicunda*, Knudsen 7496 (UCR).

Dendrographa alectoroides Sundin & Tehler, Bryologist 19: 26 (1996). Description: Tehler 2002a. Substrate: bark, wood, rock. World distribution: North America (California endemic). CINP distribution: SC, SR.

NOTES. – *Dendrographa alectoroides* is endemic to California where it is frequent from Monterey to Marin County along the coast. It reaches its southern distribution limit on San Clemente Island. Here we do not distinguish between fertile and non-fertile specimens using infraspecific categories. This species is rare in CINP where it is known only from Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rocks on shaded vertical cliff, Sundin 1521 (SBBG).

Dendrographa leucophaea (Tuck.) Darb., Ber. Deutsch. Bot. Ges. 13: 321 (1895). Description: Tehler 2002a. Substrate: bark, wood, rocks. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 7, FIG. A.

NOTES. – *Dendrographa leucophaea* is locally abundant along the coast of Baja California in Mexico north to Monterey County, where it is common on Point Lobos. We do not distinguish between fertile and non-fertile specimens using infraspecific categories. The lichenicolous fungi *Trimmatostroma dendrographae* Diederich, Ertz, U. Braun & Heuchert and *Lichenodiplis dendrographae* Diederich & van den Boom, occur on *D. leucophaea* along the central California coast (Kocourková et al. 2012). The species is common on all the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, west side of Cat Canyon, Bratt 5201 (ASU; det. Tehler).

Dermatocarpon americanum Vainio, Dansk. Bot. Ark. 11: 25 (1926). Description: Heiðmarsson and Breuss 2004. Substrate: calcareous and non-calcareous rock especially in drainages and seeps. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Dermatocarpon americanum* is common both throughout California and the Channel Islands. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

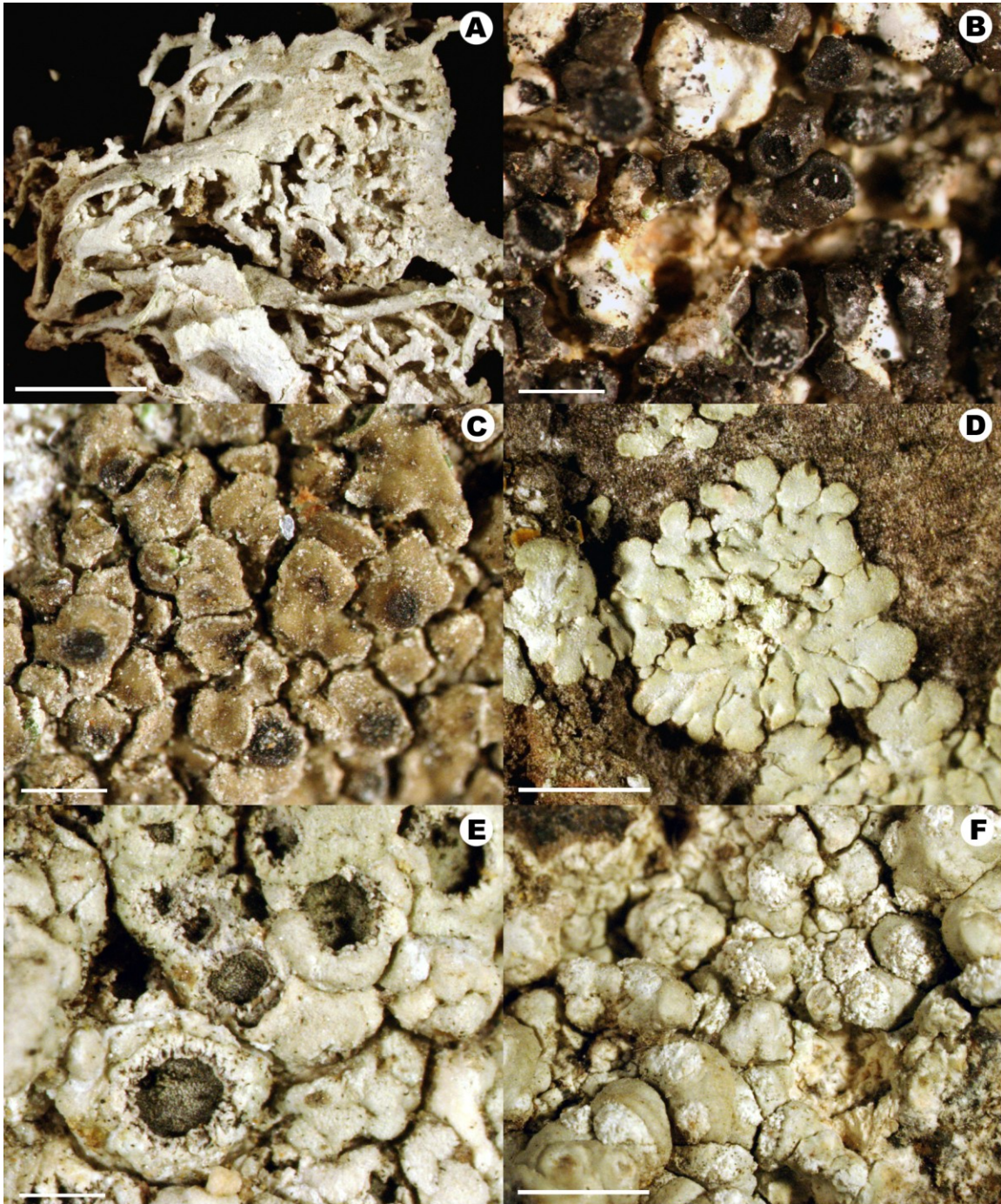


Plate 7, A, *Dendrographa leucophaea* (Knudsen 10639, UCR). B, *Dimelaena californica* (Knudsen 8703, UCR). C, *Dimelaena weberi* (Knudsen 5143.2, UCR). D, *Diploicia canescens* (Knudsen 10919.1, UCR). E, *Diploschistes muscorum* (Knudsen 2676, UCR). F, *Dirina catalinariae* (Knudsen 10647, UCR). Scales = 2.0 mm in A; 1.0 mm in D and F; 0.5 mm in B, C, E.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on rock, *Knudsen 8958* (UCR).

Dermatocarpon leptophyllodes (Nyl.) Zahlbr., Cat. Lich. Univ.: 30 (1922). Description: Heiðmarsson and Breuss 2004. Substrate: calcareous and non-calcareous rocks in drainages and seeps. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – *Dermatocarpon leptophyllodes* is rarely reported from California, but it is easily overlooked because of the small size of the squamules and its usual occurrence in small populations intermixed with other saxicolous lichens. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, in seasonal drainage on volcanic rock above Smuggler's Road, *Knudsen 15012 & Kocourková* (UCR).

Dimelaena californica (H. Magn.) Sheard, Bryologist 77: 131 (1974). Description: Mayrhofer and Sheard 2004. Substrate: juvenile parasite on *Dimelaena radiata* on non-calcareous rock, developing an independent lichenized thallus. Western distribution: North America. CINP distribution: SC, SM, SR, WA.

PLATE 7, FIG. B.

NOTES. – *Dimelaena californica* is rare along the coast of California. It is a juvenile parasite on *D. radiata* (Tuck.) Hale & Culb., eventually developing an independent brown lichenized thallus. It is frequent on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Sheard 5116c* (ASU).

Dimelaena radiata (Tuck.) Müll. Arg., Flora 67: 466 (1884). Description: Mayrhofer and Sheard 2004. Substrate: non-calcareous rock. World distribution: Africa, Europe, North America. CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Dimelaena radiata* is a common along the California coast. In southern California it can rarely be found inland up to fifty miles. It is common on all the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa, on basalt, *Knudsen 5322* (UCR).

Dimelaena weberi Sheard, Bryologist 87: 246 (1984). Description: Mayrhofer and Sheard 2004a. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SB, SC, SM.

PLATE 7, FIG. C.

NOTES. – *Dimelaena weberi* is a rare species that occurs on the central and southern California coast. It is often intermixed with other lichens as in the case of the illustration presented here. The species is rare on San Miguel, Santa Barbara, and Santa Cruz Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on rock, *Bratt 3666* (SBBG; det. Sheard).

Diploicia canescens (Dickson) A. Massal., Ric. Auton. Lich. Crost.: 86 (1852). Description: Kalb and Elix 2007. Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 7, FIG. D.

NOTES. – *Diploicia canescens* is common along the coast of southern and central California. It usually is found on bark, but can form beautiful effigurate specimens on rock. The species occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, *Knudsen 6750* (UCR).

Diploschistes actinostomus (Ach.) Zahlbr., *Hedwigia* 31: 34 (1892). Description: Lumbsch 2002. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

NOTES. – *Diploschistes actinostomus* is frequent in southern and central California especially on sandstone. It is infrequent in CINP where it occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: West Anacapa Island, Summit Peak, on basalt, *Knudsen 10866.2* (UCR).

Diploschistes aeneus (Müll. Arg.) Lumbsch, *J. Hattori Bot. Lab.* 66: 158 (1989). Description: Lumbsch 2002. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Diploschistes aeneus* is only known in California from a single collection from South Point on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Nash 33015* (ASU; det. Lumbsch).

Diploschistes diacapsis (Ach.) Lumbsch, *Lichenologist* 20: 20 (1988). Description: Lumbsch 2002. Substrate: soil. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

NOTES. – *Diploschistes diacapsis* is locally frequent near the coast in southern and central California and is especially well developed on sandy soils forming late-succession biological soil crusts. It occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, flat ridge top between two forks of Cherry Canyon, on soil, *Knudsen 10629* (UCR).

Diploschistes muscorum (Scop.) R. Sant., *Lichenologist* 12: 106 (1980). Description: Lumbsch 2002. Substrate: *Cladonia* species, *Leprocaulon americanum*, *Lepraria xerophila*, soil, rarely sandstone and rock. World distribution: cosmopolitan. CINP distribution: SC, SM, SR, WA.

PLATE 7, FIG. E.

NOTES. – *Diploschistes muscorum* is common wherever *Cladonia* species grow in California because it is a juvenile parasite on thalli of those taxa. It is also a juvenile parasite on *Lepraria xerophila* and *Leprocaulon americanum* on the Channel Islands. Often large patches of *D. muscorum* are the only evidence that *Cladonia* species were once present at a site. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on soil and *Lepraria xerophila*, *Knudsen 11908* (UCR).

Diploschistes scruposus (Schreber) Norman, *Nyt. Mag. Naturvid.* 7: 232 (1853). Description: Lumbsch 2002. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SB, SC, SR.

NOTES. – *Diploschistes scruposus* is frequent in California, particularly inland and in the mountains. There was a tendency among some collectors to identify *D. scruposus* based solely on its occurrence on rock, but *D. muscorum* often grows on *Cladonia* species on soil in crevices and spreads onto the adjoining rock. It looks similar to *D. muscorum* but is not pruinose and forms a flatter looking thallus. The species occurs on Santa Barbara, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, northwest fork of Windmill Canyon, on rock, *Knudsen 10450* (UCR).

Diplotomma alboatrum (Hoffm.) Flotow, *Jahrb. Schles. Ges. Vaterl. Kult.* 27: 130 (1849). Description: Bungartz et al. 2007 (as *Buellia alboatra*). Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CIMP distribution: SM, SR.

NOTES. – *Diplotomma alboatrum* is frequent, at least in southern California. Southern California specimens often lack norstictic acid and no lichenicolous behavior was observed in any specimens from the California. The species occurs on Santa Rosa Island and is frequent on caliche on San Miguel Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, east of summit of Green Mountain, *Knudsen 6678* (UCR).

Diplotomma venustum (Körber) Körber, *Parerg. Lich.*: 179 (1860). Description: Bungartz et al. 2007 (as *Buellia venusta*). Substrate: non-calcareous rock. World distribution: Africa, Asia, Europe, North America. CIMP distribution: SM, SR.

PLATE 3, FIG. F.

NOTES. – *Diplotomma venustum* is frequent in California and even grows in the Mojave Desert. It occurs on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Ford Point, on rock, *Knudsen et al. 10491* (UCR).

Dirina catalinariae Hasse, *Bryologist* 14: 102 (1911). Description: Tehler 2002b. Substrate: non-calcareous rock. World distribution: North and South America. CIMP distribution: EA, SB, SC, SM, SR, WA.

PLATE 7, FIG. F.

NOTES. – *Dirina catalinariae* occurs along the California coast from Monterey County to Baja California. We do not distinguish between fertile and non-fertile specimens using infraspecific categories. Specimens from the Channel Islands are usually sterile with well-developed capitate soralia. It occurs on all of the Channel Islands, especially on sea cliffs.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, above Rat Rock, *Knudsen 10668 & Kocourková* (UCR).

Endocarpon loscosii Müll. Arg., *Flora* 55: 503 (1872). Description: Breuss 2002a. Substrate: soil. World distribution: Europe, North America. CIMP distribution: SM, SR.

NOTES. – *Endocarpon loscosii* occurs in biological soil crusts in southern California, but is poorly known. It occurs on San Miguel and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, upper Willow Canyon, on soil in rock crevices, *Knudsen 6951* (UCR).

Endocarpon pallidulum (Nyl.) Nyl. in Hue, *Nouv. Archiv. Mus.*, ser. 3, 4: 106 (1892). Description: Breuss 2002a. Substrate: calcareous and non-calcareous rock, or thin soil over rock. World distribution: Asia, Australia, North and South America. CIMP distribution: uncertain (Santa Barbara Island?).

NOTES. – *Endocarpon pallidulum* is rare in southern California. The species was reported from the north Channel Islands by Breuss (2002a) without the citation of a specific collection or island. Breuss no longer had his records for this treatment when contacted.

No voucher specimen was examined for this study.

Endocarpon petrolepidium (Nyl.) Hasse, Bryologist 18: 92 (1915). Description: Breuss 2002a. Substrate: non-calcareous rock. World distribution: Asia, North America. CINP distribution: SC, SR.

NOTES. – *Endocarpon petrolepidium* is currently known in California only from the Channel Islands. Hasse reported it from the Santa Monica Mountains but it has not been rediscovered there (Hasse 1915). It is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, *Nimis 18491* (SBBG).

Endocarpon pusillum Hedwig, Descr. Micr.-Anal. Musc. Frond. 2: 56 (1789). Description: Breuss 2002a. Substrate: soil. World distribution: cosmopolitan. CINP distribution: SB, SC, SM, SR, WA.

PLATE 8, FIG. A.

NOTES. – *Endocarpon pusillum* is common throughout California in biological soil crusts. Specimens can often be poorly developed or infertile but can be determined by their long carbonized rhizohyphae. On San Miguel Island, where soil is derived from caliche, specimens can be very pruinose as in the specimen illustrated herein. The species occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Hill, on calcareous soil, *Knudsen 6701* (UCR).

Endocarpon simplicatum (Nyl.) Nyl., Revue Bot. 6: 104 (1888). Description: Breuss 2002a. Substrate: soil. World distribution: Australia, Europe, North America. CINP distribution: SC, SR.

NOTES. – *Endocarpon simplicatum* is only known in California from biological soil crusts on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, above Fraser Point, *Nash 32426* (ASU; det. Breuss).

****Endococcus matzeri*** D. Hawksw. & Iturr., Antarctic Sci. 18: 296 (2006). Description: Kainz and Triebel 2002 (as *Endococcus buelliae*, a misapplied name). Substrate: *Buellia* and *Diplotomma* species. World distribution: Antarctica, North America. CINP distribution: SR.

NOTES. – *Endococcus matzeri* is lichenicolous on *Buellia* and *Diplotomma* species and infrequent from southern California to Baja California (Kocourková et al. 2012). It is known in CINP from a single collection made on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Diplotomma venustum*, *Kocourková & Knudsen s.n.* (PRM 909682).

****Endococcus stigma*** (Körber) Stizenb., Ber. Thätigk. St. Gallischen Naturwiss. Ges. 22: 516, no. 1338 (1882). Description: Kainz and Triebel 2004. Substrate: *Acarospora* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Endococcus stigma* is lichenicolous on *Acarospora* species and frequent in southern California (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Army Road, on *Acarospora socialis*, *Knudsen 7408 & Baguskus* (UCR).

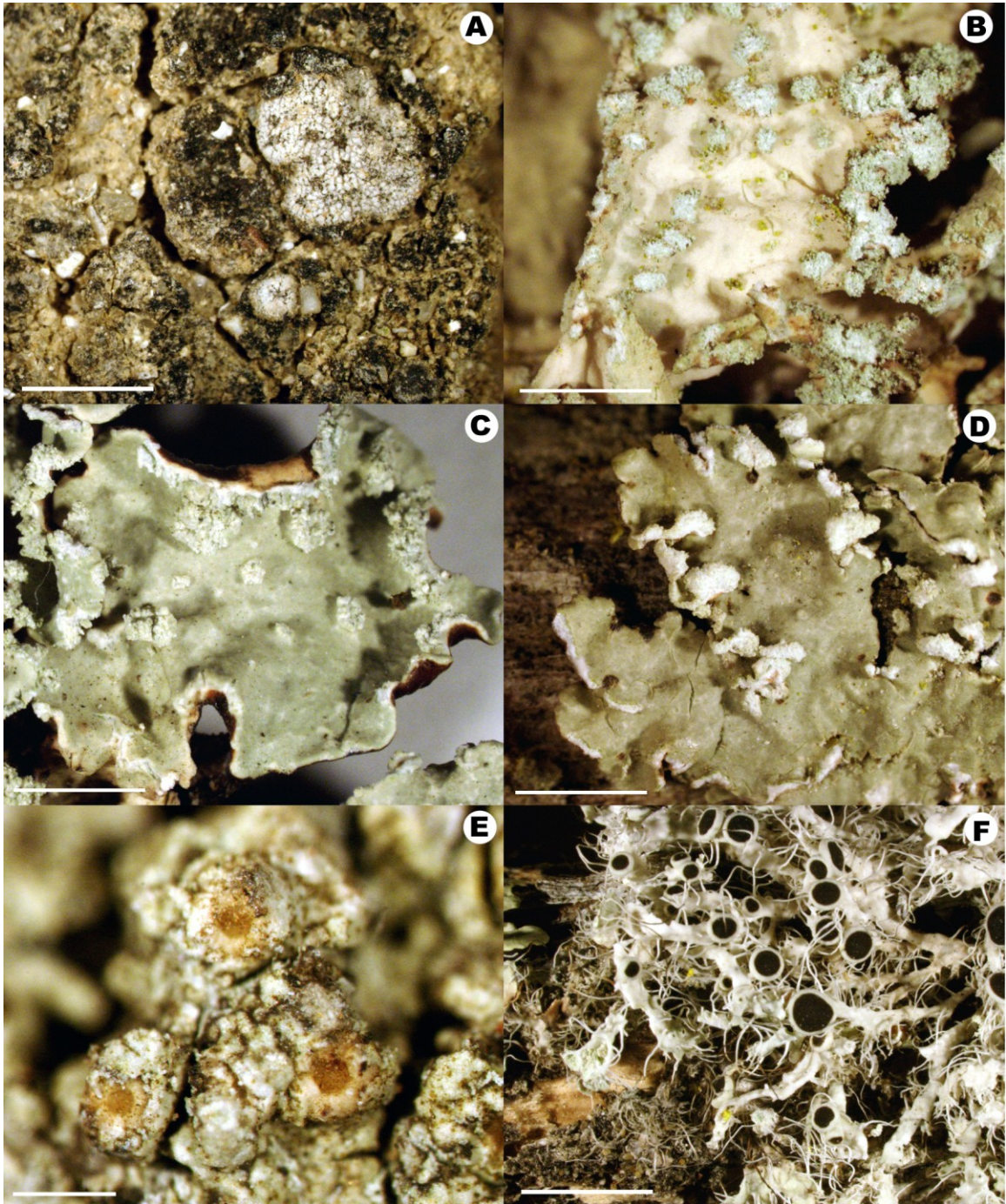


Plate 8, A, *Endocarpon pusillum* (Knudsen 6757, UCR). B, *Evernia prunastri* (Lendemer 14783, NY). C, *Flavopunctelia flaventior* (Lendemer 11448, NY). D, *F. soledica* (Lendemer 2645, NY). E, *Gyalecta herrei* (Knudsen 8746, UCR). F, *Heterodermia erinacea* (Knudsen 7248.2, UCR). Scales = 2.0 mm in F; 1.0 mm in A-D; 0.5 mm in E.

**Endococcus thelommatis* Kocourk. & K. Knudsen, Biblioth. Lichenol. 106: 174-175 (2011). Description: Kocourková and Knudsen 2011. Substrate: *Thelomma santessonii*, possibly *T. mammosum*. World distribution: North America (California endemic). CIMP distribution: SR.

NOTES. – *Endococcus thelommatis* is lichenicolous on *Thelomma santessonii* and is frequent in southern California (Kocourková et al. 2012). It is frequent on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Thelomma santessonii*, Knudsen 7414.2 (UCR).

Evernia prunastri (L.) Ach., Lich. Univ.: 442, tab. 10, fig. 1 (1810). Description: McCune and Geiser 2009. Substrate: smooth bark. World distribution: Asia, Europe, North America. CIMP distribution: SC, SM, SR.

PLATE 8, FIG. B.

NOTES. – The sorediate *Evernia prunastri* is common in California (the illustration herein shows the soralia). In CIMP it is common on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, along ridge to Ragged Mountain, on pine, Ryan 31526-B (ASU).

Flavopunctelia flaventior (Stirton) Hale, Mycotaxon 20: 682 (1994). Description: Egan 2004. Substrate: bark, especially oaks, rarely on wood or rocks. World distribution: cosmopolitan. CIMP distribution: SC, SR.

PLATE 8, FIG. C.

NOTES. – *Flavopunctelia flaventior* is common throughout California and often grows on oaks. It is common on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on fence posts, Nash 32761 (ASU).

Flavopunctelia soredica (Nyl.) Hale, Mycotaxon 20: 682 (1994). Description: Egan 2004. Substrate: bark, rocks. World distribution: cosmopolitan. CIMP distribution: SC, SR.

PLATE 8, FIG. D.

NOTES. – *Flavopunctelia soredica* is infrequent in southern and central California and is restricted to more mesic sites than *F. flaventior*. It is less frequent than *F. flaventior* on the Channel Islands and occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, near Black Mountain, Wetmore 73541 (ASU, MIN; det. Egan).

Fulgensia desertorum (Tomin) Poelt, Mitt. Bot. Staatssamml. München 5: 600 (1965). Description: Kasalicky 2004. Substrate: soil. World distribution: northern hemisphere. CIMP distribution: SR.

NOTES. – *Fulgensia desertorum* is rare in California. We suspect it was once more common in biological soil crusts on the north Channel Islands. Several species of *Fulgensia* are found on San Nicolas Island where biological soil crusts are more intact. It is known from a single collection made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on soil, Knudsen 8959.2 (UCR)

Fuscopannaria coralloidea P.M. Jørg., Bryologist 103: 681 (2000). Description: Jørgensen 2002a. Substrate: soil. World distribution: North America. CIMP distribution: SC, SR.

NOTES. – *Fuscopannaria coralloidea* is infrequent in California, reaching the limit of its range in southern California where specimens are often poorly developed. It is infrequent on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, central valley, *Bratt 3684* (SBBG; det. Jørgensen).

Fuscopannaria praetermissa (Nyl.) P.M. Jørg., J. Hattori Bot. Lab. 76: 205 (1994). Description: Jørgensen 2000a. Substrate: soil. World distribution: Antarctica, temperate northern hemisphere. CINP distribution: SC, SR.

NOTES. – *Fuscopannaria praetermissa* is a apparently rare montane species in California, with only two historical collections by H.E. Hasse from the San Gabriel Mountains in southern California (Jørgensen 2000). It is rare on Santa Cruz and Santa Rosa Islands in CINP. But though the species is reported from the Channel Islands (Jørgensen 2002) there are no specimens at ASU and SBBG from Channel Islands annotated by P.M. Jørgensen (CNALH 2012). All these specimens need revision, including the voucher cited below.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, on soil, *Wetmore 73822* (MIN).

Gyalecta herrei Vězda, Annot. Zool.-Bot. 13: 1 (1963). Description: Ryan and Nimis 2004. Substrate: bark, sometimes on soil or decaying rock. World distribution: North America (California endemic). CINP distribution: SC, SR, WA.

PLATE 8, FIG. E.

NOTES. – *Gyalecta herrei* is a California endemic. Though the species usually occurs on bark, it was collected on the decaying rock of a shady seasonal waterfall on Santa Rosa Island growing mixed with *G. jenensis*. It occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on twigs of coastal sage shrubs, *Knudsen 10883.1* (UCR).

Gyalecta jenensis (Batsch) Zahlbr., Cat. Lich. Univ. 2: 720 (1924). Description: Ryan and Nimis 2004. Substrate: calcareous rock, mortar, or soil, sometimes on mosses. World distribution: Africa, Europe, North America. CINP distribution: EA, SR, WA.

NOTES. – *Gyalecta jenensis* is a calciphile which is rare along the south and central coast of California. It occurs on Anacapa and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, lower Oak Canyon, on shaded calcium-entrusted basalt, *Knudsen 10882* (UCR)

Harpidium nashii Scheidegger in Schultz et al., Bryologist 103: 802 (2000). Description: Schultz et al. 2000. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC.

NOTES. – The crustose cyanolichen *Harpidium nashii* is a globally rare species. It is known in California from a single collection made on Santa Cruz Island and from two collections from Baja California in Mexico. The species has not been rediscovered in CINP since its original collection in 2007.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, N side of Central Valley, on volcanic rock, *Printzen s.n.* (hb. Printzen).

Heterodermia erinacea (Ach.) W.A. Weber, Bryologist 90: 163 (1987). Description: Moberg and Nash 2000. Substrate: bark, cacti. World distribution: North America. CINP distribution: SC, SR, WA.
PLATE 8, FIG. F.

NOTES. – *Heterodermia erinacea* is common along the coast of Baja California though infrequent northward along the California coast. It occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on *Adenostoma fasciculatum*, Marsh 6903 (ASU; det. Moberg).

Heterodermia leucomela (L.) Poelt, Nova Hedwigia 9: 31 (1965). Description: Moberg and Nash 2000. Substrate: bark. World distribution: North and South America. CINP distribution: SC, SM, SR, WA.
PLATE 9, FIG. A.

NOTES. – *Heterodermia leucomela* is a sorediate species that is common along the California coast and is part of the tropical element in the western North America lichen biota. It occurs on West Anacapa, Santa Cruz, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, summit of Black Mountain, common on moss on *Quercus tomentella*, Knudsen 7377 & Baguskus (UCR).

Heterodermia namaquana Brusse, Bothalia 22: 183 (1992). Description: Moberg and Nash 2000. Substrate: bark of various phorophytes. World distribution: Africa, North America. CINP distribution: SB, SC, SM, SR, WA.
PLATE 9, FIG. B.

NOTES. – *Heterodermia namaquana* is common along the coast of central California in San Luis Obispo and Monterey Counties. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on *Isomeris*, Knudsen 7801 (UCR).

Hyperphyscia adglutinata (Flörke) H. Mayrhofer & Poelt, Herzogia 5: 62 (1979). Description: Moberg 2002a. Substrate: bark, especially oaks. World distribution: Africa, Europe, North and South America. CINP distribution: SC.

NOTES. – *Hyperphyscia adglutinata* is common on oaks in California and can easily be overlooked. It is currently only known from Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon, on *Quercus*, Bratt 6421 (SBBG; det. Esslinger).

Hyperphyscia confusa Essl., C.A. Morse & S. Leavitt, Bryologist 115: 31-32. Description: Esslinger et al. 2012. Substrate: bark, rarely on rock. World distribution: North America. CINP distribution: SC.

NOTES. – *Hyperphyscia confusa* occurs on Santa Cruz Island on rock as it does in a recent collection from the San Jacinto Mountains (Knudsen 15085, UCR).

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Cañada del Puerto, on rock, Ryan 31628 (ASU).

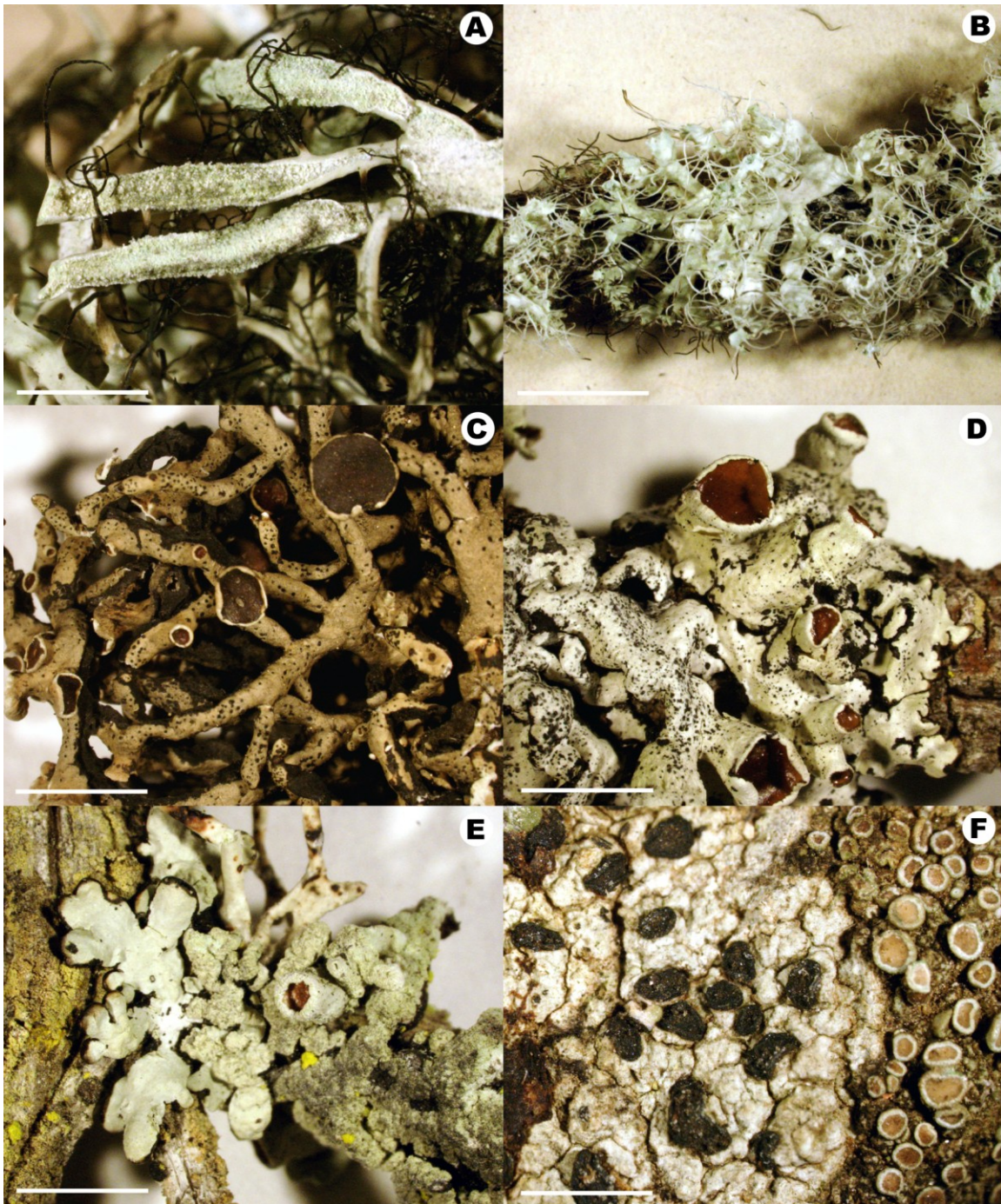


Plate 9, A, *Heterodermia leucomela* (Knudsen 6817, UCR). B, *H. namaquana* (Knudsen 7248.1, UCR). C, *Hypogymnia gracilis* (Hasse s.n., NY). D, *Hypogymnia minilobata* (Lendemer 5706, NY). E, *Hypogymnia mollis* (Knudsen 11084, UCR). F, *Lecanactis californica* (Knudsen 10912.1, UCR). Scales = 2.0 mm in C-E; 1.0 mm in A, B and F.

Hypocenomyce scalaris (Ach. ex Lilj.) M. Choisy, Bull. Mens. Soc. Linn. Lyon 20: 133 (1951).
Description: Timdal 2002a. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – This is a common montane species in California, even colonizing burnt wood. It is known from a single collection on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km E of radar station, on wood, *Nash 32486* (ASU; det. Timdal).

Hypogymnia gracilis McCune, Lichen Flora of the Greater Sonoran Desert Region 1: 231 (2002).
Description: McCune 2002. Substrate: bark. World distribution: North America. CINP distribution: SC.

PLATE 9, FIG. C.

NOTES. – *Hypogymnia gracilis* is widespread but infrequent along the coast of southern and central California. The illustration presented here is of a historic collection by H.E. Hasse from the Santa Monica Mountains where it has likely been extirpated by frequent fires in the chaparral. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, eastern Pines, on manzanita, *Bratt 1995-A* (SBBG; det. McCune).

Hypogymnia heterophylla L.H. Pike, Mycotaxon 16: 157 (1982). Description: McCune 2002. Substrate: bark. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Hypogymnia heterophylla* is a common northern species with disjunct populations at the southern limit of its distribution on the north Channel Islands. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge to Ragged Mountain, on bark, *Ryan 31523* (ASU, UCR; det. McCune).

Hypogymnia imshaugii Krog, Norsk Polarinst. Skrifter 144: 96 (1968). Description: McCune 2002. Substrate: bark. World distribution: North America. CINP distribution: SC.

NOTES. – *Hypogymnia imshaugii* is common in California and is often locally abundant, especially in old growth chaparral. Like many species that occur in this habitat it can disappear from an area with increased fire frequencies. In CINP it occurs on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 1 mile W of Navy Base, on *Quercus agrifolia*, *Bratt 2081* (SBBG; det. McCune).

Hypogymnia minilobata McCune & Schoch, Bryologist 112: 97 (2009). Description: McCune and Schoch 2009. Substrate: bark, wood. World distribution: North America (California endemic). CINP distribution: SC, SR.

PLATE 9, FIG. D.

NOTES. – The recently described *Hypogymnia minilobata* is a California endemic occurring along the southern and central California coast as well as on the north Channel Islands. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, off Telegraph Road, on old wood of manzanita, *Knudsen 10619* (UCR).

Hypogymnia mollis L.H. Pike & Hale, Mycotaxon 16: 161 (1982). Description: McCune 2002. Substrate: bark. World distribution: North America. CINP distribution: SC, SR, WA.

PLATE 9, FIG. E.

NOTES. – *Hypogymnia mollis* is a distinctive sorediate species that occurs along the coast of California and Mexico. It is locally abundant in the Los Osos area of San Luis Obispo County and on the Channel Islands. It occurs on West Anacapa, Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Pinus muricata*, Knudsen 10585 (UCR).

Hypogymnia schizidiata McCune, Lichen Flora of the Greater Sonoran Desert Region, 1: 236 (2002). Description: McCune 2002. Substrate: bark. World distribution: North America (islands of Baja California and north Channel Islands). CINP distribution: SC, SR.

NOTES. – *Hypogymnia schizidiata* is a rare species only known in California from four collections made on Santa Cruz Island (Christi Pines, collected by C. Bratt in 1981 and 1983) and Santa Rosa Island (near Black Mountain, collected by T.H. Nash and B.D. Ryan in 1994) on Bishop Pines. Both populations were not rediscovered during recent inventory work and more fieldwork is needed to establish that they have not been extirpated. This is a real possibility on Santa Rosa Island where the Bishop Pines were heavily impacted by grazing. The species is listed as globally rare by the California Department of Fish and Game (McCune 2006).

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, near Black Mountain, on old *Pinus muricata*, Nash 33051-A (ASU; det. McCune).

Hypogymnia tubulosa (Schaerer) Hav., Bergens Mus. Aarbog. Hefte 1, Naturvidensk Rakke 1917-18: 31 (1918). Description: McCune 2002. Substrate: bark. World distribution: northern hemisphere. CINP distribution: SC.

NOTES. – *Hypogymnia tubulosa* is widespread in temperate North America but is infrequent along the central California coast in Santa Barbara County. It occurs only on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Ridge Road, above Centinela, on *Quercus chrysolepis*, Bratt 1815 (SBBG; verif. McCune).

Hypotrachyna afrorevoluta (Krog & Swinscow) Krog & Swinscow, Lichenologist 19: 420 (1987). Description: Krog and Swinscow 1987; Knudsen and Lendemer 2005; Lendemer 2006. Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Hypotrachyna afrorevoluta* is a sorediate species that has been identified from Marin County and Santa Cruz Island. The population on Santa Cruz Island was collected in Christi Pines and was previously identified as *H. revoluta* (Flörke) Hale. It is possible both species occur on the Channel Islands or all specimens identified in the past as *H. revoluta* are actually *H. afrorevoluta*. In this paper only *H. afrorevoluta* is accepted as occurring on the islands pending a revision of the specimens identified as *H. revoluta*.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Christi Pines, on *Pinus muricata*, Knudsen *et al.* 8563 (UCR, det. Lendemer).

Ingvariella bispora (Nagl.) Guderley & Lumbsch, Nova Hedwigia 64: 152 (1997). Description: Lumbsch 2004. Substrate: non-calcareous rock. World distribution: cosmopolitan in alpine habitats. CINP distribution: SR.

NOTES. – *Ingvariella bispora* is only known from California from Santa Rosa Island (Lumbsch 2002). The actual specimen was not cited in that publication. The taxon was recently transferred from Thelotremaaceae to Stictidaceae (Fernández-Brime et al. 2011).

No voucher specimen was seen for this study.

****Intralichen baccisporus*** D. Hawksw. & M.S. Cole, Fungal Diversity 11: 89 (2002). Description: Hawksworth and Cole 2002. Substrate: *Caloplaca* species. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – The fungus *Intralichen baccisporus* is probably frequent in California on species of *Caloplaca* but rarely collected or reported. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, above Water Canyon, on *Caloplaca bolacina*, Kocourková & Knudsen s.n. (PRM 909535)

****Intralichen lichenicola*** M.S. Christ. & D. Hawksw., Fungal Diversity 11: 93 (2002). Description: Hawksworth and Cole 2002. Substrate: wide range of lichens. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Intralichen lichenicola* was recently reported new to North America from Santa Rosa Island (Kocourková et al. 2012). It is only known from California from Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, near Burma Road, on *Lecanora dispersa* group, Kocourková & Knudsen s.n. (PRM 909118).

†***Julella vitrispora*** (Cooke & Harkness) M.E. Barr, Sydowia 38: 13 (1986). Description: Aptroot 2002b. Substrate: bark. World distribution: pantropical. CINP distribution: SC.

NOTES. – *Julella vitrispora* is common in Mexico extending north at least into coastal southern California. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon Rd., on bark, *Tucker 35602-B* (ASU, SBBG; det. Aptroot).

Kaernefeltia merrillii (DuRietz) Thell & Goward, Bryologist 97: 393 (1994). Description: Thell 2002. Substrate: bark, wood. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Kaernefeltia merrillii* is frequent in California and often locally abundant on old growth chaparral in southern California and Baja California. *Kaernefeltia californica* (Tuck.) Thell & Goward occurs on the central coast of California from San Luis Obispo north but has not been discovered on the Channel Islands. *Kaernefeltia merrillii* occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain, on *Pinus muricata*, Knudsen et al. 7646 (UCR).

Koerberia sonomensis (Tuck.) Henssen, Canad. J. Bot. 41: 1351 (1963). Description: McCune and Geiser 2009. Substrate: non-calcareous rock. World distribution: Africa, Europe, North America. CINP distribution: SC.

NOTES. – *Koerberia sonomensis* is infrequent in California, especially in the mountains, becoming more common in the Pacific Northwest. In CINP it is known from a single collection on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km E of radar station, on rock, *Nash 32448-A* (ASU).

Lecanactis californica Tuck., Synops. N. Amer. Lich. 2: 115 (1888). Description: Ryan and Tehler 2002. Substrate: bark, seashore rocks. World distribution: North America. CINP distribution: EA, SC, SM, SR, WA.

PLATE 9, FIG. F.

NOTES. – *Lecanactis californica* is a common maritime lichen on shrubs along the southern and central California coast. It occurs on Anacapa, Santa Cruz, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on dead *Baccharis* branches, *Knudsen* 5291 (UCR).

Lecanactis salicina Zahlbr. in Hasse, Bryologist 11: 7 (1906). Description: Ryan and Tehler. 2002. Substrate: bark, pine cones. World distribution: North America. CINP distribution: SC.

NOTES. – *Lecanactis salicina* is less infrequent in coastal California than *L. californica*. It differs from *L. californica* especially in having smaller apothecia and lacking psoromic acid. *Lecanactis dubia* G. Merr. lacks psoromic acid like *L. salicina* but has longer ascospores. That species is only known from a historical collection from Santa Catalina Island and may be discovered in CINP. Within CINP *Lecanactis salicina* is known only from a single collection made on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon Road, *Bratt* 3122-A & *Larson* (SBBG; det. Egea).

Lecania brunonis (Tuck.) Herre, Proc. Wash. Acad. Sci. 3: 188 (1910). Description: v.d. Boom and Ryan 2004. Substrate: non-calcareous rock, serpentine. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Lecania brunonis* is common in coastal California. The thallus is quite variable, from areolate to squamulose, but the 1-septate ascospores are consistently 10–15 x 4–6 µm. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: West Anacapa Island, on basalt, *Knudsen* 10813 (UCR).

Lecania caloplacicola B.D. Ryan & v.d. Boom, Lichen Flora of the Greater Sonoran Desert Region 2: 150 (2004). Description: v.d. Boom and Ryan 2004. Substrate: juvenile parasite on *Caloplaca* species on calcareous or non-calcareous rock, developing an independent lichenized thallus. World distribution: North America (California endemic). CINP distribution: SR (endemic).

PLATE 10, FIG. A.

NOTES. – *Lecania caloplacicola* is endemic to Santa Rosa Island. It is a juvenile parasite on *Caloplaca bolacina* and probably *C. ludificans*. It was described from two collections made by B.D. Ryan on Sandy Point, where it is rare. The species is only known from one other population on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, between Arlington and Soledad Canyon, parasitic on *Caloplaca bolacina* with well developed independent thallus on HCl- rock, *Knudsen et al.* 8923 (UCR).

Lecania cyrtella (Ach.) Th. Fr., Lichenogr. Scand. 1: 294 (1871). Description: v.d. Boom and Ryan 2004. Substrate: on smooth bark, including *Eucalyptus*. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

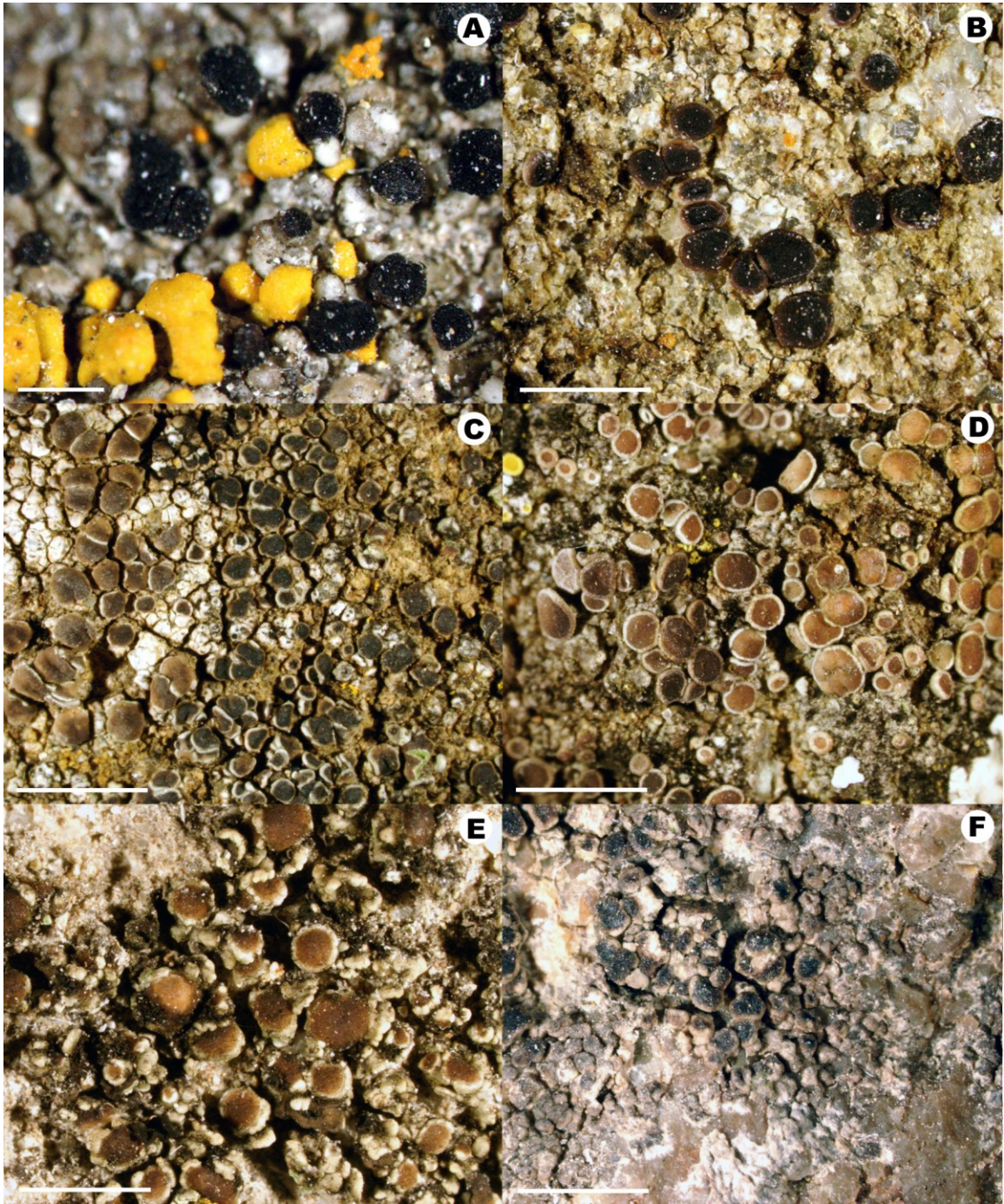


Plate 10, A, *Lecania caloplacicola* (Knudsen 8923, UCR). B, *L. franciscana* (Knudsen 6820, UCR). C, *L. fructigena* (Knudsen 10850, UCR). D, *L. fuscella* (Knudsen 5308, UCR). E, *L. hassei* (Knudsen 8685.1, UCR). F, *L. pacifica* (Knudsen 8182, UCR). Scales = 2.0 mm in C; 1.0 mm in B, D-F; 0.5 mm in A

NOTES. – *Lecania cyrtella* is common along the California coast from Monterey to San Diego County. It is often associated with *Physcia adscendens* (Fr.) H. Olivier, *Xanthoria* and *Xanthomendoza* species especially on elder berry, coastal sage shrubs, and maritime chaparral. It is a fast growing pioneer and is replacing many rare crustose species in areas with high fire frequencies. It is tolerant of artificial enrichment by nitrogen. All specimens examined had eight ascospores per ascus. Though lumped with *L. cyrtella* by v.d. Boom and Ryan (2004), specimens with 10–16 ascospores per ascus, mostly 3–4 µm wide, and with a hymenium usually shorter than 40 µm, are referable *Lecania sambucina* (Körb.) Arnold, which has not yet been discovered in North America. *Lecania cyrtellina* (Nyl.) Sandst., also not yet reported for North America, has 8-spored asci with broader ascospores than *L. cyrtella*, and the ascospores usually lack septa. *Lecania cyrtella* occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Carrington Point, on *Lupinus albifrons*, *Knudsen et al. 10548* (UCR).

Lecania dudleyi Herre, Proceed. Wash. Acad. Sci. 12: 188 (1910). Description: v.d. Boom and Ryan 2004. Substrate: calcareous and non-calcareous rock and soil. World distribution: North America. CINP distribution: SB, SC, SM, SR.

NOTES. – *Lecania dudleyi* is common along the California coast from Baja California to at least as far north as Santa Cruz County, often occurring in biological soil crusts. The species occurs on San Miguel, Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, bluffs west of Verde Canyon, on consolidated soil, *Knudsen et al. 8926* (UCR).

Lecania franciscana (Tuck.) K. Knudsen & Lendemer, Mycotaxon 101: 85 (2007). Syn.: “*Lecania subdispersa* (Nyl. ex B.D. Ryan) emed. B.D. Ryan” (v.d. Boom & Ryan 2004; Knudsen & Lendemer 2007). Description: v.d. Boom and Ryan 2004 (as *Lecania subdispersa*). Substrate: calcareous and non-calcareous rock. World distribution: North America (California endemic). CINP distribution: SB, SC, SM, SR.

PLATE 10, FIG. B.

NOTES. – *Lecania franciscana* is relatively infrequent along the coast of California occurring from San Francisco (the type locality is in Oakland) to the Santa Monica Mountains, and is especially common on caliche on San Miguel Island and on San Nicolas Island. In CINP it occurs on San Miguel, Santa Barbara, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on rock, *Knudsen 11916.1* (UCR).

Lecania fructigena Zahlbr. in Hasse, Bryologist 17: 61 (1914). Description: v.d. Boom and Ryan 2004. Substrate: calcareous and non-calcareous rock. World distribution: Europe, North America, New Zealand. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 10, FIG. C.

NOTES. – *Lecania fructigena* is especially common on boulders and cliffs exposed to salt spray along the coast. The only other species occurring in this microhabitat is *L. pacifica* which is relatively rare along coast from San Simeon to the Palos Verdes Peninsula. That species is distinguished from *L. fructigena* by its usually orbicular thallus with a conspicuous prothallus. *Lecania fructigena* is common on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on volcanic rock, *Knudsen 11951* (UCR).

Lecania fuscella (Schaerer) Körber, Syst. Lich. Ger. 122 (1855). Description: v.d. Boom and Ryan 2004. Substrate: on bark. World distribution: Africa, Europe, North America. CINP distribution: EA, SB, SR, WA.

PLATE 10, FIG. D.

NOTES. – *Lecania fuscella* is infrequent along the coast of California from the Santa Monica Mountains (where it is probably now extirpated) north to Santa Barbara County. *Lecania fuscelloides* B.D. Ryan & v.d. Boom is probably a synonym of *L. fuscella* and is currently not recognized as occurring in CINP. *Lecania fuscella* occurs on Anacapa, Santa Barbara, San Miguel, and Santa Rosa Islands and is often locally abundant.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA VENTURA CO.: East Anacapa Island, on *Leptosyne gigantea*, Knudsen 10913 (UCR).

Lecania hassei (Zahlbr.) W. Noble in Ahti et al., Mycotaxon 28: 93 (1987). Description: v.d. Boom and Ryan 2004 (as *L. hassei* and *L. brattiae* B.D. Ryan & v.d. Boom, the latter of which is a synonym), Knudsen & Lendemer 2007. Substrate: usually non-calcareous rock. World distribution: North America. CINP distribution: EA, SB, SC, SR, WA.

PLATE 10, FIG. E.

NOTES. – *Lecania hassei* is frequent on the Channel Islands, though rare along the California coast. It was originally described from the Santa Monica Mountains. The thallus of the species can be variable, from areolate to squamulose. It occurs on Anacapa, Santa Barbara, Santa Cruz, and Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, top of East Point, on rock, Knudsen 8840.1 (UCR).

Lecania inundata (Hepp ex Körber) M. Mayrhofer in Nimis & Poelt, Studia Geobot. 7: 111 (1987). Description: v.d. Boom and Ryan 2004. Substrate: calcareous rock, concrete. World distribution: Europe, North America. CINP distribution: SC, SM, SR.

NOTES. – *Lecania inundata* is infrequent on the Channel Islands and is known from only a few collections elsewhere along the California coast. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge above Chinese Harbor, on concrete rim of cistern, Knudsen et al. 8530 (UCR).

Lecania naegelii (Hepp) Diederich & v.d. Boom, Bull. Soc. Nat. Luxemb. 95: 154 (1994). Description: v.d. Boom and Ryan 2004. Substrate: bark. World distribution: Europe, North America. CINP distribution: SC, SM, SR.

NOTES. – *Lecania naegelii* is frequent along the California coast where it occurs on coastal sage shrubs and chaparral, often with *L. crytella*. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Willow Canyon, on smooth bark of willow, Knudsen 6915 (UCR).

Lecania pacifica Zahlbr. ex B.D. Ryan & v.d. Boom, Lichen Flora of the Greater Sonoran Desert Region 2: 162. Description: v.d. Boom and Ryan 2004. Substrate: non-calcareous rock. World distribution: North America (California endemic). CINP distribution: SB, SC, SR.

PLATE 10, FIG. F.

NOTES. – *Lecania pacifica* is infrequent in southern and central California along the coast and often grows in the salt spray zone with *L. fructigena*. It occurs on Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, mouth of wash on Bechers Bay, on rock, *Knudsen 8981* (UCR).

Lecania rabenhorstii (Hepp) Arnold, Flora 67: 403 (1884). Description: v.d. Boom and Ryan 2004. Substrate: usually on calcareous rocks. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Lecania rabenhorstii* appears to be rare in southern and central California, but may be overlooked. It is known only from Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, bluffs west of Verde Canyon, on rock, *Knudsen 8932* (UCR).

Lecania ryaniana v.d. Boom, Lichen Flora of the Greater Sonoran Desert Region 2: 165 (2004). Description: v.d. Boom and Ryan 2004. Substrate: caliche, usually calcareous rock. World distribution: North America (California endemic). CINP distribution: SM, SR.

PLATE 11, FIG. A.

NOTES. – *Lecania ryaniana* is endemic to California, occurring only on calcareous substrates on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on caliche, *Knudsen et al. 7792.1* (UCR).

Lecania toninioides Zahlbr., Beih. Bot. Centrabl. 8: 106 (1902). Description: v.d. Boom and Ryan 2004. Substrate: soil, decaying sandstone. World distribution: North America. CINP distribution: SM, SR.

NOTES. – *Lecania toninioides* usually occurs in biological soil crusts and has possibly been extirpated from much of its former range in coastal California, especially on the Channel Islands, by grazing and subsequent soil erosion. It is infrequent on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, ranch area, on soil, *Knudsen 8809* (UCR).

Lecania turicensis (Hepp) Müll. Arg., Mém. Soc. Phys. Genève 16: 386 (1862). Description: v.d. Boom and Ryan 2004. Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CINP distribution: WA, SM, SR.

NOTES. – *Lecania turicensis* is infrequent along the southern and central California coast. It occurs on West Anacapa, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on rock, *Knudsen et al. 10507* (UCR).

Lecanographa aggregata Egea & Torrente, Biblioth. Lichenol. 54: 120 (1994). Description: Egea et al. 2004c. Substrate: bark. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Lecanographa aggregata* is known from California on the basis of a single collection made on Santa Rosa Island near Black Mountain. This collection may actually represent a species new to science since it was treated as “aff. *aggregata*” by Egea et al. (2004c).

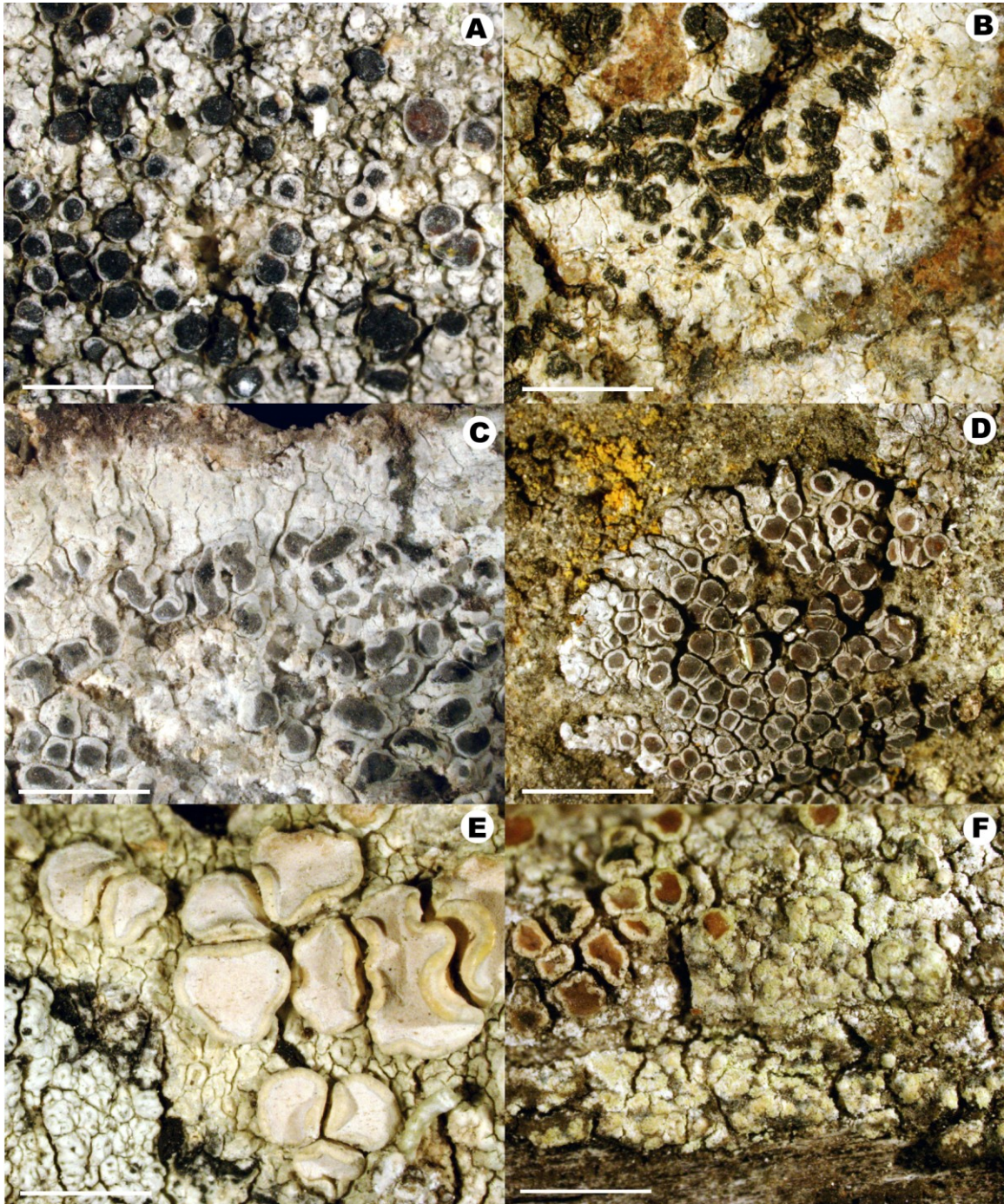


Plate 11, A, *Lecania ryaniana* (Knudsen 8875.1, UCR). B, *Lecanographa brattiae* (Knudsen 10641.1, UCR). C, *L. hypothallina* (Knudsen 7476.2, UCR). D, *Lecanora albocaesiella* (Knudsen 8929.2, UCR). E, *Lecanora caesiorubella* (Knudsen 7597, UCR). F, *Lecanora carneolutescens* (Knudsen 6778.1, UCR). Scales = 2.0 mm in C; 1.0 mm in A, B, D-F.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain area, on *Quercus tomentella*, Nash 33045 (ASU; det. Egea and Torrente).

Lecanographa brattiae (Egea & Ertz) Ertz & Tehler, Fungal Diversity 49: 55 (2011). Description: Ertz and Egea 2007 (as *Opegrapha brattiae*). Substrate: non-calcareous rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 11, FIG. B.

NOTES. – *Lecanographa brattiae*, occurs along the coast of California in San Luis Obispo County and on the Channel Islands. It was originally discovered on Santa Barbara Island by C. Bratt. The species occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, end of Willow Canyon, on rock, Knudsen 6920.1 (UCR).

Lecanographa dimelaenoides (Egea & Torrente) Egea & Torrente, Biblioth. Lichnol. 54: 128 (1994). Description: Egea et al. 2004c. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Lecanographa dimelaenoides* occurs only on the Channel Islands in California. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, Nash 37028 (ASU; det. Sparrius).

Lecanographa hypothallina (Zahlbr.) Egea & Torrente, Biblioth. Lichnol. 54: 139 (1994). Description: Egea et al. 2004c. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 11, FIG. C.

NOTES. – *Lecanographa hypothallina* is the most common member of the genus in California, occurring at scattered locations along the coast from San Diego north to Point Lobos in Monterey County. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Arlington Canyon, Knudsen 8720 & Kocourková (UCR).

Lecanographa insolita Lendemer & K. Knudsen, Bryologist 113: 351 (2011). Description: Lendemer and Knudsen 2011. World distribution: North America (California endemic). CINP distribution: SR.

NOTES. – *Lecanographa insolita* was recently described from Lobo Canyon on Santa Rosa Island. It is the only member of the genus with a green photobiont. The species is only known from Santa Rosa Island and a few collections made along the coast in Santa Barbara and Monterey Counties as well as the Presidio in San Francisco.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, Knudsen 11401 (NY, UCR).

Lecanographa lyncea (Sm.) Egea & Torrente, Biblioth. Lichnol. 54: 142 (1994). Description: Egea et al. 2004c. Substrate: dry acidic bark, wood. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Lecanographa lyncea* is frequent in Baja California, but is only known in California from a single collection that was made on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Heteromeles arborescens*, Nash 32955 (ASU; det. Egea).

Lecanographa lynceoides (Mull. Arg.) Egea & Torrente, *Biblioth. Lichnol.* 54: 147 (1994). Description: Egea et al. 2004c. Substrate: non-calcareous rock. World distribution: North and South America. CIMP distribution: SR.

NOTES. – *Lecanographa lynceoides* is only known from California on the basis of a single collection that was made on Santa Rosa Island. The rarity of *L. lyncea* and *L. lynceoides* may be natural, however it may also have been caused by the destruction of native vegetation by grazing of sheep, cattle, and introduced deer and elk.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on *Artemisia californica*, Nash 32738 (ASU; det. Egea).

Lecanora albella (Pers.) Ach., *Lich. Univ.*: 369 (1810). Description: Ryan et al. 2004a. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SC, SR.

NOTES. – *Lecanora albella* is a common Holarctic species, known from only a few collections in California. It is easily confused on Channel Islands where *L. caesiurubella* is much more common. Both species have pruinose discs and similar chemistries and are separated mainly by width of pseudocortex and apothecium size. It occurs on Santa Cruz and Santa Rosa Islands and was only collected by C.M. Wetmore in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine grove, on bark, *Wetmore* 73924 (MIN)

Lecanora albocaesiella B.D. Ryan & T.H. Nash in Ryan et al., *Lichen Flora of the Greater Sonoran Desert Region 2*: 190 (2004). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: North America. CIMP distribution: SR.

PLATE 11, FIG. D.

NOTES. – *Lecanora albocaesiella* is rare in California and was described from San Nicolas Island. It occurs on Santa Rosa Island in CIMP

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, bluffs west of Verdes Canyon, on rock, *Knudsen et al.* 8929.2 (UCR).

Lecanora andrewii B. de Lesd. in M. Andrew, *Transact. and Proceed. Botan. Soc. of Edinburgh* 26: 184 (1913). Description: Śliwa 2007. Substrate: non-calcareous rock. World distribution: Europe, North America. CIMP distribution: SR.

NOTES. – *Lecanora andrewii* is known from a small number of collections across North America. It is only known from California from Lobo Canyon on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Ryan* 31286-B (ASU; det. Śliwa).

Lecanora brattiae B.D. Ryan & T.H. Nash in Ryan et al., *Lichen Flora of the Greater Sonoran Desert Region 2*: 200 (2004). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: North America (California endemic). CIMP distribution: SB, SC.

NOTES. – *Lecanora brattiae* is a rare brown effigurate species that is poorly understood. It was discovered by C. Bratt on Santa Barbara Island and is often associated with *Verrucaria subdivisa*. The species is known from CIMP from single collections from Santa Barbara and Santa Cruz Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, Cliff Canyon, *Bratt* 3659 (SBBG).

Lecanora caesiorubella Ach., Lich. Univ.: 366 (1810). Description: Ryan et al. 2004a. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SC, SM, SR.

PLATE 11, FIG. E.

NOTES. – *Lecanora caesiorubella* is especially common in coastal California. The Channel Island populations produce norstictic acid and are a favorite food of mites. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Beecher Bay, on corral fences, *Knudsen 8978* (UCR).

Lecanora californica Brodo, Beih. Nova Hedwigia 79: 107 (1984). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: North America (California endemic). CIMP distribution: SC, SM, SR.

NOTES. – *Lecanora californica* is a California endemic known from the coast from San Mateo to Sonoma Counties as well as the north Channel Islands. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CIMP. Based on our study this name may be a synonym of *Lecanora gangaleoides*.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Burma Road, *Knudsen 7781* (NY, UCR).

Lecanora campestris (Schaerer) Hue, Bull. Soc. Bot. France 35: 47 (1888). Description: Ryan et al. 2004a. Substrate: non-calcareous or calcareous rock, soil. World distribution: cosmopolitan. CIMP distribution: SC, SR, WA.

NOTES. – *Lecanora campestris* is a common European species which is relatively infrequent in California. Older identifications of this species by Californian lichenologists are generally incorrect. It is rare on Santa Cruz and Santa Rosa Islands and probably also occurs on west Anacapa Island based on our examination of a poor specimen made on consolidated soil in an extensive biological soil crust.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on rock, *Nash 32755* (ASU; det. Lumbsch).

Lecanora carneolutescens Nyl., Flora 61: 380 (1858). Description: Ryan et al. 2004a. Substrate: on bark. World distribution: North America. CIMP distribution: SM.

PLATE 11, FIG. F.

NOTES. – *Lecanora carneolutescens* is a sorediate species with rare apothecia that was originally described from Mexico. It is only known in California from San Miguel Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on *Baccharis*, *Knudsen 6710* (UCR).

Lecanora comonduensis T.H. Nash & Hertel, Bryologist 101: 377 (1997), spelling emended in Bryologist 101: 354 (1998). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: North America. CIMP distribution: SC.

NOTES. – *Lecanora comonduensis* is relatively common in Mexico and Arizona. It is only known in California from Santa Catalina Island, where it appears to be frequent, and from two collections on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge to Ragged Mountain, on rock, *Nash 32362* (ASU).

Lecanora confusa Almb., Kongl. Vetensk.-Akad. Avh. Naturk. 11: 72 (1955). Description: Ryan et. al. 2004a. Substrate: bark. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Lecanora confusa* is common along the central and southern California coast. It is sometimes sorediate or forms a sterile leprose crust. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Prisoner's Harbor, on *Quercus agrifolia*, Ryan 31481 (ASU; det. Printzen).

Lecanora crenulata Hook. in Smith, Engl. Fl. 5: 190 (1833). Description: Ryan et. al. 2004a; Šliwa 2007. Substrate: calcareous rock. World distribution: Asia, Europe, North America. CINP distribution: SR.

NOTES. – *Lecanora crenulata* is frequent on calcareous substrates in California. It occurs on Sandy Point on Santa Rosa Island and is expected to occur on San Miguel Island on caliche.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, Nash 32687 (ASU; det. Šliwa).

Lecanora demosthenesii Lumbsch & Messuti in Lumbsch et al., Bryologist 106: 554 (2003). Description: Ryan et al. 2004a. Substrate: bark, often on rock. World distribution: North America. CINP distribution: SC, SM, SR.

PLATE 12, FIG. A.

NOTES. – *Lecanora demosthenesii* occurs along the California coast in Monterey County. In CINP it occurs on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, above Fraser Point, on *Artemisia californica*, Nash 32390-B (ASU; det. Lumbsch).

Lecanora dispersa (Pers.) Flörke, Deutsche Lichenen 3: 4 (1815). Description: Ryan et. al. 2004a; Šliwa 2007. Substrate: calcareous or non-calcareous rock, wood and especially dusty bark. World distribution: cosmopolitan. CINP distribution: SM, SR.

NOTES. – *Lecanora dispersa* is frequent in California, but until Šliwa (2007) published her monograph of the *L. dispersa* group in North America it was poorly known. Many older identifications from California are misidentifications of *L. hagenii* and it is currently known from San Miguel and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Windmill Canyon, on rock, Knudsen 10444 (UCR).

Lecanora expallens Ach., Lich. Univ.: 374 (1810). Description: Ryan et al. 2004a. Substrate: bark, wood, detritus. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Lecanora expallens* is a sorediate to completely leprose species that is relatively rare along the California coast. The name has been used for any leprose crust on bark by some California lichenologists. It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, road to Ford Point, on wood fence, Knudsen 10498 (UCR).

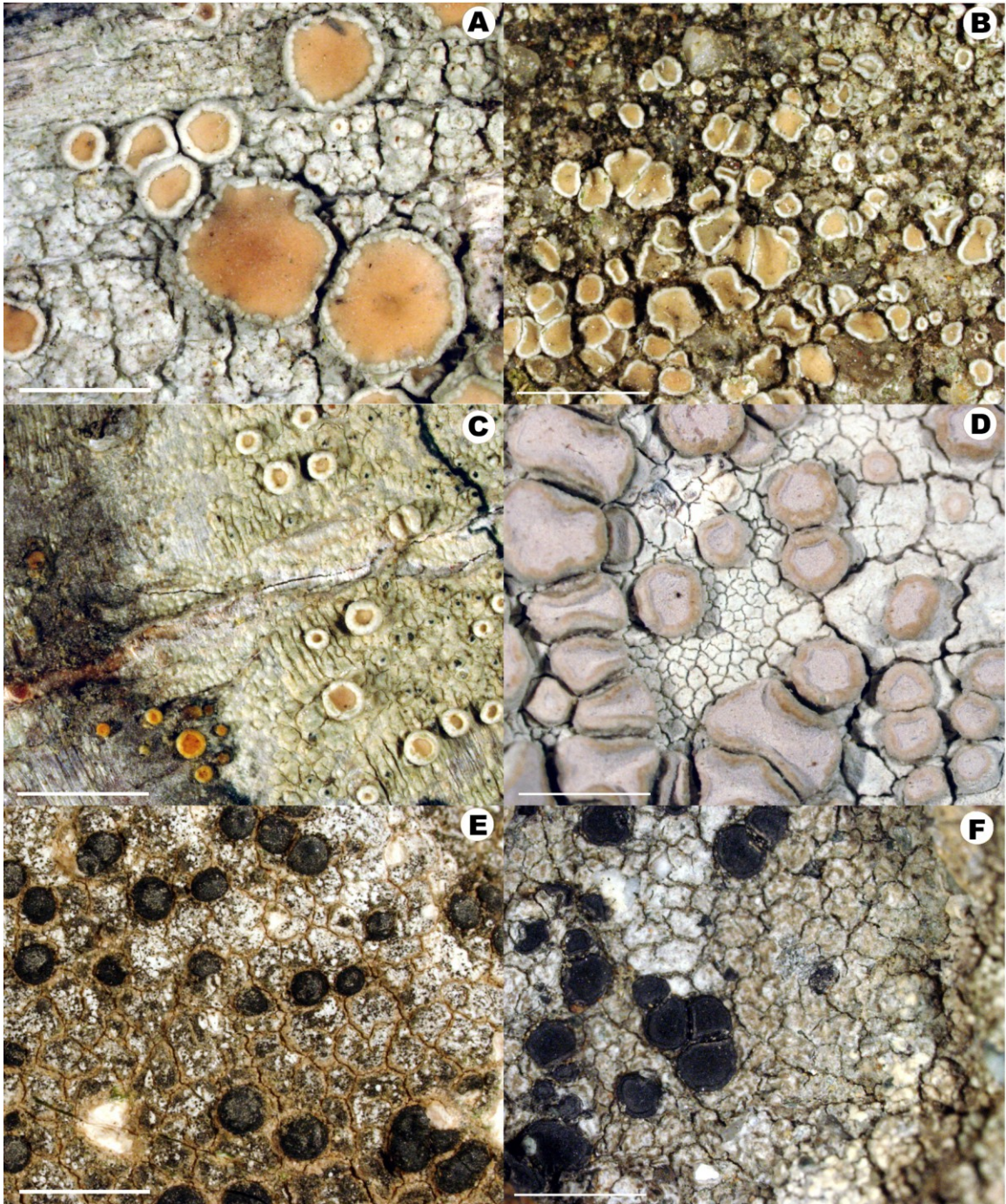


Plate 12, A, *Lecanora demosthenesii* (Knudsen 7717, UCR). B, *L. hagenii* (Knudsen 2350, UCR). C, *L. pacifica* (Underwood s.n., NY). D, *L. subcarnea* (Knudsen 7451.2, UCR). E, *Lecidea cruciara* (Knudsen 8542.1, UCR). F, *Lecidea fuscoatra* (Knudsen 8570, UCR). Scales = 1.0 mm in A-F.

Lecanora gangaleoides Nyl., Flora 55: 354 (1872). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: cosmopolitan. CIMP distribution: WA, SC, SR.

NOTES. – *Lecanora gangaleoides* is common in California in coastal areas, as well as in scattered locations in the mountains. It occurs on West Anacapa, Santa Cruz and Santa Rosa Islands in CIMP. *Lecanora californica* may be a synonym of *L. gangaleoides*, the difference in various published illustrations representing variations in the thalline margin.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine forest, on rock, *Knudsen 7460* (UCR).

Lecanora hagenii (Ach.) Ach., Lich. Univ.: 367 (1810). Description: Ryan et al. 2004a; Śliwa 2007. Substrate: usually on non-calcareous rocks, also on bark, wood, detritus. World distribution: cosmopolitan. CIMP distribution: SC, SM, SR.

PLATE 12, FIG. B.

NOTES. – *Lecanora hagenii* is one of the most common *Lecanora* species in California but is probably undercollected as it is easily overlooked. Not only does it occur on a wide range of substrates in diverse habitats, but it is also pollution tolerant. It is easily confused with *L. dispersa* which usually has a P+ orange apothecial margin and slightly different sized ascospores. As with older specimens identified as *L. dispersa*, the name was often misapplied to other taxa of the *L. dispersa* group by some lichenologists. The species is apparently frequent on San Miguel, Santa Cruz, and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on rock, *Knudsen 11963* (UCR).

Lecanora horiza (Ach.) Linds., Trans. Bot. Soc. Edinburgh 9: 96 (1869). Description: Ryan et al. 2004a. Substrate: bark, wood, detritus. World distribution: cosmopolitan. CIMP distribution: SB, SC, SM, SR, WA.

NOTES. – *Lecanora horiza* is common in Baja California but is infrequent in southern California and does not appear to occur in the northern part of the state. On the Channel Islands it can be confused with *Lecania fuscella* which differs in having 1-septate ascospores. It occurs on all of the north Channel Islands, on oaks, shrubs, and fences, but is infrequent.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on fence posts, *Nash 42084* (ASU; det. Lumbsch).

Lecanora laxa (Śliwa & Wetmore) Printzen, Bryologist 104: 395 (2001). Description: Ryan et al. 2004a. Substrate: bark. World distribution: Asia, North America. CIMP distribution: SC, SR.

NOTES. – *Lecanora laxa* is a common montane species in California. It is rare on the north Channel Islands, known from single collections from Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on burnt oak wood, *Knudsen 7553* (UCR).

Lecanora muralis (Schreber) Rabenh., Deutschl. Krypt.-Fl. 2: 42 (1845). Description: Ryan et al. 2004a. Substrate: non-calcareous and calcareous rock, including cement. World distribution: cosmopolitan. CIMP distribution: SC, SR, WA.

NOTES. – *Lecanora muralis* is probably the most common *Lecanora* in California. It has been pointed out that the oldest name for this taxon is *L. saxicola* (Pollich) Ach. but considering that widespread usage of *L. muralis* it is likely that a proposal for the conservation is imminent. The species occurs on West Anacapa, Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on rock, *Knudsen 10455.1* (UCR).

Lecanora pacifica Tuck., Syn. Lich. 1: 191 (1882). Description: Ryan et al. 2004a. Substrate: bark. World distribution: North America. CIMP distribution: SC, SM, SR, WA.

PLATE 12, FIG. C.

NOTES. – *Lecanora pacifica* is common in California along the coast. It occurs on West Anacapa, Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on *Artemisia californica*, *Ryan 31077* (ASU; det. Lumbsch).

Lecanora plumosa Mull. Arg., Flora 65: 484 (1882). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: cosmopolitan. CIMP distribution: SR.

NOTES. – *Lecanora plumosa* is a common species in Sonoran Mexico but is only known from California from the east end of Santa Rosa Island where it is rare.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, East Point, on rock, *Ryan 31191* (ASU, det. Lumbsch).

Lecanora subcarnea (Lilj.) Ach., Lich. Univ.: 365 (1810). Description: Ryan et al. 2004. Substrate: non-calcareous rock. World distribution: Asia, Europe, North America. CIMP distribution: SC, SR.

PLATE 12, FIG. D.

NOTES. – *Lecanora subcarnea* is known in California mainly from the Channel Islands where it can be locally abundant. It occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Islands, Torrey Pines grove, on rock, *Knudsen 7476.1* (UCR).

Lecanora subimmergens Vainio, Bot. Mag., Tokyo 35: 51 (1921). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: cosmopolitan. CIMP distribution: SR.

NOTES. – *Lecanora subimmergens* is common on sandstone outcrops in the Santa Ana and Santa Monica Mountains and infrequent along the California coast at least to San Mateo County. In CIMP it is known only from a single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on boulder, *Knudsen et al. 8772* (UCR).

Lecanora subrugosa Nyl., Flora 58: 15 (1875). Description: Ryan et al. 2004a. Substrate: bark. World distribution: Africa, Europe, North America. CIMP distribution: SC.

NOTES. – *Lecanora subrugosa* is relatively rare in California, being known from scattered locations both near the coast and in the mountains in the southern part of the state. In CIMP it is only known from a single collection from Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Prisoners Harbor, on *Quercus agrifolia*, *Ryan 31396* (ASU; det. Lumbsch).

Lecanora substrobilina Printzen, Bryologist 104: 404 (2001). Description: Ryan et al. 2004a. Substrate: bark. World distribution: North America. CIMP distribution: SC, SM, SR.

NOTES. – *Lecanora substrobilina* is frequent along the southern and central California coast and is locally abundant in the native Monterey Pine forest in Cambria. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, Santa Rosa Island, Black Mountain area, on *Pinus muricata*, *Wetmore 73921* (ASU, MIN; det. Printzen).

Lecanora verrucariicola B.D. Ryan in Ryan et al., Lichen Flora of the Greater Sonoran Desert Region 2: 280 (2004). Description: Ryan et al. 2004a. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SR.

NOTES. – *Lecanora verrucariicola* is known from only a few collections that were made along the coast from Baja California to San Luis Obispo County. It was usually found growing with or over *Verrucaria subdivisa*. There is no evidence as of yet that the species is a juvenile parasite on *V. subdivisa* and eventually develops an independent lichenized thallus. Nonetheless it is definitely competitive for space in saxicolous lichen communities. The taxon was described from Santa Catalina Island and in CINP is only known from a single collection made on Santa Rosa Island.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Wetmore 73880* (MIN; det. Ryan).

Lecanora zosterae (Ach.) Nyl., Flora 59: 577 (1876). Description: Śliwa 2007. Substrate: detritus, the eelgrass *Zostera* L., most often dry wood, including fences, railroad ties, etc. World distribution: cosmopolitan. CINP distribution: SM.

NOTES. – *Lecanora zosterae* is rare in California. It was collected once in Humboldt County on a the wood of a railroad bridge and is known from two collections made on San Miguel Island, one of which occurred on driftwood.

Selected voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: San Miguel Island, lower Willow Canyon, on wood, *Nash 41287* (ASU; det. Śliwa).

Lecidea cruciaria Tuck., Syn. N. Amer. Lich. 2: 67 (1888). Description: Hertel and Printzen 2004. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC, SR.

PLATE 12, FIG. E.

NOTES. – *Lecidea cruciaria* was described from the Santa Cruz Mountains in central California by E. Tuckerman. It is a poorly known species that is in need of revision. The thallus in illustration presented here is infected by a fungus. In CINP the species is known from single collections from Santa Cruz and Santa Rosa Islands.

Selected voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, east end, on sandstone, *Knudsen et al. 7413* (UCR).

Lecidea diducens Nyl., Flora 48: 148 (1865). Description: Hertel and Printzen 2004. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Lecidea diducens* is a montane species that is infrequent in California. This name has been commonly misapplied by California lichenologists to other members of the genus. Presently the species is only known in CINP from a single collection that was made on Santa Cruz Island.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Cruz Island, above Chinese Harbor, on rock, *Knudsen et al. 8521.1* (UCR).

Lecidea fuscoatra (L.) Ach., Lich. Meth.: 44 (1803). Description: Hertel and Printzen 2004. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SR.

PLATE 12, FIG. F.

NOTES. – *Lecidea fuscoatra* is the common throughout California in a wide variety of habitats. It is currently known in CINP from a single collections from Santa Cruz and Santa Rosa Islands.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on rock, *Knudsen 10618* (UCR).

Lecidea laboriosa Müll. Arg., *Flora* 57: 187 (1874). Description: Hertel and Printzen 2004. Substrate: non-calcareous rock. World distribution: Europe, North and South America. CINP distribution: SC, SM, SR.

PLATE 13, FIG. A.

NOTES. – *Lecidea laboriosa* is the most common endolithic *Lecidea* species in southern California, occurring from the coast to the mountains, and in the desert . It occasionally forms an ecorticate areolate thallus, especially when it occurs near the coast. In CINP it occurs on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Knudsen et al. 11425* (UCR).

Lecidella asema (Nyl.) Knoph & Hertel in Knoph, *Biblioth. Lichenol.* 36: 66 (1990). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rock, serpentine, soil, rarely wood. World distribution: Asia, Africa, Europe, North America. CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Lecidella asema* is the most common species of the genus in central and southern California along the coast, but is also frequent in the mountains of southern California. It is commonly found on soil in coastal biological soil crusts. The species is common on Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Beecher Bay, on rock, *Knudsen 8983* (UCR).

Lecidella carpathica Körber, *Parerga Lichen.*: 212 (1861). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rock, serpentine, rarely on wood or bark. World distribution: Asia, Europe, North and South America. CINP distribution: SC. SR.

NOTES. – *Lecidella carpathica* is frequent in California and like *L. asema* occurs in variety of habitats. It is infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, near Sierra Pablo Road, on rock, *Knudsen 8832* (UCR).

Lecidella elaeochroma (Ach.) M. Choisy, *Bull. Soc. Linn. Lyon* 19: 19 (1950). Description: Knoph and Leuckert 2004. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

NOTES. – *Lecidella elaeochroma* is frequent in California. It is rare in CINP where it occurs on San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on bark, *Ryan 31282.d* (ASU; det. Knoph & Winkler).

Lecidella granulosa (Nyl.) Knoph & Leuckert, *Herzogia* 14: 9 (2000). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rock, rarely bark or wood. World distribution: Asia, Europe, North America. CINP distribution: SR.

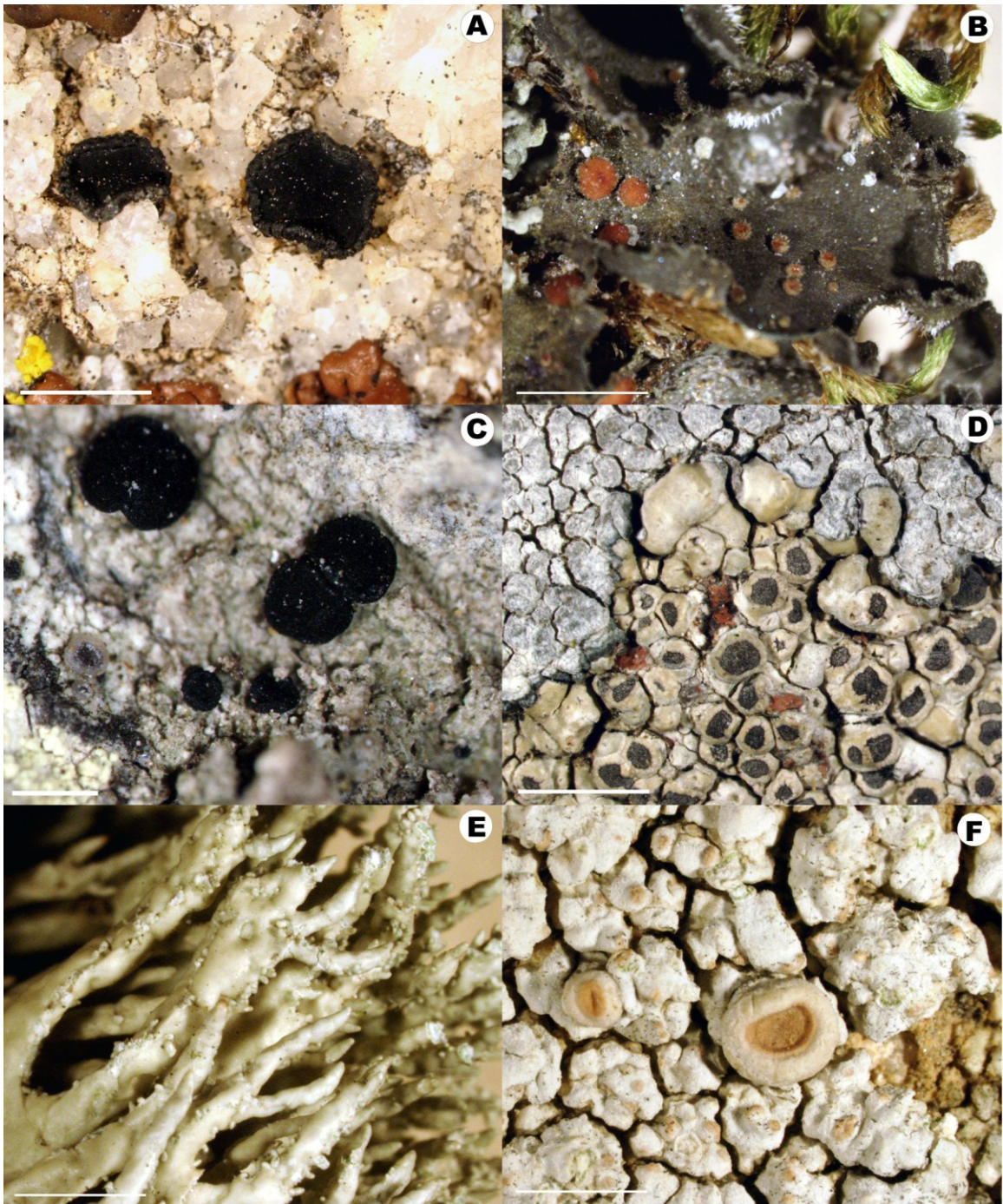


Plate 13, A, *Lecidea laboriosa* (Knudsen 11410, UCR). B, *Leptochidium albociliatum* (Knudsen 794, UCR). C, *Megalaria columbiana* (Knudsen 7563.2, UCR). D, *Mobergia angelica* (Lendemer 11472, NY). E, *Niebla isidiaescens* (Hollinger 4252, UCR). F, *Ochrolechia subpallenscens* (Knudsen 11426, UCR). Scales = 1.0 mm in A, B, D-F; 0.5 mm in C.

NOTES. – *Lecidella granulosa* is only known from California on the basis of two collections made on bark or wood on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on fence, *Nash 32995* (ASU; det. Knoph).

Lecidella meiococca (Nyl.) Leuckert & Hertel in Leuckert et al., *Intrn. Abs.* 33/20: 33 (1990). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rock, rarely wood. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Lecidella meiococca* is a leprose crust which has not been collected in a fertile state in California. It occurs along the California coast and in CINP occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on fence, *Nash 32995* (ASU; det. Knoph).

Lecidella scabra (Taylor) Hertel, *Willdenowia* 5: 375 (1969). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rocks. World distribution: Europe, North America.

NOTES. – *Lecidella scabra* is rare on the California coast. It occurs on West Anacapa and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Outhouse Canyon, on consolidated soil, *Knudsen 7638* (UCR).

Lecidella stigmata (Ach.) Hertel & Leuckert, *Willdenowia* 5: 375 (1969). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rock, serpentine. World distribution: cosmopolitan. CINP distribution: WA.

NOTES. – *Lecidella stigmata* is common in California in a variety of habitats. The specimen cited here was originally misidentified and reported as *L. viridans* (Flot.) Körb (see Excluded Species below). It is currently only known from West Anacapa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on basalt, *Nash 32359* (ASU; det. Knudsen).

Lempholemma chalazanum (Ach.) B. de Lesd., *Recherch. Lich.* Dunkerque: 261 (1910). Description: Schultz 2004. Substrate: soil and overgrowing mosses. World distribution: Asia, Europe, India, North America. CINP distribution: WA.

NOTES. – The cyanolichen *Lempholemma chalazanum* is rare in southern California. In coastal habitats in the Santa Monica Mountains it once formed extensive soil crusts but these appear to have been extirpated. It is known from CINP from a single collection of a small fertile population that occurs on West Anacapa Island.

Voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on soil, *Knudsen 10876* (UCR).

Lepraria lobificans Nyl., *Flora* 56: 196 (1873). Description: Tønsberg 2004b. Substrate: soil, over bryophytes, on bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Lepraria lobificans* is common in California, particularly in central California from Monterey to at least Sonoma Counties. It is also common on Santa Rosa Island and is known from Santa Cruz Island from a single specimen from the Christi Pines area.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on soil, *Knudsen 7660 & Baguskus* (UCR; det. Lendemer).

Lepraria neglecta (Nyl.) Erichsen, Flechtenfl. Nordwestdeustchl. 394. 1957. Description: Tønsberg 2002b. Substrate: bark, soil, non-calcareous rock, overgrowing bryophytes. World distribution: Asia, Europe, North America. CINP distribution: SR.

NOTES. – This species is common in California but is surprisingly rare in CINP. In Tønsberg (2002b) and Knudsen and Elix (2007) the chemotypes of this species were referred to as *Lepraria alpina* (B. de Lesd.) Tretiach & Baruffo, *L. borealis* Loht. & Tønsberg, and *L. caesioalba* (B. de Lesd.) J.R. Laundon. The latter was the most commonly used name in recent English language literature. The taxon has a wide variety of chemotypes, which has led to a variety of names based solely on exolites. In CINP it is known from a single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, side of Black Mountain, small patch on *Quercus pacifica*, *Knudsen et al. 7684* (UCR; det. Lendemer).

Lepraria xerophila Tønsberg, Lichen Flora of the Greater Sonoran Desert Region, 2: 328 (2004). Description: Tønsberg 2004b. Substrate: soil. World distribution: Europe, North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Lepraria xerophila* is a distinctive crustose to squamulose species that is common along the coast of California as far north as Point Reyes in Marin County where it is rare. J. Elix and the first author studied the two chemotypes, one common (pannaric acid 6-methyl ester) and one only known from the Channel Islands (norascomatic acid, strepsilin) (Tønsberg 2004a). Both chemotypes occur on Santa Rosa Island. The chemotypes occurred in discreet populations but with no real geographic separation. In one case both occurred within ca. 100 meters of each other near Black Mountain. There were no morphological or ecological differences between the chemotypes. This is a common species on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, between Dry Canyon and Verde Canyon, on soil, *Knudsen et al. 10526* (UCR).

Leprocaulon americanum Lendemer & Hodkinson ined., Description: McCune and Geiser 2009 (as *L. microscopium*). Substrate: soil, rarely rock or wood. World distribution: North and South America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Leprocaulon americanum* has been known previously as *L. microscopium* (Vill.) Gams ex D. Hawk. It is infrequent along the coast from Baja California to Oregon, but often locally abundant, sometimes in biological soil crusts (Hernandez and Knudsen 2012). In early development it forms a leprose crust. It is frequent on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine forest, *Knudsen 7432* (NY, UCR).

Leprocaulon knudsenii Lendemer & Hodkinson, ined. Description: Lendemer and Hodkinson in rev. Substrate: non-calcareous rock. World distribution: North America (California endemic). CINP distribution: SC.

NOTES. – The leprose species *Leprocaulon knudsenii* is a California endemic occurring in the mountains of southern and central California. In CINP it is only known from a single collection on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, canyon from Prisoners Harbor to Stanton Ranch, on boulder, *Knudsen 8582* (NY).

Leprocaulon santamonicae (K. Knudsen & Elix) Lendemer & Hodkinson, ined. Description: Knudsen and Elix 2007. Substrate: soil, rock. World distribution: North America (California endemic). CINP distribution: SR.

NOTES. – The leprose species *Leprocaulon santamonicae* is a California endemic that was originally described from the Santa Monica Mountains. It forms biological soil crusts, especially on eroding vertical soil surfaces. It is known from southern California north to at least Yosemite in the Sierra Nevada Mountains. It is rare on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine forest, on breccia, *Knudsen 7441.1* (UCR; det. Elix).

Leprocaulon terricola (Lendemer) Lendemer & Hodkinson, ined. Description: Lendemer 2010. Substrate: soil. World distribution: North America (California endemic). CINP distribution: SC, SR.

NOTES. – The leprose species *Leprocaulon terricola* is a rare California endemic occurring in coastal biological soil crusts. It was originally described from Santa Rosa Island, where it is known from the type collection, and occurs in the High Mountains on east Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, upper Cherry Canyon, *Knudsen 10606* (NY, UCR; det. Lendemer).

Leptochidium albociliatum (Desm.) M. Choisy, Bull. Mens. Soc. Lyon 21: 165 (1952). Description: McCune and Geiser 2009. Substrate: soil and rocks. World distribution: Europe, North America. CINP distribution: SC.

PLATE 13, FIG. B.

NOTES. – *Leptochidium albociliatum* is frequent throughout California in wide variety of habitats. In southern California it is often locally abundant, or the only cyanolichen in an area. It is rare on the north Channel Islands where it is known from a single population on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Cañada del Puerto, *Ryan 31602* (ASU; det. Jørgensen)

Leptogium californicum Tuck., Syn. N. Amer. Lich. 1: 159 (1882). Description: Jørgensen and Nash 2004. Substrate: usually on rocks or mosses, sometimes on soil or at the bases of trees. World distribution: North America. CINP distribution: SC.

NOTES. – *Leptogium californicum* is frequent in coastal California as well as in the Sierra Nevada Mountains. There is some taxonomic confusion about this species, with authors unsure if it is a form of *L. gelatinosum* (With.) J.R. Laundon (Jørgensen & Nash 2004) or possibly is indistinct from *L. lichenoides* (L.) Zahlbr. (McCune and Geiser 2009). It is apparently rare on the north Channel Islands where it is known only from Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Cañada del Puerto, *Nash 32443* (ASU).

Lichinella robustoides Henssen, Budel & Nash, Bryologist 88: 290 (1985). Description: Schultz 2007a. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Lichinella robustoides* is rare in California. It is known from single populations on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, headland W of Coches Prietos, on rock, *Bratt 6263A* (ASU; det. Schultz).

Lichinella stipatula Nyl., Bull. Soc. Linn. Normandie, ser. 2, 6: 301 (1873). Description: Schultz 2007b. Substrate: non-calcareous rock. World distribution: Asia, Africa, Europe, North America. CINP distribution: SC.

NOTES. – *Lichinella stipatula* is frequent throughout California. In CINP it is known from several collections on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, *Tucker 35740* (SBBG; det. Schultz).

****Lichenocodium erodens*** M.S. Christ. & D. Hawksw. in Hawksworth, Persoonia 9: 174 (1977). Description: Diederich 2004a. Substrate: lichens. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – This common anamorphic fungus is parasitic on a wide variety of hosts and is common in California. It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Hypogymnia mollis*, *Kocourková & Knudsen s.n.* (PRM 909127).

****Lichenocodium lecanorae*** (Jaap) D. Hawksw., Bull. Br. Mus. Nat. Hist. (Bot.) 6: 270 (1979). Description: Diederich 2004a. Substrate: lichens. World distribution: Asia, Europe, North and South America. CINP distribution: SR.

NOTES. – *Lichenocodium lecanorae* is usually found on the apothecia of *Lecanora* and *Parmelia* species, and is frequent in California (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Niebla homalea*, *Kocourková & Knudsen s.n.* (PRM 909707).

****Lichenocodium lichenicola*** (P. Karst.) Petr. & Sydow, Die Gattungen der Pyrenomyzeten Sphaeropsideen und Melanconieen. 1. Die phaeosporen Sphaeropsideen und die Gattung Macrophoma: 432 (1927). Description: Cole and Hawksworth 2004. Substrate: *Physcia* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Lichenocodium lichenicola* was collected in California on *Physcia* species (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Physcia* species, *Kocourková & Knudsen s.n.* (PRM 909120).

****Lichenodiplis lecanorae*** (Vouaux) Dyko & D. Hawksw. in Hawksworth & Dyko, Lichenologist 11: 52 (1979). Description: Diederich 2004b. Substrate: *Caloplaca* and *Lecanora* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Lichenodiplis lecanorae* occurs mostly on the apothecia of *Caloplaca* and *Lecanora* species and is probably frequent in California (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Lecanora caesiorubella*, *Kocourková & Knudsen s.n.* (PRM 914996).

****Lichenodiplis lecanoricola*** (M.S. Cole & D. Hawksw.) Diederich, Herzogia 16: 61 (2003). Description: Diederich 2004b. Substrate: *Caloplaca* and *Lecanora* species. World distribution: North America. CINP distribution: SR.

NOTES. – *Lichenodiplis lecanorae* mostly occurs on the apothecia of *Lecanora* species on bark and is probably frequent in California (Kocourková et al. 2012). It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Lecanora caesiorubella*, Kocourková & Knudsen s.n. (PRM 914996).

****Lichenostigma amplum*** Calat. & Hafellner, Lichen Flora of the Great Sonoran Desert Region 2: 665 (2004). Description: Calatayud et al. 2004. Substrate: *Buellia* species. World distribution: North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Lichenostigma amplum* occurs on *Buellia* species and is probably frequent along the southern and central California coast. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Buellia sequax*, Knudsen 7606.2 (UCR)

****Lichenostigma bolacinae*** Nav.-Ros., Calat. & Hafellner, Lichen Flora of the Great Sonoran Desert Region 2: 665 (2004). Description: Calatayud et al. 2004. Substrate: *Caloplaca bolacina*. World distribution: North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Lichenostigma bolacinae* is probably frequent along the southern California coast. It is frequent on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, above Water Canyon, on *C. bolacina*, Kocourková & Knudsen s.n. (PRM 909668, UCR)

****Lichenostigma cosmopolites*** Hafellner & Calat., Mycotaxon 72: 108 (1999). Description: Calatayud et al. 2004. Substrate: *Xanthoparmelia* species. World distribution: cosmopolitan CINP distribution: SC, SR.

NOTES. – *Lichenostigma cosmopolites* is common on *Xanthoparmelia* species in California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Xanthoparmelia* species, Knudsen 10598.1 (UCR).

****Lichenostigma radicans*** Calatayud & Barreno, Lichenologist 35: 279 (2003). Description: Calatayud and Barreno 2003. Substrate: *Aspicilia* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – *Lichenostigma radicans* occurs on *Aspicilia* species and is known from North America on the basis of a single collection from Santa Rosa Island. That voucher requires further study.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: on *Aspicilia pacifica*, Knudsen et al. 8778.2 (PRM 909683, UCR).

****Lichenostigma rugosum*** Thor, Lichenologist 17: 269 (1985). Description: Calatayud et al. 2004. Substrate: *Diploschistes* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Lichenostigma rugosum* is probably frequent in California. It is infrequent on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on *Diploschistes diacapsis*, Knudsen 11412 & Chaney (UCR).

**Lichenostigma subadians* Hafellner, Calat. & Nav.-Ros., Mycol. Res. 106: 1239 (2002). Description: Calatayud et al. 2004. Substrate: *Diploschistes* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Lichenostigma subadians* is common in California, especially on the yellow species *Acarospora socialis*. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine grove, on *Acarospora socialis*, Knudsen 7464 (UCR).

**Marchandiomyces corallinus* (Roberge) Diederich & D. Hawksw. in Diederich, Mycotaxon 37: 312 (1990). Description: Diederich 1990. Substrate: lichens. World distribution: Asia, Europe, North and South America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Marchandiomyces corallinus* occurs on many different hosts but appears to be rare in southern California. It is expected to occur in northern California and is currently known in California from a single collection from Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Burma Road, on *Teloschistes chrysophthalmus*, Kocourková & Knudsen s.n. (PRM 909661, UCR).

Maronea polyphaea H. Magn., Acti Horti Gothob. 9: 59 (1934). Description: Harris 2006. Substrate: bark. World distribution: North America. CINP distribution: SC.

NOTES. – *Maronea polyphaea* is rare in California. The H.E. Hasse collections from Santa Monica Mountains lacked exolites (LaGreca 2006). Harris (2006) considered the Hasse specimens to potentially represent a taxon new to science and should be further studied. Two specimens from Santa Cruz Island were not apparently tested for exolites. It is not known if they are conspecific with the collections from the Santa Monica Mountains. The species is rare on Santa Cruz Island and known from a single population.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon Road, on bark, Bratt 3110 (SBBG; det. Nash).

Megalaria columbiana (G. Merr.) Ekman in Ekman et al., Bryologist 99: 39 (1999). Description Ekman and Tønsberg 1999. Substrate: bark. World distribution: North America. CINP distribution: SR.

PLATE 13, FIG. C.

NOTES. – *Megalaria columbiana* occurs on the central California coast, especially in Marin County. In CINP it is known from a single collection from Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, Knudsen 7563.3 (UCR; det. Lendemer).

Micarea denigrata (Fr.) Hedl., Bih. K. Svenska Vet-Akad. Handl. ser. 3, 18: 78. (1892). Description Czarnota 2007; Fryday and Coppins 2007. Substrate: bark, rock. World distribution: Asia, Europe, North America. CINP distribution: SC, SR, EA.

NOTES. – *Micarea denigrata* is infrequent in southern California. It is also infrequent in CINP where it occurs on East Anacapa, Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on branches of *Rhus integrifolia*, Knudsen 10904 (UCR).

Micarea nitschkeana (J. Lahm ex Rabenh.) Harm., Bull. Soc. Sci. Nancy, ser. 2, 33: 64 (1899). Description Czarnota 2007; Fryday and Coppins 2007. Substrate: bark, wood. World distribution: Europe, North America. CINP distribution: SM.

NOTES. – *Micarea nitschkeana* is infrequent along the central coast of California. It is known from a single collection from San Miguel Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on wood log, Tønsberg 25364 (ASU; det. Fryday).

Mobergia angelica (Stizenb. ex Hasse) H. Mayrhofer & Sheard, Bryologist 95: 439 (1992). Description Mayrhofer and Sheard 2004b. Substrate: calcareous and non-calcareous rock, rarely soil. World distribution: Europe, America. CINP distribution: SB, SC, SM, SR, WA.

PLATE 13, FIG. D.

NOTES. – *Mobergia angelica* is common along the central and southern California coast. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: San Miguel Island, Green Mountain, on rock, Knudsen 6781 (UCR).

Moelleropsis nebulosa (Hoffm.) (Hoffman) Gyelnik in Rabenh., Krypt. Flora 9, 2: 257 (1940). Description: Jørgensen 2002b. Substrate: soil. World distribution: Africa, northern hemisphere. CINP distribution: SC.

NOTES. – *Moelleropsis nebulosa* is a leprose cyanolichen that is apparently rare in California. It is known from a single collection from Santa Cruz Island

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Weber & Bratt s.n. (ASU).

****Muellerella lichenicola*** (Sommerf.) D. Hawksw., Bot. Not. 132: 289 (1979). Description: Triebel and Kainz 2004. Substrate: variety of lichens. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Muellerella lichenicola* is probably frequent along the central coast. It occurs on *Lecanora* species on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Lecanora* species, Nash 32710 (ASU; det. Triebel).

†***Mycocalicium subtile*** (Persoon) Szatala, Magyar Bot. Lapok 24: 47 (1926). Description: Tibell 2007. Substrate: saprobic on dry wood. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – The non-lichenized fungus *Mycocalicium subtile* is common in California in a wide variety of habitats. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on dry wood of *Quercus pacifica*, Knudsen et al. 7688 (UCR).

†***Mycocalicium victoriae*** (C. Knight ex F. Wilson) Nádv., Ann. Mycol. 40: 138 (1942). Description: Tibell 2007. Substrate: saprobic on dry wood. World distribution: Australia, Europe, North America. CINP distribution: SC.

NOTES. – The non-lichenized fungus *Mycocalicium victoriae* is known in California only from Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Cruz Island, south of Prisoners Harbor, on *Quercus agrifolia*, Nash 32497 (ASU; det. Tibell).

Myriospora hassei (Herre) K. Knudsen & L. Arcadia, *Opuscula Philolichenum* 11: 21 (2012). Description: Knudsen 2011 (as *Silobia hassei*). Substrate: non-calcareous rock. World distribution: Europe, North America. CINP distribution: SR.

PLATE 20, FIG. F.

NOTES. – *Myriospora hassei* is infrequent along the California coast from Point Reyes to San Diego. It occurs on Santa Rosa Island in CINP.

Selected voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, Burma Road, on sandstone, *Knudsen 8713.2 & Kocourková* (UCR).

Myriospora scabrida (Hedl. ex H. Magn.) K. Knudsen & L. Arcadia, *Opuscula Philolichenum* 11: 22 (2012). Description: Knudsen 2007a; Westberg et al. 2011 (as *Silobia scabrida*). Substrate: non-calcareous rock, rarely soil. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – *Myriospora scabrida* appears to be infrequent but widespread in California in a variety of habitats. It is rare on Santa Cruz Island in CINP.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on rock, *Knudsen 11875* (UCR).

†*Naetrocymbe punctiformis* (Pers.) R.C. Harris, *More Florida Lichens*: 63 (1995). Description: Aptroot 2002 (as *Arthopyrenia punctiformis*). Substrate: bark. World distribution: cosmopolitan. CINP distribution: WA.

NOTES. – The non-lichenized fungus *Naetrocymbe punctiformis* is infrequent in California. It occurs on West Anacapa Island in CINP. The rare lichenized species *N. herrei* K. Knudsen & Lendemer (Knudsen and Lendemer 2009) occurs on sea cliffs in San Simeon and San Francisco and may occur in CINP.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: West Anacapa Island, on *Rhus integrifolia*, *Knudsen 10892* (UCR).

Nephroma parile (Ach.) Ach., *Lich. Univ.*: 522 (1810). Description: Wetmore and Nash 2002. Substrate: usually on non-calcareous rock. World distribution: Asia, Europe, North and South America. CINP distribution: SR.

NOTES. – The sorediate species *Nephroma parile* is rare in northern California. It is only known in southern California from a single collection that was made on Santa Rosa Island.

Voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, Soledad Grove, on *Quercus tomentella*, *Kocourková & Knudsen s.n.* (UCR).

Niebla cephalota (Tuck.) Rundel & Bowler, *Mycotaxon* 6: 498 (1978). Description: Bowler and Marsh 2004. Substrate: bark, rarely rock. World distribution: North and South America. CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Niebla cephalota* and *N. ceruchis* are the common *Niebla* species on bark in CINP and can both easily be recognized by sight. They also often grow together. *Niebla cephalota* is the only sorediate species in the genus. It is common along the California coast from the Santa Monica Mountains north. It is common on all of the Channel Islands.

Selected voucher. – U.S.A. CALIFORNIA. SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on rock, *Knudsen et al. 10530* (UCR).

Niebla ceruchis (Ach.) Rundel & Bowler, Mycotaxon 6: 498 (1978). Description: Bowler and Marsh 2004. Substrate: bark, rarely rock. World distribution: North and South America. CIMP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Niebla ceruchis* is frequent in California from San Diego north to Monterey County. On the Channel Islands it is especially common on *Baccharis*. On San Miguel Island it is used for nesting material by Allen's Hummingbirds in Willow Canyon. It is known from all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Dry Canyon, on *Baccharis*, *Knudsen et al. 10534* (UCR).

Niebla ceruchoides Rundel & Bowler, Phytologia 77: 26 (1994). Description: Bowler and Marsh 2004. Substrate: rock, rarely soil. World distribution: North America. CIMP distribution: SB, SC, SM, SR, WA.

NOTES. – *Niebla ceruchoides* is infrequent in California from San Luis Obispo County south, but locally abundant. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on rock, *Bratt 4813* (SBBG).

Niebla combeoides (Nyl.) Rundel & Bowler, Mycotaxon 6: 499 (1978). Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CIMP distribution: SB, SC, SM, SR, WA.

NOTES. – *Niebla combeoides* is rare along the California coast as far north as Marin County. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, *Marsh 6835* (ASU).

Niebla homalea (Ach.) Rundel & Bowler, Mycotaxon 6: 499 (1978). Description: Bowler and Marsh 2004. Substrate: bark, rock, soil. World distribution: North America. CIMP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Niebla homalea* is the most common species of the genus in coastal California, but it is quite variable in form. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Sierra Blanca ridge, on rock, *Marsh 5818* (ASU).

Niebla isidiaescens Bowler, Marsh, Nash & Riefner, Phytologia 77: 29 (1994). Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CIMP distribution: EA, SB, SC, WA.

PLATE 13, FIG. E.

NOTES. – *Niebla isidiaescens* is a rare species along the California coast, known from Conejo Mountain in the Santa Monica Mountains and Morro Bay. It is rare on the north Channel Islands, known from Anacapa, Santa Barbara, and Santa Cruz Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on volcanic rock, *Knudsen 10741* (UCR).

Niebla laevigata Bowler & Rundel, Phytologia 77: 31 (1994). Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CIMP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Niebla laevigata* occurs from central California to Baja California. It occurs on all of the Channel Islands and is especially common on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on rock, Knudsen 10739 (UCR).

Niebla polymorpha Bowler, J.E. Marsh, T.H. Nash, & Riefner, *Phytologia* 77: 33 (1994). Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CINP distribution: EA, SC.

NOTES. – *Niebla polymorpha* is more frequent along the coast of Baja California in Mexico than the coast of California. In California, it is only known from the Channel Islands and Morro Bay in San Luis Obispo County. It is infrequent on East Anacapa and Santa Cruz Islands, but may be frequent on steep inaccessible sea cliffs on all the islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on rock, Knudsen 5328 (UCR).

Niebla procera Rundel & Bowler, *Phytologia* 77: 34 (1994). Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CINP distribution: SB, SC, SM, SR.

NOTES. – *Niebla procera* is endemic to the coast of Mexico and California. It occurs on San Miguel, Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP. It probably also occurs on the cliffs of Anacapa Island but has not yet been found there.

Selected voucher. – **U.S.A. CALIFORNIA.** : SANTA BARBARA CO.: San Miguel Island, on rock, Marsh 7895 (ASU).

Niebla robusta (R.H. Howe) Rundel & Bowler, *Mycotaxon* 6: 499 (1978) Description: Bowler and Marsh 2004. Substrate: rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA

NOTES. – *Niebla robusta* is endemic to the coast of Baja California and California. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, above Fraser Point, Marsh 7048 (ASU).

Normandina pulchella (Borrer) Nyl., *Ann. Sci. Nat. Bot.*, sér. 4, 15: 382 (1861). Description: Tønsberg 2004c. Substrate: bark, rock, other lichens, moss. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Normandina pulchella* is infrequent in California but is probably undercollected and can occur in a variety of habitats. It is known from Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end of Central Valley, Robertson 1469 (SBBG).

Ochrolechia africana Vain., *Ann. Univ. Fenn. Aboënsis Ser. A2*: 3 (1926). Description: Roemer et al. 2004. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Ochrolechia africana* is part of the subtropical element in the California lichen biota. It occurs along the coast of California where it is infrequent. In CINP it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, Nash 32946b (ASU).

Ochrolechia arborea (Kreyer) Almb., Bot. Not. 254 (1952). Description: Roemer et al. 2004; Kukwa 2011; Brodo and Lendemer 2012. Substrate: bark. World distribution: Europe, North America. CIMP distribution: SC.

NOTES. – *Ochrolechia arborea* is infrequent in California on the southern and central coast. It is known from Santa Cruz Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end of Central Valley, on pine, Bratt 3496 (SBBG; det. Tønsberg.)

Ochrolechia mexicana Vainio, Dansk Bot. Ark. 4: 9 (1926). Description: Roemer et al. 2004. Substrate: bark. World distribution: Central, North and South America. CIMP distribution: SC.

NOTES. – *Ochrolechia mexicana* is rare in California, and is known only from the central coast. In CIMP it is rare on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, along ridge to Ragged Mountain, on *Heteromeles arbutifolia*, Nash 32310 (ASU).

Ochrolechia subpallescens Versegny, Beih. Nova Hedwigia 1: 118 (1962). Description: Rohmer et al. 2004. Substrate: bark, rarely rocks. World distribution: Asia, Australia, North and South America. CIMP distribution: SR.

PLATE 13, FIG. F.

NOTES. – *Ochrolechia subpallescens* is the most common species of the genus in California and usually occurs on oaks. In CIMP it occurs on Santa Rosa Island on chaparral and on rock (see *O. aff. parella* (L.) A. Massal under “Excluded Species” below).

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, Knudsen 11426 & Chaney (UCR; verif. Kukwa).

Opegrapha anomea Nyl., Act. Soc. Linn. Bordeaux 21: 399 (1857). Description: Ertz and Egea 2007. Substrate: *Pertusaria* species. World distribution: Africa, Europe, North and South America. CIMP distribution: SC, SR.

NOTES. – *Opegrapha anomea* is lichenicolous on *Pertusaria amara* in California. It occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on *Pertusaria amara*, Nash 32588 (ASU; det. Ertz).

Opegrapha herbarum Mont., Guillem. Arch. Bot. 2: 302 (1833). Description: Ertz and Egea 2007. Substrate: conifer needles, bark, consolidated soil, rock. World distribution: cosmopolitan. CIMP distribution: EA, SB, SC, SM, SR, WA.

PLATE 14, FIG. A.

NOTES. – *Opegrapha herbarum* is the most common species of the genus in California, especially along coast from Santa Barbara County north. It is even foliicolous on the needles *Picea sitchensis* (Bong.) Carr along the northern California and Oregon coast (Villella & Carlberg 2011). The taxon occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Outhouse Canyon, on consolidated soil, Knudsen 7637 (UCR)

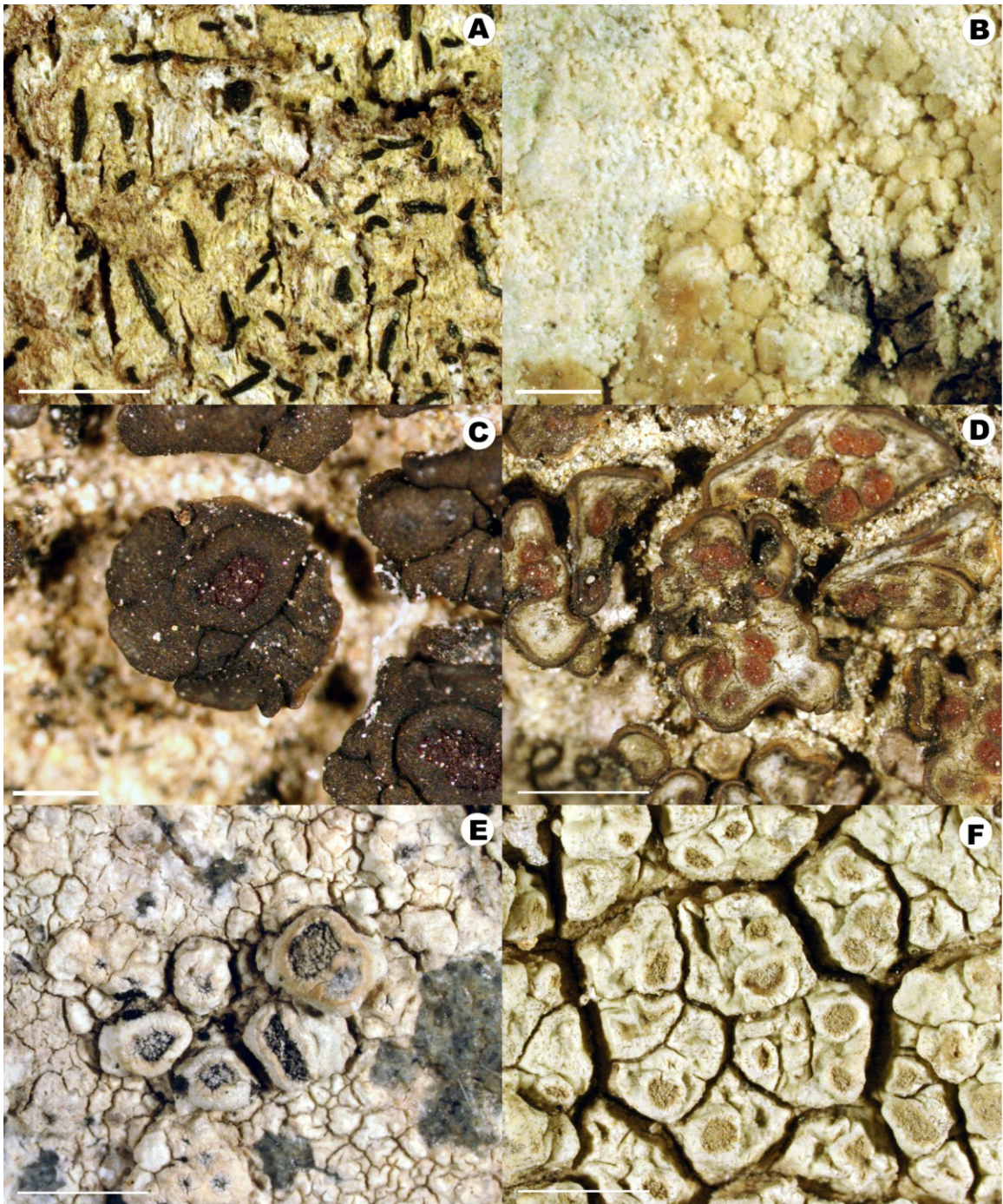


Plate 14, A, *Opegrapha herbarum* (Knudsen 10250, UCR). B, *Paraschismatomma ochroleucum* (Knudsen 10033, UCR). C, *Peltula obscurans* var. *hassei* (Knudsen 11180, UCR). D, *Peltula patellata* (Knudsen 11176, UCR). E, *Pertusaria brattiae* (Knudsen 9639, UCR). F, *Pertusaria flavicunda* (Knudsen 10632, UCR). Scales = 1.0 mm in A, D-F; 0.5 mm in B, C.

Opegrapha niveoatra (Borrer) J.R. Laundon, Lichenologist 2: 138 (1963). Description: Ertz and Egea 2007. Substrate: bark. World distribution: Asia, Africa, Europe, North America. CINP distribution: SC.

NOTES. – *Opegrapha niveoatra* definitely prefers humid habitats and has been most frequently collected in Monterey and Santa Cruz Counties in California, where it is rare. In CINP it is known from a single collection made on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Cruz Island, Christy Ranch, on Monterey cypress, *Tucker 35745* (SBBG; det. Ertz).

Opegrapha vulgata (Ach.) Ach., Meth. Lich.: 20 (1803). Description: Ertz and Egea 2007. Substrate: bark. World distribution: Africa, Australia, Europe, North America. CINP distribution: SC, SR.

NOTES. – *Opegrapha vulgata* is common from the Channel Islands north along the central coast of California. Here we cite the authority of this name as (Ach.) Ach. following a conservation proposal for *Lichen vulgatus* Ach. (Arcadia and Ertz 2012). The species occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Rosa Island, below Black Mountain, on *Quercus agrifolia*, *Nash 32610* (ASU; det. Ertz).

Paraschismatomma ochroleucum (Zahlbr.) K. Knudsen, Ertz & Tehler in Ertz & Tehler, Fungal Diversity 49: 57 (2011) Description: Tehler 2002c (as “*Schismatomma pluriloculare*”). Substrate: bark and wood. World distribution: North America. CINP distribution: SB (historical).

PLATE 14, FIG. B.

NOTES. – *Paraschismatomma ochroleucum* occurs along the central coast of California. It once occurred on Santa Barbara Island based on a B. Trask collection from 1902, but it now appears to be extirpated. The species is often sterile. We expect to occur at least on Santa Cruz Island, although it has not yet been found there. Interestingly this is currently the only documented example we have from CINP of an extirpated lichen species.

Voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Barbara Island, 1902, *Trask s.n.* (FH).

Parmelia sulcata Taylor, Fl. Hibern. 2: 145 (1836). Description: McCune and Geiser 2009. Substrate: bark, occasionally rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Parmelia sulcata* is common in California, including the coastal ranges of southern California. But many specimens are proving to actually be referable to *P. barrenoae* Divakar, M.C. Molina & A. Crespo (Hodkinson et al. 2010). Specimens from the islands need to be revised in light of this discovery. *Parmelia sulcata* occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Rosa Island, along road to East Point, on *Quercus pacifica*, *Nash 32857* (ASU).

Parmotrema arnoldii (Du Rietz) Hale, Phytologia 28: 335 (1974). Description: Nash and Elix 2002a. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Parmotrema arnoldii* is common in California only on the Channel Islands. It is frequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Cruz Island, west end of Central Valley, on *Pinus muricata*, *Nash 32292-A* (ASU).

Parmotrema hypoleucinum (J. Steiner) Hale, Phytologia 28: 336 (1974). Description: Nash and Elix 2002a. Substrate: bark, occasionally on rocks. World distribution: cosmopolitan. CINP distribution: SC, SM, SR, WA.

NOTES. – *Parmotrema hypoleucinum* is frequent along the southern and central coast of California. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on *Pinus muricata*, Knudsen et al. 7560.2 (UCR).

Parmotrema perlatum (Hudson) M. Choisy, Bull. Mens. Soc. Linn. Lyon 21: 174 (1952). Description: Nash and Elix 2002a (as *P. chinense*). Substrate: bark, occasionally on rocks. World distribution: cosmopolitan. CINP distribution: SC, SM, SR, WA.

NOTES. – *Parmotrema perlatum* (syn. *P. chinense* (Osbeck) Hale & Ahti) is common in California, especially on oaks. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Burma Road above Arlington Canyon, on soil and rock, Knudsen et al. 7782.1 (UCR).

Parmotrema reticulatum (Taylor) M. Choisy, Bull. Mens. Soc. Linn. Lyon 21: 175 (1952). Description: Nash and Elix 2002b (as *Rimelia reticulata*). Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Parmotrema reticulatum* is part of the tropical element of the California lichen biota and occurs on the central coast of California. It is infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, Nash 32944 (ASU).

Parmotrema stuppeum (Taylor) Hale, Phytologia 28: 339 (1974). Description: Nash and Elix 2002a. Substrate: bark, occasionally on rocks. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Parmotrema stuppeum* is common, especially along the central coast of California. It is frequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Quercus pacifica*, Knudsen et al. 8782 (UCR).

Peltigera collina (Ach.) Schrader, J. Bot. 3: 78 (1801). Description: McCune and Geiser 2009. Substrate: among mosses over bark. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – The soresdiate *Peltigera collina* is common especially in the mountains of California. It is rare on the Channel Islands, where it is known from only two collections made on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, upper Arlington Canyon, on moss and bark of *Quercus tomentella*, Knudsen et al. 7787 (UCR).

Peltula bolanderi (Tuck.) Wetmore, Ann. Mo. Bot. Gard, 57: 168 (1971). Description: Büdel and Nash 2002. Substrate: calcareous and non-calcareous rocks. World distribution: Asia, Africa, Australia, North America. CINP distribution: SB, SR.

NOTES. – *Peltula bolanderi* is widespread in California but easily overlooked or misidentified as *P. euploca*, which is larger and has a less undulate sorediate margin. It occurs on Santa Barbara and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on rock, *Bratt 4800* (SBBG; det. Wetmore).

Peltula corticola Büdel & R. Sant., Biblioth. Lichenol. 23: 79-80 (1987). Description: Büdel et al. 2007. Substrate: bark. World distribution: Africa, Asia, western North America. CINP distribution: SC.

NOTES. – *Peltula corticola* is known in California from a single collection that was made on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Islay Canyon Road, on bark, *Bratt 3457* (SBBG; det. Schultz).

Peltula euploca (Ach.) Poelt, Acta Rer. Nat. Mus. Slov. 13: 8 (1967). Description: Büdel and Nash 2002. Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Peltula euploca* is common throughout California especially in drainages and seeps. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on volcanic rock, *Knudsen 11888.3* (UCR).

Peltula farinosa Büdel, Crypt. Bot. 4: 363 (1994). Description: Büdel and Nash 2002. Substrate: calcareous & non-calcareous rock. World distribution: Asia, Africa, North America. CINP distribution: SC.

NOTES. – *Peltula farinosa* is frequent in Arizona, but is only known in California from two collections made on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Wetmore 74032* (MIN).

Peltula obscurans* var. *deserticola (Zahlbr.) Wetmore, Ann. Mo. Bot. Gard. 57: 190 (197). Description: Büdel and Nash 2002. Substrate: usually calcareous rock. World distribution: Asia, North America. CINP distribution: SC, SR.

NOTES. – *Peltula obscurans* var. *deserticola* is infrequent in southern California. It is rare in CINP where it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Wetmore 74033* (MIN).

Peltula obscurans* var. *hassei (Zahlbr.) Wetmore, Ann. Mo. Bot. Gard. 57: 194 (1971). Description: Büdel and Nash 2002. Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SR, WA.

PLATE 14, FIG. C.

NOTES. – *Peltula obscurans* var. *hassei* is common in California. It is rare on West Anacapa and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on rock, *Knudsen 10834* (UCR).

Peltula omphaliza (Nyl.) Wetmore, Ann. Mo. Bot. Gard. 57: 194 (1971). Description: Büdel and Nash 2002. Substrate: calcareous and non-calcareous rock. World distribution: Australia, Europe, Cape Verde Islands, North America. CINP distribution: SR.

NOTES. – *Peltula omphaliza* is rare in southern California, but because of its small size it is easily overlooked. In CINP it is known from single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Old Ranch Canyon, on rock, *Nash 33105* (ASU).

Peltula patellata (Bagl.) Swinscow & Krog, Norw. J. Bot. 26: 221 (1979). Description: Büdel and Nash 2002. Substrate: soil and rarely sandstone. World distribution: cosmopolitan. CINP distribution: SR.

PLATE 14, FIG. D.

NOTES. – *Peltula patellata* is frequent in southern California where it occurs in biological soil crusts (Hernandez and Knudsen 2012). It is only known from a single collection on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Wetmore 73902* (MIN).

Pertusaria amara (Ach.) Nyl., Bull. Soc. Linn. Normandie, sér. 2, 6: 288 (1872). Description: Lumbsch and Nash 2002. Substrate: bark. World distribution: Africa, Asia, Europe, North America. CINP distribution: SC, SR.

NOTES. – The sterile species *Pertusaria amara* is common in California. It is common in CINP where it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, *Knudsen 7559* (UCR).

Pertusaria brattiae Lumbsch & Nash, Bryologist 102: 218 (1999). Description: Lumbsch and Nash 2002. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

Plate 14, Fig. E.

NOTES. – *Pertusaria brattiae* is infrequent along the coast of California from at least San Luis Obispo County south to California. It occurs on all of the north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Knudsen 7560.1* (UCR).

Pertusaria californica Dibben, Milwaukee Publ. Mus. Publ. Biol. Geol. 5: 86 (1980). Description: Lumbsch and Nash 2002. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SR, WA.

NOTES. – *Pertusaria californica* is frequent along the coast of California from San Francisco north. But it is rare in San Mateo County. It is rare on the Channel Islands where it is known only from West Anacapa and Santa Rosa Islands on the basis of three collections.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Brockway Point, on rock, *Knudsen et al. 7743* (UCR).

Pertusaria flavicunda Tuck., Proc. Amer. Acad. Arts & Sci. 12: 176 (1877). Description: Lumbsch and Nash 2002. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC, SM, SR, WA.

PLATE 14, FIG. F.

NOTES. – *Pertusaria flavicunda* is frequent along the California coast from Santa Barbara County south. It is frequent on the Channel Islands and is often locally abundant. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pines road, on rock, *Knudsen 7424.1* (UCR).

Pertusaria islandica Bratt, Lumbsch & Schmitt, Lichenologist 38: 411 (2006). Description: Schmitt et al. 2007. Substrate: calcareous and non-calcareous rock. World distribution: North America. CINP distribution: SM.

NOTES. – *Pertusaria islandica* is a rare species. It is only known in California from San Miguel Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, between Caldwell Point and Willow Canyon, on caliche, *Knudsen 6906* (UCR).

Pertusaria lecanina Tuck., Gen. Lich.: 127 (1872). Description: Lumbsch and Nash 2002. Substrate: bark. World distribution: North America. CINP distribution: SC, SR, WA.

NOTES. – *Pertusaria lecanina* is frequent on oaks along the coast of central California south to Baja California. It occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on wood, *Nash 37085* (ASU; det. Lumbsch).

Pertusaria moreliensis B. de Lesd., Lich. Du Mexique: 18 (1914). Description: Lumbsch and Nash 2002. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SR.

NOTES. – *Pertusaria moreliensis* is a common Mexican species. It is known from California only from a single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, upper Cherry Canyon, on sandstone, *Nash 33124* (ASU; det. Lumbsch).

Pertusaria occidentalis Bratt, Lumbsch & Schmitt, Lichenologist 38: 412 (2006). Description: Schmitt et al. 2007. Substrate: calcareous rock. World distribution: North America. CINP distribution: SM.

PLATE 15, FIG. A.

NOTES. – *Pertusaria occidentalis* is a rare species. It is only known in California from San Miguel Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Hill, on rock, *Knudsen 6787* (UCR).

Pertusaria ophthalmiza (Nyl.) Nyl., Flora 48: 354 (1865). Description: Lumbsch and Nash 2002. Substrate: on bark, wood. World distribution: northern hemisphere. CINP distribution: SC.

NOTES. – *Pertusaria ophthalmiza* can be easily confused with *P. amara* which differs in having KC+ purple soredia while *P. ophthalmiza* has KC- balls of pruina without algal cores that are mistaken for soredia. It occurs on Santa Cruz Island, where it is rare, known from two populations.

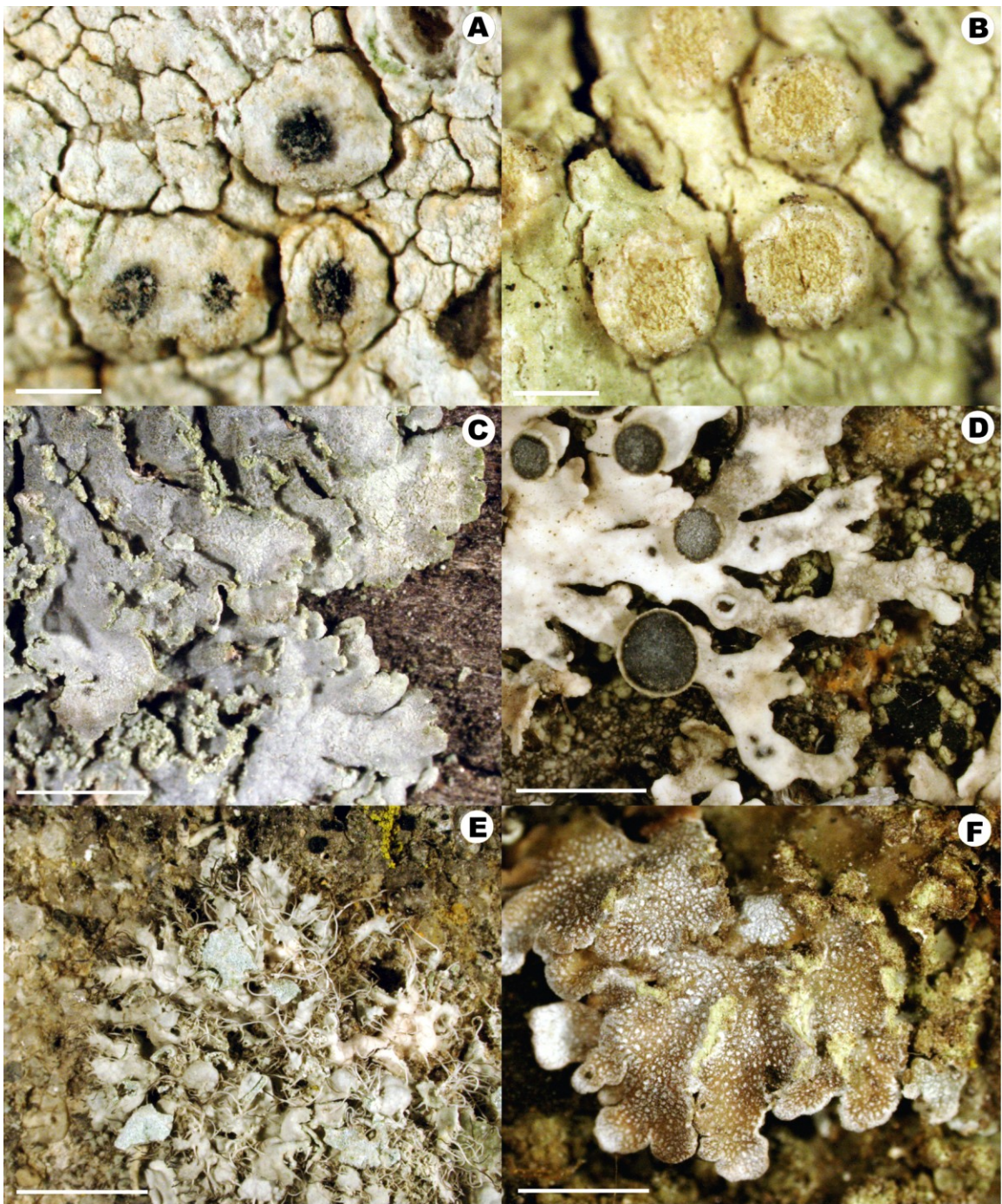


Plate 15, A, *Pertusaria occidentalis* (Knudsen 6904, UCR). B, *P. xanthodes* (Knudsen 10614, UCR). C, *Physcia dimidiata* (Knudsen 12972, NY). D, *Physcia phaea* (Knudsen 7457, UCR). E, *Physcia tenellula* (Knudsen 10560, UCR). F, *Physconia enteroxantha* (Lendemer 14727, NY). Scales = 2.0 mm in E; 1.0 mm in C, F, D; 0.5 mm in A, B.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km from radar station, on bark, *Ryan 31613* (ASU).

Pertusaria rubefacta Erichsen, Rep. Spec. Nov. 35: 387 (1934). Description: Lumbsch and Nash 2002. Substrate: on bark, usually oak. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Pertusaria rubefacta* is frequent along the central coast of California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, upper Cherry Canyon, on *Pinus muricata*, *Knudsen 7675 & Baguskus* (ASU; det. Lumbsch).

Pertusaria tejocotensis B. de Lesd., Lich. Mexique: 18 (191). Description: Lumbsch and Nash 2002. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: SC.

NOTES. – *Pertusaria tejocotensis* is a common Mexican species that is only known from California on the basis of a single collection that was made on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, 4.5 km from radar station, on rock, *Nash 32452-A* (ASU; det. Lumbsch).

Pertusaria velata (Turner) Nyl., Lich. Scand.: 179 (1861). Description: Lumbsch and Nash 2002. Substrate: bark of oak trees. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Pertusaria velata* is infrequent along the coast of California. It is rare in CINP where it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on bark, *Wetmore 73562* (ASU, MIN; det. Lumbsch).

Pertusaria xanthodes Müll. Arg., Flora 67: 286 (1884). Description: Lumbsch and Nash 2002. Substrate: bark. World distribution: Bermuda, North America. CINP distribution: SC, SR.

PLATE 15, FIG. B.

NOTES. – *Pertusaria xanthodes* is frequent along the coast of central and southern California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on dead shrub, *Knudsen 7596* (UCR)

Phaeophyscia hirsuta (Mereschk.) Essl., Mycotaxon 7: 302 (1978). Description: Esslinger 2004a. Substrate: bark, rock. World distribution: Africa, Europe, North America. CINP distribution: SC, SM, SR.

NOTES. – *Phaeophyscia hirsuta* is common in California. In the southern part of the state the thallus is often reduced when occurring on rock and thus easily overlooked. It is common on Santa Cruz Island and also occurs on San Miguel and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on rock, *Knudsen 6780* (UCR).

****Phaeosporobolus usneae*** D. Hawksw. & Hafellner, Nova Hedwigia 43: 526 (1986). Description: Diederich 2004c. Substrate: on a variety of epiphytic macrolichens. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – The anamorphic fungus *Phaeosporobolus usneae* is frequent on macrolichens, especially in northern California. It is known from Santa Cruz Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on *Ramalina subleptocarpa*, Bratt 5697 (SBBG; det. Diederich).

Phylctis speirea G. Merr., Ottawa Nat. 27: 118 (1913). Description: Tønsberg 2004d. Substrate: bark. World distribution: North America. CINP distribution: SC?.

NOTES. – *Phylctis speirea* is rare in California. H.E. Hasse collected it in Rustic Canyon and at the top of Santa Ynez Canyon on smooth oak bark in Santa Monica Mountains, where it has probably been extirpated by frequent fires. Tønsberg reported it from the Channel Islands without citing a specimen (Tønsberg 2004c). Two specimens from Santa Cruz Island identified as *P. speirea* at SBBG need to be verified. The sorediate species *P. argena* (Spreng.) Flot. possibly occurs on the islands.

No voucher specimens were seen for this study.

****Phoma cladoniicola*** Diederich, Kocourk, & Etayo in Diederich et al., Lichenologist 39: 157 (2007). Description: Diederich et al. 2007. Substrate: *Cladonia* species. World distribution: Europe, North America. CINP distribution: WA.

NOTES. – The anamorphic fungus *Phoma cladoniicola* is known from southern California where it is parasitic on *Cladonia chlorophaea*, but so far has not been discovered on any of the endemic species *C. hammeri*, *C. nashii* and *C. maritima*. It occurs on West Anacapa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: West Anacapa Island, Summit Peak, on *Cladonia chlorophaea*, Knudsen 10868 (UCR)

Physcia adscendens (Fr.) H. Olivier, Flore analytique et dichotomique des lichens de l'Orne I: 79 (1882). Description: McCune and Geiser 2009. Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: SB, SC, SR.

NOTES. – *Physcia adscendens* is one of the most common lichens throughout California. It occurs on Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, above the Army Road, on *Artemisia californica*, Knudsen 7401.2 & Baguskus (UCR).

Physcia aipolia (Ehrh. ex Humb.) Furnr., Flora Ratisbonensis Naturhistorische Topographie von Regensburg 2: 249 (1839). Description: Moberg 2002b. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SB, SC, SR

NOTES. – *Physcia aipolia* is common in California. It is infrequent on Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, on bark, Ryan 31238 (ASU).

Physcia biziana (A. Massal) Zahlbr., Österr. Bot. Zeitschr. 51: 348 (1901). Description: Moberg 2002b. Substrate: on bark and usually non-calcareous rock in California. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Physcia biziana* is common in California. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Upper Lobo Canyon, on rock, Knudsen et al. 8919 (UCR).

Physcia dimidiata (Arnold) Nyl., Flora 64: 537 (1881). Description: Moberg 2007b; McCune and Geiser 2009. Substrate: non-calcareous rock, occasionally on wood. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 15, FIG. C.

NOTES. – *Physcia dimidiata* is common especially in southern California from the coast to the Mojave Desert, where it grows on juniper wood. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Scorpion Canyon, on volcanic boulder, *Knudsen 11889.1* (UCR).

Physcia millegrana Degel., Ark. Bot. 30A1: 56 (1940). Description: Hinds and Hinds 2007. Substrate: bark. World distribution: North America. CINP distribution: SR.

NOTES. – *Physcia millegrana* is especially common in eastern North America. The only report from California is a single collection that was made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along road to East Point, on *Quercus pacifica*, *Nash 32860* (ASU; det. Moberg).

Physcia neglecta Moberg, Symb. Bot. Ups. 32: 176 (1997). Description: Moberg 2002b. Substrate: non-calcareous rock, occasionally bark. World distribution: North America. CINP distribution: SR.

NOTES. – *Physcia neglecta* is a non-sorediate Mexican species. It is only known from California with certainty on the basis of a single collection that was made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, road to East Point, on *Quercus pacifica*, *Nash 32601-B* (ASU; det. Moberg).

Physcia phaea (Tuck.) J.W. Thomson, Beih. Nova Hedwigia 7: 54 (1963). Description: Moberg 2002b. Substrate: non-calcareous rocks. World distribution: Asia, Africa, Europe, North America. CINP distribution: EA, SB, SC, SR, WA.

PLATE 15, FIG. D.

NOTES. – *Physcia phaea* is apparently rare in California, except at lower elevations along the coast in the southern part of the state. It occurs on Anacapa, Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on basalt, *Knudsen 10924* (UR)

Physcia subtilis Degel., Ark. Bot. 30A: 72 (1941). Description: Hinds and Hinds 2007. Substrate: rock. World distribution: North America. CINP distribution: SR.

NOTES. – *Physcia subtilis* is a common North American species that is only known in California from a single collection that was made on Santa Rosa Island. It is interesting that the two disjunct locations of *P. millegrana* and *P. subtilis* are relatively close together on Santa Rosa Island. Both of these taxa need to be revised (Esslinger, pers. comm.)

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, San Pablo Ridge, on rock, *Nash 32814* (ASU; det. Moberg).

Physcia tenellula Moberg, Symb. Bot. Upsal. 32: 181 (1997). Description: Moberg 2002b. Substrate: non-calcareous rock, occasionally bark. World distribution: North America. CINP distribution: SB, SC, SR, WA.

PLATE 15, FIG. E.

NOTES. – *Physcia tenellula* is a coastal species that occurs from Santa Barbara County to Baja California. Identifications of *P. tenella* (Scop.) DC. from the islands generally refer to this species. *Physcia tenella* is usually a montane species in California but may also occur on the Channel Islands. *Physcia tenellula* occurs on Anacapa, Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on volcanic rock, *Knudsen 11885* (UCR).

Physcia tribacia (Ach.) Nyl., Flora 57: 307 (1874). Description: Moberg 2002b. Substrate: non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SB, SC, SR.

NOTES. – *Physcia tribacia* is common in California. It occurs on Santa Barbara, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Quemada Canyon, on rock, *Knudsen 8686 & Kocourková* (UCR).

Physcia undulata Moberg, Nord. J. Bot. 6: 861 (1986). Description: Moberg 2002b. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Physcia undulata* is primarily a Mexican species. It is only known from California from a single collection that was made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, *Nash 32934* (ASU; det. Moberg).

Physconia enteroxantha (Nyl.) Poelt, Nova Hedwigia 12: 125 (1966). Description: Esslinger 2002a. Substrate: bark, rock. World distribution: Asia, Africa, Europe, North America. CINP distribution: SC, SM, SR, WA.

PLATE 15, FIG. F.

NOTES. – *Physconia enteroxantha* is common in California. It occurs on West Anacapa, Santa Cruz, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, lower Willow Canyon, on sandstone, *Nash 41308* (ASU; det. Esslinger).

Physconia fallax Essl., Bull. Calif. Lichen Society 7: 4 (2000). Description: Esslinger 2002a. Substrate: bark, rock. World distribution: North America. CINP distribution: SR.

NOTES. – *Physconia fallax* is common in California. In CINP it is known from a single collection that was made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, upper Arlington Canyon, over moss on bark of *Quercus tomentella*, *Knudsen et al. 7771* (UCR).

Physconia isidiigera (Zahlbr. ex Herre) Essl., Mycotaxon 51: 94 (1994). Description: Esslinger 2002a. Substrate: bark, rock. World distribution: North America. CINP distribution: SC, SM, SR, WA.

NOTES. – *Physconia isidiigera* is common in California. In many areas it is especially abundant on rock. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Rosa Island, along Wreck Road, on *Heteromeles arbutifolia*, *Knudsen 7517 & Baguskus* (UCR).

Placidium boccanum (Servit) Breuss, Ann. Naturhist. Mus. Wien 98: 38 (1996). Description: Prieto et al. 2010. Substrate: non-calcareous rock. World distribution: Europe, North America. CINP distribution: SC, SR.

PLATE 22, FIG. A.

NOTES. – *Placidium boccanum* was described from Croatia and was recently reported from the Iberian Peninsula in Europe (Prieto et al. 2010). The species is here reported new for California and North America from CINP where it is rare on Santa Rosa Island, known from a single collection determined by O Breuss.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Clapp Springs Road: north-facing slope near Yellow Peak, on shale, *Knudsen 10455.2 & Chaney* (LI, UCR; det. Breuss).

Placidium squamulosum (Ach.) Breuss, Ann. Naturhist. Mus. Wien 98: 39 (1996). Description: Breuss 2002b. Substrate: soil. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Placidium squamulosum* is common in biological soil crusts throughout western North America like *Clavascidium lacinulatum*. The two species often look similar in southern California and are only easily distinguished by the lack of thick rhizines in *P. squamulosum* (though it has abundant thin rhizohyphae). It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on soil, *Knudsen 11418 & Chaney* (UCR).

Placynthiella icmalea (Ach.) Coppins & P. James, Lichenologist 16: 244 (1984). Description: Ryan et al. 2004b. Substrate: non-calcareous rock, soil, bark, detritus, wood. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Placynthiella icmalea* is infrequent in California, often occurring in small populations as part of biological soil crusts. It is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on soil, *Knudsen 7577* (UCR).

Placynthium nigrum (Hudson) Gray, Nat. Arr. Br. Pl. 1: 395 (1821). Description: Schultz 2002c. Substrate: calcareous rock, sometimes soil and bark. World distribution: Asia, Europe, North America. CINP distribution: SC, SC.

PLATE 16, FIG. B.

NOTES. – *Placynthium nigrum* is infrequent in California on calcareous rock and can be quite variable in morphology. The illustration presented here shows its distinctive blackish prothallus. The species is known only from Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, between Prisoner and Pelican Harbors, *Bratt 12453* (SBBG; det. Ryan).

****Plectocarpon nashii*** Hafellner, Mycotaxon 84: 312 (2002). Description: Ertz and Diederich 2007. Substrate: *Niebla robusta* (possibly other *Niebla* species). World distribution: North America (California endemic). CINP distribution: WA (endemic).

NOTES. – The lichenicolous fungus *Plectocarpon nashii* is only known from the type collection which was made on West Anacapa Island. It is not known if it occurs on *Niebla* species other than *N. robusta*.

Voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on *Niebla robusta*, *Nash 37021-A* (ASU).

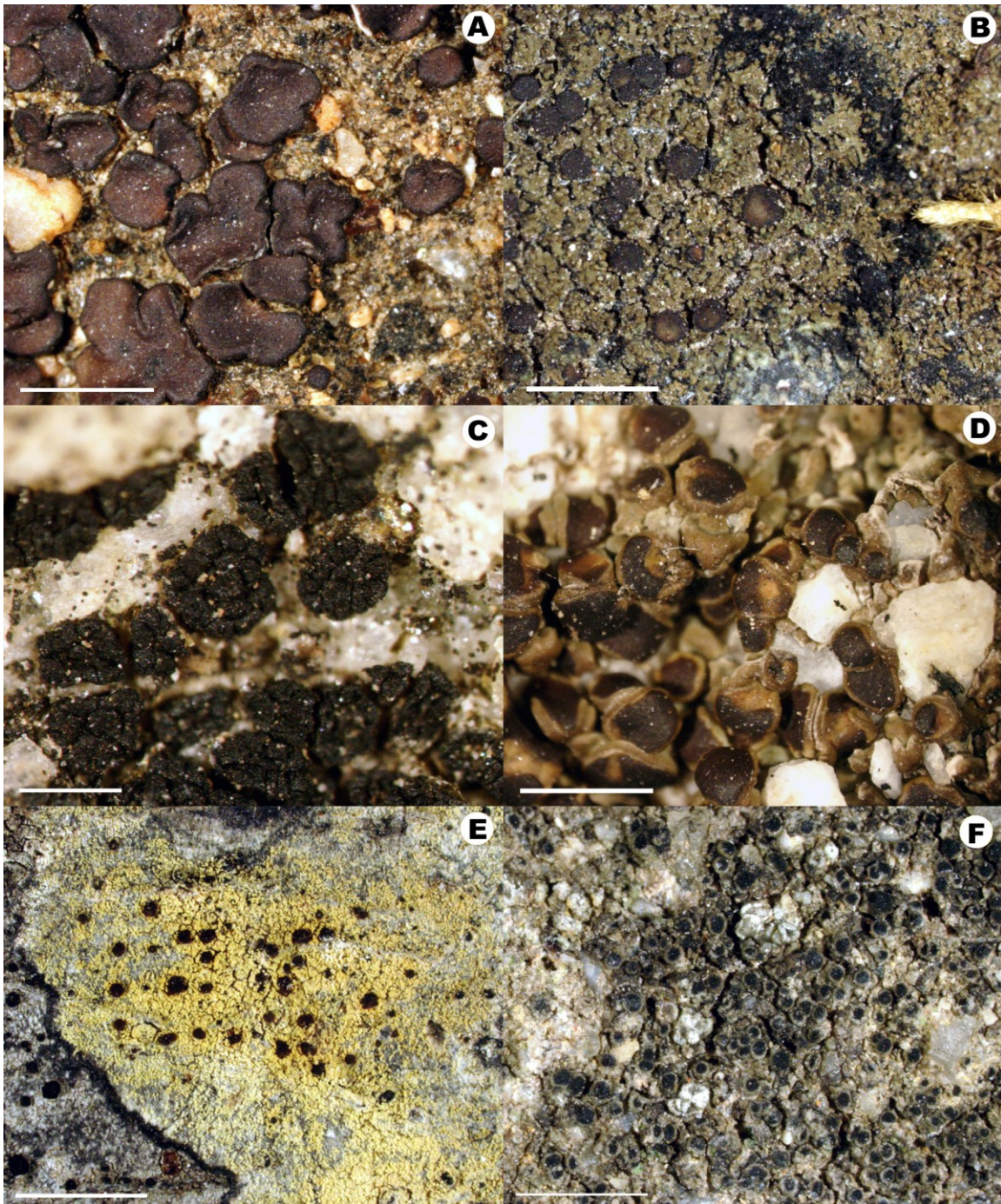


Plate 16, A, *Clavascidium lacinulatum* (Knudsen 1188, NY). B, *Placynthium nigrum* (Hasse s.n., NY). C, *Polysporina simplex* (Knudsen 11832, UCR). D, *Protoparmelia badia* (Lendemer 14989, NY). E, *Pyrrhospora quercea* (Knudsen 7561, UCR). F, *Rinodina gennarii* (Knudsen 11533, UCR). Scales = 2.0 mm in E; 1.0 mm in A, B, D, F; 0.5 mm in C.

Pleopsidium chlorophanum (Wahlenb.) Zopf, Ann Chemie 284: 117 (1895). Description: Knudsen 2007b. Substrate: non-calcareous rock. World distribution: Antarctica, Europe, North and South America. CINP distribution: SC.

NOTES. – *Pleopsidium chlorophanum* is only known in California and North America from a single collection made by C. Bratt on the the west end of Santa Cruz Island. The name has been misapplied by many American lichenologists since the time of E. Tuckerman to the common montane species *P. flavum* (Bellardi) Körber.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end, on rock, *Bratt 3436* (ASU, SBBG; det. Knudsen).

****Polycoccum pulvinatum*** (Eitner) R. Santesson, Lichens and Lichenicolous Fungi of Sweden and Norway: 175 (1993). Substrate: *Physcia* species. Description: Santesson 1993. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – The lichenicolous fungus *Polycoccum pulvinatum* forms galls on *Physcia* species. It is here reported new for California.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on *Physcia*, *Kocourková 8161 & Knudsen* (UCR).

****Polysporina arenacea*** (H. Magn.) K. Knudsen & Kocourk., Mycotaxon 105: 157 (2008). Description: Knudsen and Kocourková 2008. Substrate: various crustose lichens. World distribution: Asia, North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Polysporina arenacea* is infrequent and widespread in western North America. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Peak, on *Lecidella* species, *Knudsen et al. 8762.2* (UCR).

Polysporina simplex (Taylor) Vězda, Folia Geobot. Phytotax. Bohemoslov. 13: 399 (1978). Description: Knudsen 2007c. Substrate: calcareous and non-calcareous rocks. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 16, FIG. C.

NOTES. – *Polysporina simplex* is common in California though it is rarely collected. It is infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Windmill Canyon, on rock, *Knudsen 8888* (UCR).

****Polysporina subfuscescens*** (Nyl.) K. Knudsen & Kocourk., Mycotaxon 105: 157 (2008). Description: Knudsen 2007a (as *Polysporina lapponica*), Knudsen and Kocourková 2008. Substrate: lichenicolous on crustose and endolithic lichens. World distribution: Asia, Europe, North America. CINP distribution: SC, SR.

NOTES. – *Polysporina subfuscescens* is a common lichenicolous fungus in California and is parasitic on a wide variety of saxicolous lichens. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Soledad grove, on unknown crustose lichens on rock, *Knudsen et al. 11293.1* (UCR).

Protoparmelia badia (Hoffm.) Hafellner, Beih. Nova Hedwigia 79: 292 (1984). Description: Ryan et al. 2004c. Substrate: non-calcareous rocks. World distribution: cosmopolitan. CINP distribution: SC.

PLATE 16, FIG. D.

NOTES. – *Protoparmelia badia* is infrequent in California. In CINP it is rare on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Nash 33030* (ASU; det. Sheard).

Protoparmelia ryaniana v.d. Boom, Sipman & Elix, Lichen Flora of the Greater Sonoran Desert Region, 3: 392 (2007). Description: v.d. Boom et al. 2004. Substrate: juvenile parasite on *Dimelaena radiata*, developing an independent thallus. World distribution: North America. CINP distribution: SC, SR, WA.

NOTES. – *Protoparmelia ryaniana* is a coastal species in southern California. It is a juvenile parasite on *Dimelaena radiata*, eventually developing an independent thallus. In CINP it is known from West Anacapa, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on rock, *Knudsen 11439 & Chaney* (UCR).

Pseudosagedia aenea (Wallr.) Hafellner & Kalb, Biblioth. Lichenol. 57: 172 (1995). Description: Aptroot 2002c (as *Porina aenea*). Substrate: on oak bark and in California also on *Pinus muricata*. World distribution: northern hemisphere. CINP distribution: SC, SR.

NOTES. – *Pseudosagedia aenea* is rare in California where it is known only with certainty from CINP. The genus *Pseudosagedia* is considered a synonym of *Porina* by some authors (McCarthy & Malcom 1997). The species is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on *Pinus muricata*, *Nash 33058* (ASU; det. Aptroot).

Pseudosagedia cestrensis (Tuck.) R.C. Harris, Opuscula Philolichenum 2: 15 (2005). Description: Aptroot 2002c (as *Porina cestrensis*). Substrate: bark, rarely soil or rock. World distribution: probably cosmopolitan. CINP distribution: SR.

NOTES. – *Pseudosagedia cestrensis* is rare in California where it is only known from the Channel Islands with certainty, though it possibly also occurs along central California coast.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Heteromeles arbutifolia*, *Nash 32962* (ASU; det. Aptroot).

Pseudosagedia chlorotica (Ach.) Hafellner & Kalb, Biblioth. Lichenol. 57: 172 (1995). Description: Aptroot 2002c (as *Porina chlorotica*). Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Pseudosagedia chlorotica* is rare along the coast of southern and central California. It occurs on Santa Cruz and Santa Rosa Islands in CINP. The ascospores can vary significantly in size.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, above Smuggler's Road, on volcanic rock, *Knudsen 14934 & Kocourková* (UCR).

Psora brunneocarpa Timdal, Lichen Flora of the Greater Sonoran Desert Region, 1: 420 (2002). Description: Timdal 2002b. Substrate: non-calcareous rock, soil. World distribution: North America. CINP distribution: SR.

NOTES. – *Psora brunneocarpa* occurs in Mexico and is known from California on the basis of a single collection that was made on Santa Rosa Island where it was found in a biological soil crust.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Peak, on soil, *Nash 33008* (ASU; det. Timdal).

Psora pacifica Timdal, Bryologist 89: 268 (1986). Description: Timdal 2002b. Substrate: soil. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Psora pacifica* is a frequent coastal species in southern California. It occurs in biological soil crusts on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, west end, on soil, *Knudsen et al. 8547* (UCR).

Psorotichia schaereri (A. Massal.) Arnold, Flora 52: 265 (1869). Description: Schultz 2007c. Substrate: calcareous and non-calcareous rock. World distribution: Asia, Europe, North America. CINP distribution: SR.

NOTES. – *Psorotichia schaereri* is rarely collected in California, but easily overlooked. In CINP it is known from a single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo Ridge, on rock, *Nash 32834* (ASU; det. Schultz).

Punctelia borreri (Smith) Krog, Nordic J. Bot. 2: 291 (1982). Description: Egan and Aptroot 2004; McCune and Geiser 2009. Substrate: bark of oaks. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Punctelia borreri* is infrequent along the central coast of California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain, on moss and bark on *Quercus tomentella*, *Knudsen et al. 7687* (NY, UCR; det. Lendemer).

Punctelia jeckeri (Roum.) Kalb, Biblioth. Lichenol. 95: 312 (2007). Description: Lendemer and Hodkinson 2010. Substrate: bark, usually of oaks, and on non-calcareous rocks. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – In California, the common sorediate species *Punctelia jeckeri* usually occurs in mixed corticolous communities on Coast Live Oak. The names *P. subrudecta* (Nyl.) Krog and *P. perreticulata* (Räsänen) G. Wilh. & Ladd have been misapplied in the literature to the western North America populations of *P. jeckeri* (Lendemer & Hodkinson 2010). It occurs on Santa Cruz and Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on *Pinus muricata*, *Knudsen 10590* (UCR).

Pyrrhospora quernea (Dicks.) Körb., Syst. Lich. Germ.: 209 (1855). Description: Ryan et al. 2004d. Substrate: bark. World distribution: Africa, Asia, Europe, North America. CINP distribution: SC, SM, SR, WA.

PLATE 16, FIG. E.

NOTES. – *Pyrrhospora quernea* is common along the coast of California on a variety of trees and shrubs, and often also on old wood fences. It is often sterile. The species occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on wood, *Chaney 9255* (SBBG; det. Bratt).

Pyrrhospora varians (Ach.) R.C. Harris, *Evansia* 2: 47 (1985). Description: (as *Lecidea varians*) Hertel and Printzen 2004. Substrate: bark. World distribution: Europe, North America. CIMP distribution: SC, SR.

NOTES. – *Pyrrhospora varians* is infrequent in southern and central California. It is rare on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, China Camp, on wood of old *Heteromeles arbutifolia*, *Knudsen et al.* 7818 (UCR).

Ramalina canariensis J. Steiner, *Österr. Bot. Zeitschr.* 9: 8 (1904). Description: Kashiwadani and Nash 2004. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Ramalina canariensis* is common, especially along the central coast of California. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Water Canyon, on *Quercus pacifica*, *Knudsen* 7514 (UCR).

Ramalina farinacea (L.) Ach., *Lich. Univ.*: 606 (1810). Description: Kashiwadani and Nash 2004. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SC, SM, SR, WA.

NOTES. – *Ramalina farinacea* is common in California. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, road to East Point, on *Quercus pacifica*, *Nash* 32867 (ASU, UCR).

Ramalina leptocarpha Tuck., *Suppl. Enum. N. Amer. Lich.* 423 (1858). Description: Kashiwadani and Nash 2004. Substrate: bark. World distribution: North America. CIMP distribution: SC, SM, SR, WA.

NOTES. – *Ramalina leptocarpha* is common in California. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, near Smith Highway, on *Quercus tomentella*, *Knudsen* 8857 (UCR).

Ramalina menziesii Taylor, *London J. Bot.* 6: 189. (1847). Description: Kashiwadani and Nash 2004. Substrate: bark. World distribution: North America. CIMP distribution: SC, SR.

NOTES. – *Ramalina menziesii* is common in California. It occurs in scattered populations on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Dry Canyon, on *Heteromeles arbutifolia*, *Knudsen et al.* 10536 (UCR).

Ramalina pollinaria (Westr.) Ach., *Lich. Univ.*: 608 (1810). Description: Kashiwadani and Nash 2004. Substrate: bark, and rock. World distribution: cosmopolitan. CIMP distribution: SC, SR.

NOTES. – *Ramalina pollinaria* is a frequent coastal species in California. It occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Twin Faults, on *Quercus agrifolia*, Nash 32920 (ASU; det. Kashiwadani).

Ramalina subleptocarpha Rundel & Bowler, Bryologist 79: 368 (1976). Description: Kashiwadani and Nash 2004. Substrate: bark. World distribution: North America. CINP distribution: SB, SC, SM, SR, WA.

NOTES. – *Ramalina subleptocarpha* is common in California. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Willow Canyon, on *Baccharis*, Knudsen 6947 (UCR).

Rinodina bolanderi H. Magn., Bot. Not. 1947: 51 (1947). Description: Sheard 2010. Substrate: bark, detritus, soil, rock. World distribution: North America. CINP distribution: SC, SM, SR, WA.

NOTES. – *Rinodina bolanderi* is common in California on a variety of substrates. It usually occurs on rock on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on rock, Bratt 4958 (SBBG; det. Sheard).

Rinodina brouardii B. de Lesd., Ann. Cryptog. Exot. 5: 131 (1932). Description: Sheard 2010. Substrate: rock. World distribution: North America. CINP distribution: SC.

NOTES. – *Rinodina brouardii* is a rare North American endemic occurring on the west slope of the Rockies. It is known from California from a single collection made on Santa Cruz Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on rock, Bratt 5707 (SBBG; det. Sheard).

Rinodina californiensis Sheard, Bryologist 105: 656 (2002). Description: Sheard 2010. Substrate: bark. World distribution: North America. CINP distribution: SC.

NOTES. – *Rinodina californiensis* is common in California in wide variety of habitats. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on bark, Sheard 5130b (ASU, SASK).

Rinodina capensis Hampe ex A. Massal., Memor. I. R. Isti. Veneto 10: 87 (1861). Description: Sheard 2010. Substrate: bark. World distribution: Asia, Africa, Europe, North America. CINP distribution: SC, SR.

NOTES. – *Rinodina capensis* is common in California and Oregon. It is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on bark, Wetmore 74537 (ASU, MIN; det. Sheard).

Rinodina endospora Sheard, Bryologist 105: 658. Description: Sheard 2010. Substrate: bark. World distribution: North America (California endemic). CINP distribution: SC, SR.

NOTES. – *Rinodina endospora* is a California endemic of the coastal ranges and Sierra Nevada Mountains. It appears to be rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on bark, *Tucker 35866* (SBBG; det. Sheard).

Rinodina gennarii Bagl., Comment. Soc. Crittog. Ital. 1: 17 (1861). Description: Sheard 2010. Substrate: rock. World distribution: cosmopolitan. CINP distribution: EA, SC, SR.

PLATE 16, FIG. F.

NOTES. – *Rinodina gennarii* is a common on the California coast. It occurs on East Anacapa, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: East Anacapa Island, on basalt, *Knudsen 10922* (UCR).

Rinodina griseosoralifera Coppins, Lichenologist 21: 169 (1989). Description: Sheard 2010. Substrate: bark. World distribution: Europe, North America. CINP distribution: SM.

NOTES. – *Rinodina griseosoralifera* is rare in California, though this apparent rarity may be due to its undercollection at least along the northern coast. In CINP it is only known from a single collection made on San Miguel Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on bark, *Tønsberg 25430* (BG).

Rinodina hallii Tuck., Bull. Torrey Bot. Club 5: 20 (1874). Description: Sheard 2010. Substrate: bark. World distribution: North America. CINP distribution: SC.

NOTES. – *Rinodina hallii* is a common species in central and northern California. It is rare on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, east of Stanton Ranch, on *Quercus agrifolia*, *Nash 32515a* (ASU; det. Sheard).

Rinodina herrei H. Magn., Bot. Not. 1953: 191. Description: Sheard 2010. Substrate: bark. World distribution: North America. CINP distribution: SC, SR.

PLATE 17, FIG. A.

NOTES. – *Rinodina herrei* is common along the California coast. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on bark, *Sheard 5050* (ASU, SASK).

Rinodina innata Sheard, Bryologist 105: 660. Description: Sheard 2010. Substrate: calcareous rock and sandstone. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Rinodina innata* is a rare maritime species that was described from Santa Cruz Island. It is rare on the coast of California and infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on rock, *Sheard 5048* (SASK, SBBG).

Rinodina intermedia Bagl., Comment. Soc. Crittog. Ital. 1: 315 (1863). Description: Sheard 2010. Substrate: soil, on spike moss and moss, rarely on old stems of dead shrub. World distribution: cosmopolitan. CINP distribution: SC, SR.

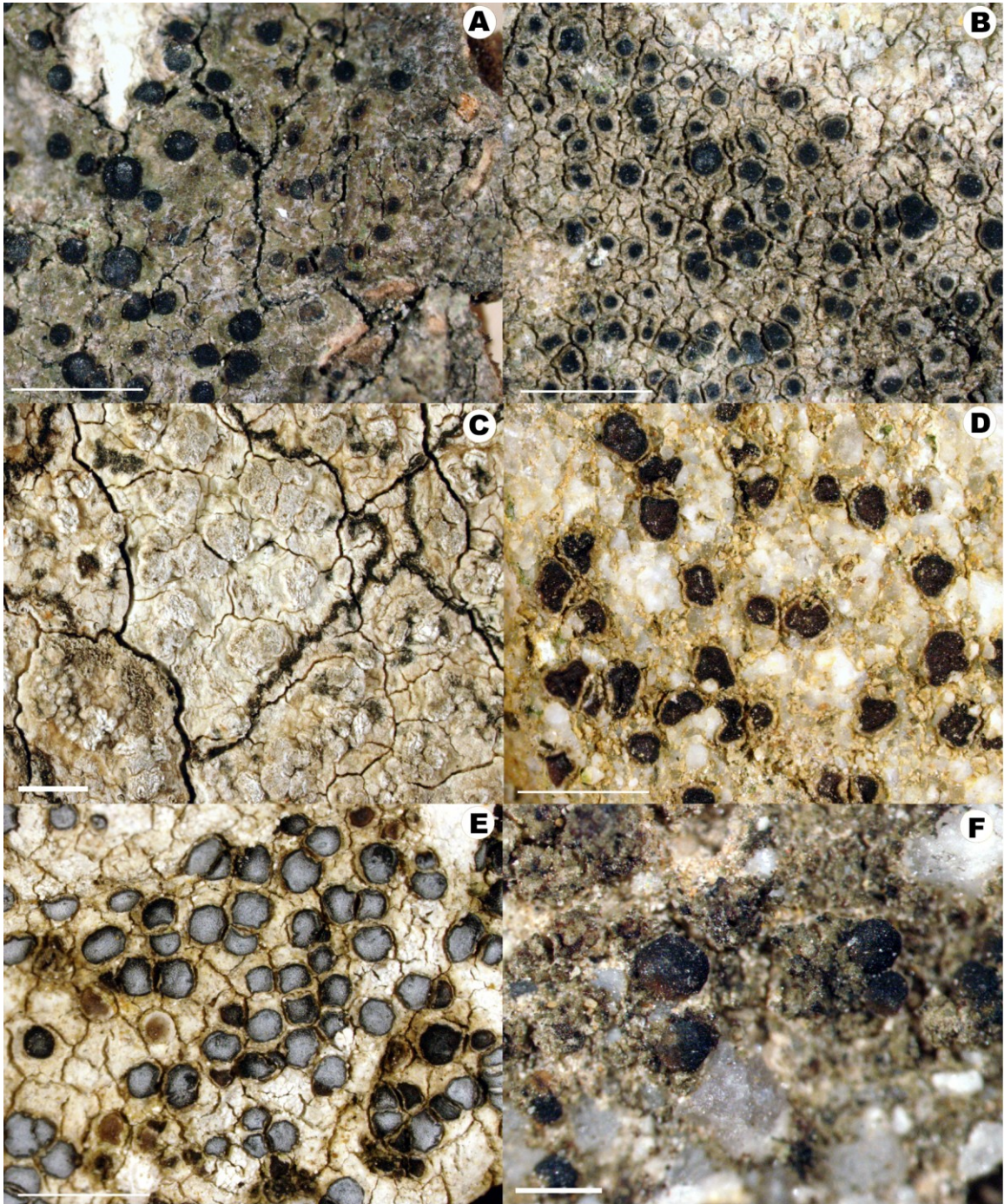


Plate 17, A, *Rinodina herrei* (Knudsen 8949.2, UCR). B, *R. pacifica* (Knudsen 3744, UCR). C, *Roccellina franciscana* (Bjork 23541, NY). D, *Sarcogyne arenosa* (Knudsen 4078, UCR). E, *S. regularis* (Knudsen 6777, UCR). F, *Scoliciosporum umbrinum* (Hasse 1174, NY). Scales = 1.0 mm in A-E; 0.5 mm in F.

NOTES. – *Rinodina intermedia* is one of the most common species found in biological soil crusts in southern California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on soil, *Knudsen 11428 & Chaney* (UCR).

Rinodina marysvillensis H. Magn., Ann. Cryptog. Exot. 5: 31 (1932). Description: Sheard 2010. Substrate: bark. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Rinodina marysvillensis* occurs along the coast of California. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on bark, *Sheard 5038-A* (ASU, SASK)

Rinodina oxydata (A. Massal.) A. Massal., Neag. Lich.: 19 (1854). Description: Sheard 2010. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Rinodina oxydata* is apparently infrequent in California. In CINP it is known from a single collection that was made on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, east of Stanton Ranch, on rock, *Nash 32557* (ASU; det. Sheard).

Rinodina pacifica Sheard, Bryologist 105: 666 (2002). Description: Sheard 2010. Substrate: calcareous rock and sandstone. World distribution: North America. CINP distribution: SB.

PLATE 17, FIG. B.

NOTES. – *Rinodina pacifica* is a rare maritime species known from the coast of western North America. In CINP it is known from a single collection made on Santa Barbara Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, *Bratt 5213* (SBBG; det. Sheard).

Rinodina poeltiana Giralt & W. Obermayer, Herzogia 9: 709 (1993). Description: Sheard 2010. Substrate: bark. World distribution: Europe, North America. CINP distribution: SC, SR.

NOTES. – *Rinodina poeltiana* is a rare species in North America that is known from Big Sur and the north Channel Islands. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Quercus agrifolia*, *Sheard 5072-A* (SASK).

Rinodina santa-monicae H. Magn., Bot. Not. 1947: 42 (1947). Description: Sheard 2010. Substrate: bark. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Rinodina santa-monicae* was originally described from an H.E. Hasse collection made in the Santa Monica Mountains. It is one of the most common species on bark in California. In CINP it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black mountain, on bark, *Sheard 5088-A* (ASU, SASK).

Roccella gracilis Bory, Dict. Class. Hist. Nat. 14 : 631 (1828). Description: Tehler 2002d (as *Roccella peruensis*). Substrate: rocks, bark, wood. World distribution: North and South America. CINP distribution: SB, SR, WA.

NOTES. – *Roccella gracilis* reaches its northern distributional limit on the north Channel Islands. It occurs on West Anacapa, Santa Barbara, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, lower Oak Canyon, on *Prunus ilicifolia* trees, *Knudsen 10880* (UCR).

Roccellina conformis Tehler, Oper. Bot. 70: 50 (1983). Description: Tehler 2002e. Substrate: bark. World distribution: North America. CINP distribution: SR.

NOTES. – *Roccellina conformis* is common in Baja California and rare in California. It is infrequent on Santa Catalina Island and is known from a single collection on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Heteromeles arbutifolia*, *Nash 32963* (ASU; det. Tehler).

Roccellina franciscana (Zahlbr. ex Herre) Follmann in Huneck & Follmann, Philippia 4: 119 (1979). Description: Tehler 2002e. Substrate, bark, rock, wood. World distribution: North America. CINP distribution: SR.

PLATE 17, FIG. C.

NOTES. – *Roccellina franciscana* occurs along coast of western North America from Humboldt County to Baja California. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Quercus agrifolia*, *Nash 32950* (ASU; det. Tehler).

****Roselliniella cladoniae*** (Anzi) Matzer & Hafellner, Biblioth. Lichenol. 37: 59 (1990). Description: Matzer and Hafellner 1990. Substrate: *Cladonia* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Roselliniella cladoniae* is known from North America only from Santa Rosa Island where it was collected on *Cladonia maritima*.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Cladonia maritima*, *Kocourková & Knudsen s.n.* (PRM 909680, UCR).

Sarcogyne arenosa (Herre) K. Knudsen & Standley, Opuscula Philolichenum 2: 36 (2005). Description: Knudsen and Standley 2007. Substrate: calcareous and non-calcareous rock and occasionally on soil in biological soil crusts. World distribution: North America. CINP distribution: SC, WA.

PLATE 17, FIG. D.

NOTES. – *Sarcogyne arenosa* is common in southern and central California, especially on sandstone. On calcareous substrates it is can usually be found with *S. regularis*. The species was originally described from the Santa Cruz Mountains by A.W.C.T. Herre. It is rare on West Anacapa and Santa Cruz Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa, Summit Peak, on rock, *Knudsen 10877* (UCR).

Sarcogyne privigna auct. non (Ach.) A. Massal. Description: Knudsen and Standley 2007; Knudsen and Kocourková 2011. Substrate: calcareous and non-calcareous rock in drainages and seeps. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Sarcogyne privigna* is the current name applied to specimens which have a jointed margin with a disc that turns red in water and occur in western North America in drainages and seeps on

non-calcareous or calcareous rock. It is common in California and rare in CINP where it occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Dry Canyon, on rock, *Knudsen 10538* (UCR).

Sarcogyne regularis Körber, Syst. Lich. Germ.: 267 (1855). Description: Knudsen and Standley 2007. Substrate: calcareous substrate. World distribution: cosmopolitan. CINP distribution: SM.

PLATE 17, FIG. E.

NOTES. – *Sarcogyne regularis* is a strict calciphile usually with a pruinose apothecial disc. It is common throughout California on limestone and occasionally on calcareous sandstone. In CINP it is known from single collection on San Miguel Island

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on rock, *Knudsen 6777* (UCR).

†***Sarea resinae*** (Th. Fr.) Kuntze, Rev. Gen. Plant. 3: 515 (1898). Description: Nash 2007. Substrate: conifer resin. World distribution: Asia, Europe, North America. CINP distribution: SR.

NOTES. – *Sarea resinae* is a non-lichenized fungus that grows on the resin of conifer trees. It is probably frequent in California. In CINP it is known from single collection made on Santa Rosa Island.

Voucher. – **U.S.A. CALIFORNIA. SANTA BARBARA CO.:** Santa Rosa Island, below Black Mountain, on *Pinus muricata*, *Wetmore 73920* (MIN).

Schizopelte californica Th. Fr., Flora 58: 143 (1875). Description: Tehler 2002f. Substrate: rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Schizopelte californica* is frequent along the coast of central California and Baja California. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on rock, *Knudsen 11980* (UCR)

Schizopelte crustosa Ertz & Tehler, Fungal Diversity 49: 58 (2011). Description: Egea and Torrente 2002 (as *Sclerophyton californicum*). Substrate: bark, rocks. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Schizopelte crustosa* occurs along the California coast from San Luis Obispo County south to Baja California. It is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Christy Ranch, on rock, *W.A. Weber s.n. = Lich. Exs. COLO #661* (ASU; det. Egea).

Schizopelte parishii (Hasse) Ertz & Tehler, Fungal Diversity 49: 58 (2011). Description: Tehler 2002g (as *Hubbsia parishii*). Substrate: rock. World distribution: North America (California, Mexico). CINP distribution: EA, SB, SC, SM, SR, WA.

NOTES. – *Schizopelte parishii* occurs along the coast of California from Morro Rock south to Baja California. It is frequent on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Knudsen 11396* (UCR).

Scoliciosporum umbrinum (Ach.) Arnold, Flora 54: 50 (1871). Description: Ekman and Tønsberg 2004. Substrate: non-calcareous rock, occasionally bark, once on caudex of *Leptosyne gigantea*. World distribution: cosmopolitan. CINP distribution: SR.

PLATE 17, FIG. F.

NOTES. – *Scoliciosporum umbrinum* is infrequent in coastal California from Point Reyes south to the Channel Islands. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo Ridge, on rock, *Nimis s.n. [TSB—18508]* (ASU).

Seiophora californica (Sipman) Frøden, Lichenologist 36: 297. Description: Frøden et al. 2004 (as *Teloschistes californica*). Substrate: bark. World distribution: North America. CINP distribution: SB, SM, SR.

NOTES. – *Seiophora californica* occurs in California only on the Channel Islands where it is infrequent. It occurs on Santa Barbara, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Hill, on *Baccharis*, *Knudsen 6785.1* (UCR).

Sigridea californica (Tuck.) Tehler, Crypt. Bot. 3: 143 (1991). Description: Tehler 2002g. Substrate: bark. World distribution: North America. CINP distribution: SC, SR.

PLATE 18, FIG. A.

NOTES. – *Sigridea californica* is common on the Channel Islands and along the coast of California, growing on a variety of native trees as well as non-native *Eucalyptus* (one of few lichens found on the latter in California). It is common on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, the Ranch, on old corral fences, *Knudsen 8977* (UCR).

****Skyttea pertusariicola*** Diederich & Etayo, Lichen Flora of the Greater Sonoran Desert Region 2: 694 (2004). Description: Diederich and Etayo 2004. Substrate: *Pertusaria* species. World distribution: Europe, North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Skyttea pertusariicola* is only known in California from San Nicolas Island and in CINP on Santa Rosa Island. It is common on the latter island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, west rim of Cow Canyon, on *Pertusaria flavicunda*, *Knudsen et al. 10580* (UCR).

****Skyttea tavaresiae*** R. Sant., Etayo & Diederich in Diederich & Etayo, Lichenologist 32: 447 (2002). Description: Diederich and Etayo 2004. Substrate: *Pyrrhospora querneae*. World distribution: North America (California endemic). CINP distribution: SM.

NOTES. – *Skyttea tavaresiae* is common along the central coast of California, at least from Cambria to Monterey. It was reported from San Miguel Island based on an uncited specimen by Diederich and Etayo (2004).

No voucher was seen for this study.

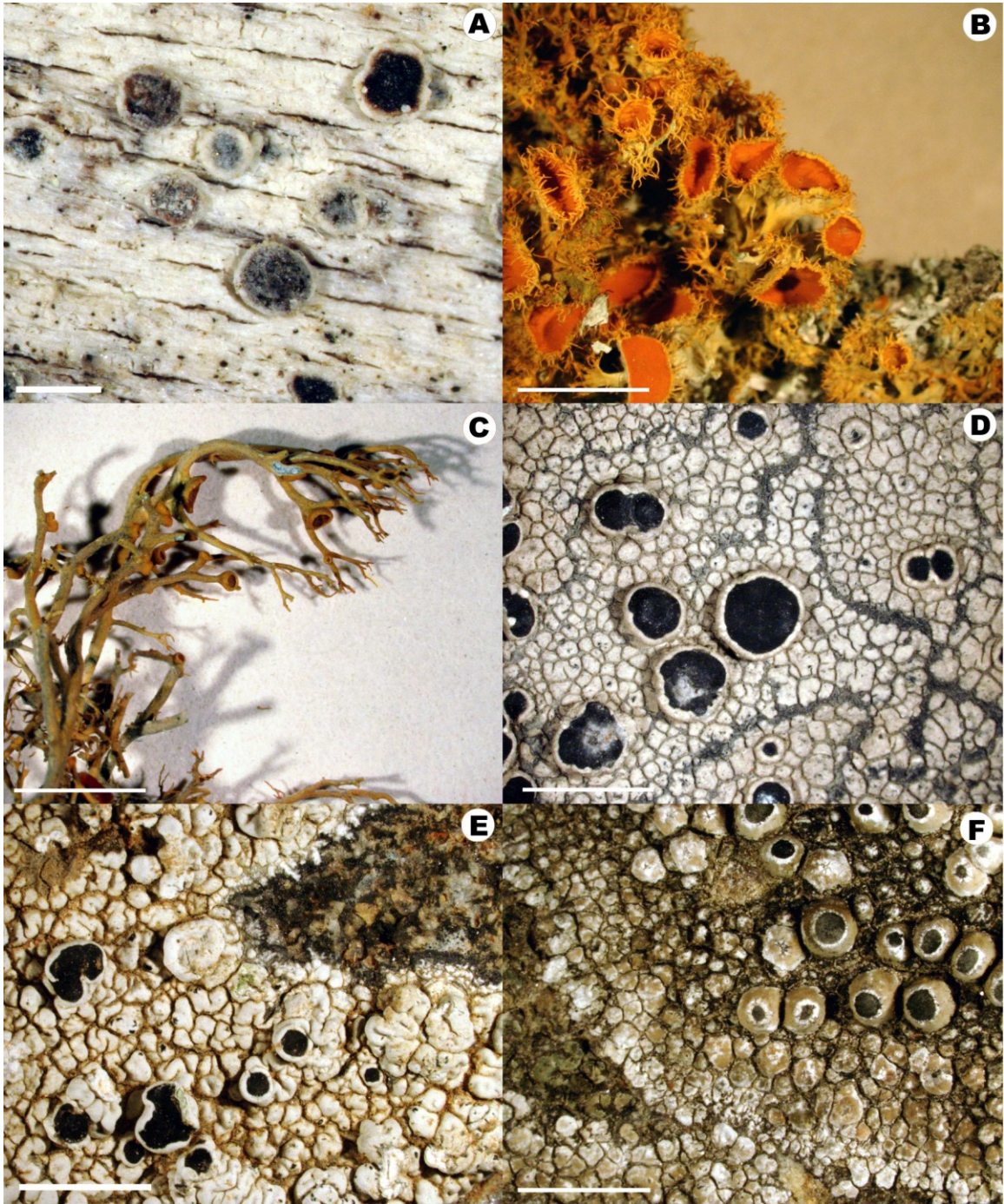


Plate 18, A, *Sigridea californica* (Knudsen 12184, UCR). B, *Teloschistes chrysophthalmus* (Knudsen 11438.1, UCR). C, *Teloschistes flavicans* (Knudsen 7665.1, UCR). D, *Tephromela atra* (Herre 970, NY). E, *T. nashii* (Nash 40132, NY). F, *Thelomma mammosum* (Lendemer 11388, NY). Scales = 2.0 mm in B-F; 0.5 mm in A.

Solenopsora crenata (Herre) Zahlbr., Catal. Lich Univers. 5: 755 (1928). Description: Ryan and Timdal 2002. Substrate: soil, rock. World distribution: North America. CIMP distribution: SB, SC.

NOTES. – *Solenopsora crenata* was originally described from the Santa Cruz Mountains where it was apparently common at the beginning of the 20th century based on the amount of collections by Herre in the Farlow Herbarium. Nonetheless it is rare in southern California. Within CIMP it is rare on Santa Barbara and Santa Cruz Islands where it occurs in biological soil crusts.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Barbara Island, on soil, *Bratt 9370* (SBBG; det. Ryan).

Sparria cerebriformis (Egea & Torrente) Ertz & Tehler, Fungal Diversity 49: 58 (2011). Description: Egea and Torrente 2002c (as *Sclerophyton cerebriformis*). Substrate: rock. World distribution: North America. CIMP distribution: SC, SR.

NOTES. – *Sparria cerebriformis* is rare along the coast of California from San Luis Obispo south to Baja California. It is rare in CIMP where it occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Fraser Point, on rock, *Nash 32417* (ASU; det. Egea & Torrente).

****Sphinctrina leucopoda*** Nyl., Flora 42: 44. (1859). Description: Tibell 2004. Substrate: usually on *Pertusaria* species. World distribution: Europe, North America. CIMP distribution: SC, SR.

NOTES. – The lichenicolous fungus *Sphinctrina leucopoda* is common in California. It occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on unknown host on bark, *Knudsen 11921* (UCR).

Staurothele areolata (Ach.) Lettau, Hedwigia 52: 84 (1912). Description: Thomson 2002. Substrate: calcareous and non-calcareous rock. World distribution: Asia, Europe, North America. CIMP distribution: SR.

NOTES. – *Staurothele areolata* is probably common in California though undercollected. In CIMP it is rare on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo Ridge, on rock, *Nash 32824* (ASU; det. Ryan).

Staurothele drummondii (Tuck.) Tuck., Genera Lich.: 257 (1872). Description: Thomson 2002. Substrate: calcareous and non-calcareous rock. World distribution: Asia, Europe, North America. CIMP distribution: SR.

NOTES. – *Staurothele drummondii* is frequent in southern California in a wide range of habitats from the Channel Islands to the Clark Mountains in the Mojave. It occurs on Santa Rosa Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on rock, *Knudsen et al. 10502* (UCR).

Sticta fuliginosa (Hoffm.) Ach., Lich. Meth. 280 (1803). Description: Galloway and Thomas 2004. Substrate: calcareous and non-calcareous rock. World distribution: cosmopolitan. CIMP distribution: SR.

NOTES. – *Sticta fuliginosa* is frequent in California. It is rare on Santa Rosa Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Burma Road, on rock and soil, *Bratt 11065* (SBBG).

****Stigmidium californicum*** K. Knudsen & Kocourk., *Biblio. Lichenol.* 105: 26-27 (2010). Description: Knudsen and Kocourková 2010c. Substrate: *Caloplaca* species on bark. World distribution: North America. CINP distribution: EA, SR.

NOTES. – The lichenicolous fungus *Stigmidium californicum* is only known in California from CINP. It grows on *Caloplaca stipitata* and *C. stanfordensis*. The species was described from East Anacapa Island. It occurs on East Anacapa and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, on *Caloplaca stanfordensis*, *Knudsen et al. 7794.2* (UCR).

****Stigmidium epistigmellum*** (Nyl. ex Vouaux) Kocourk. & K. Knudsen, *Bryologist* 112: 579 (2009). Description: Kocourková and Knudsen 2009a. Substrate: saxicolous coastal *Caloplaca* species. Distribution; North America (California, Baja Mexico). CINP distribution: EA, SB, SC, SM, SR, WA

NOTES. – *Stigmidium epistigmellum* is common along the southern and central California coast to San Luis Obispo County as well as on all the of north Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, beach near East Point, on areoles and apothecia of *Caloplaca bolacina*, *Knudsen et al. 8868* (UCR).

****Stigmidium epixanthum*** Hafellner in Hafellner et al., *Mycotaxon* 84: 317 (2002). Description: Triebel and Cáceres 2004. Substrate: yellow *Acarospora* species. World distribution: Africa, Australia, North and South America. CINP distribution: SR, WA.

NOTES. – The lichenicolous fungus *Stigmidium epixanthum* is common on *Acarospora socialis* in California. It occurs on West Anacapa and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on *Acarospora socialis*, *Knudsen 10775* (UCR).

****Stigmidium hesperium*** Kocourk., K. Knudsen & Diederich, *Czech Mycology* 61: 76 (2009). Description: Kocourková and Knudsen 2009b. Substrate: maritime *Caloplaca* species. World distribution: North America. CINP distribution: SR.

NOTES. – *Stigmidium hesperium* is common along the central California coast on *Caloplaca* species, including *C. coralloides*. It is rare on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on *Caloplaca coralloides*, *Knudsen 11375* (UCR).

****Stigmidium pumilum*** (Lett.) Matzer in Matzer and Hafellner, *Biblioth. Lichenol.* 37: 115 (1990). Description: Triebel and Cáceres 2004. Substrate: *Physcia* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Stigmidium pumilum* is apparently rare in California. It occurs on *Physcia phaea* on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Physcia phaea*, *Kocourková & Knudsen s.n.* (PRM 909121).

****Stigmidium squamariae*** (B. de Lesd.) Cl. Roux & Triebel, Bull. Soc. Linn. Provence 45: 511 (1994). Description: Triebel and Cáceres 2009. Substrate: *Lecanora muralis* group. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Stigmidium squamariae* is common in California on members of the *Lecanora muralis* group. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Clapp Springs, on *Lecanora muralis*, Knudsen et al. 10451 (UCR).

****Stigmidium xanthoparmeliarum*** Hafellner, Bull. Soc. Linn. Provence 44: 231 (1994). Description: Hafellner 1994. Substrate: *Xanthoparmelia* species. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Stigmidium xanthoparmeliarum* is common in California. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Xanthoparmelia* species, Kocourková & Knudsen s.n. (PRM 909688).

****Syzygospora physciacearum*** Diederich, Biblioth. Lichenol. 61: 38 (1996). Description: Diederich 2004d. Substrate: *Heterodermia*, *Physcia*, and *Physconia* species. World distribution: probably cosmopolitan. CINP distribution: SR, WA.

NOTES. – The lichenicolous fungus *Syzygospora physciacearum* is common in California. It occurs on West Anacapa and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on *Heterodermia namaquana*, Knudsen 10831 (UCR)

Teloschistes chrysophthalmus (L.) Th. Fr., Gen. Heterolich.: 51 (1860). Description: Fröden et al. 2004. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 18, FIG. B.

NOTES. – *Teloschistes chrysophthalmus* is frequent along the central California coast south to Baja California. It is frequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, South Point, on bark, Knudsen 11438.1 (UCR).

Teloschistes flavicans (Sw.) Norman, Conat. Praem. Gen. Lich.: 17. 1852. Description: Fröden et al. 2004. Substrate: bark, rarely rock. World distribution: tropical and subtropical regions. CINP distribution: SC, SM, SR.

PLATE 18, FIG. C.

NOTES. – *Teloschistes flavicans* is infrequent along the California coast from Monterey County south to Baja California. It is part of the tropical biogeographic unit in the California lichen biota and is frequent on San Miguel, Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on rock, Knudsen 7774 (UCR).

Tephromela atra (Hudson) Hafellner, Lich. Neotropici 297 (1983). Description: Nash et al. 2004. Substrate: non-calcareous & calcareous rock, rarely on wood. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

Plate 18, Fig. D.

NOTES. – *Tephromela atra* is common in California and in the southern portion of the state is often sympatric with *T. nashii* near the coast. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on Monterey shale, *Knudsen 11944* (UCR).

Tephromela nashii Kalb, Lich. Neotropici 523 (1991). Description: Nash et al. 2004. Substrate: rock. World distribution: North America. CINP distribution:

PLATE 18, FIG. E.

NOTES. – *Tephromela nashii* is a common coastal lichen that is distributed from the Channel Islands south to Baja California. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Water Canyon, on rock, *Knudsen 8673 & Kocourková* (UCR).

Thelenella muscorum (Th. Fr.) Vainio, Termesz. Füzetek 22: 341 (1899). Description: Mayrhofer 2002 (as *Chromatochlamys muscorum*). Substrate: mosses, non-calcareous rock. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Thelenella muscorum* is rare in California. It is known from single collection made on Santa Cruz Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Prisoners Harbor, on moss over rock, *Nash 32541* (ASU; det. Aptroot).

Thelomma mammosum (Hepp ex Hartung) A. Massal., Bot. Not. 129: 233 (1976). Description: Tibell and Ryan 2002c. Substrate: usually non-calcareous rock. World distribution: Africa, Europe, North America. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 18, FIG. F.

NOTES. – *Thelomma mammosum* is common along the coast of southern and central California. It occurs on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on rock, *Knudsen 7369 & Baguskus* (UCR).

Thelomma santessonii L. Tibell, Bot. Not. 129: 242 (1976). Description: Tibell & Ryan 2002c. Substrate: usually non-calcareous rock. World distribution: North America. CINP distribution: EA, SC, SM, SR, WA.

Plate 19, Fig. A.

NOTES. – *Thelomma santessonii* is sympatric with *T. mammosum* in California but usually has larger, more olive-colored verrucae and is UV+ white with divaricatic acid in the cortex. It is frequent on Anacapa, San Miguel, Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Water Canyon, on rock, *Knudsen 8676 & Kocourková* (UCR).

Thelopsis isiaca Stizenb., St. Gallisch naturw., Ges. 1893-1894: 262 (1895). Description: Tretiach et al. 2002. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Thelopsis isiaca* is rare in southern California, where it is currently only known from the Channel Islands. It is rare on Santa Cruz Island in CINP.

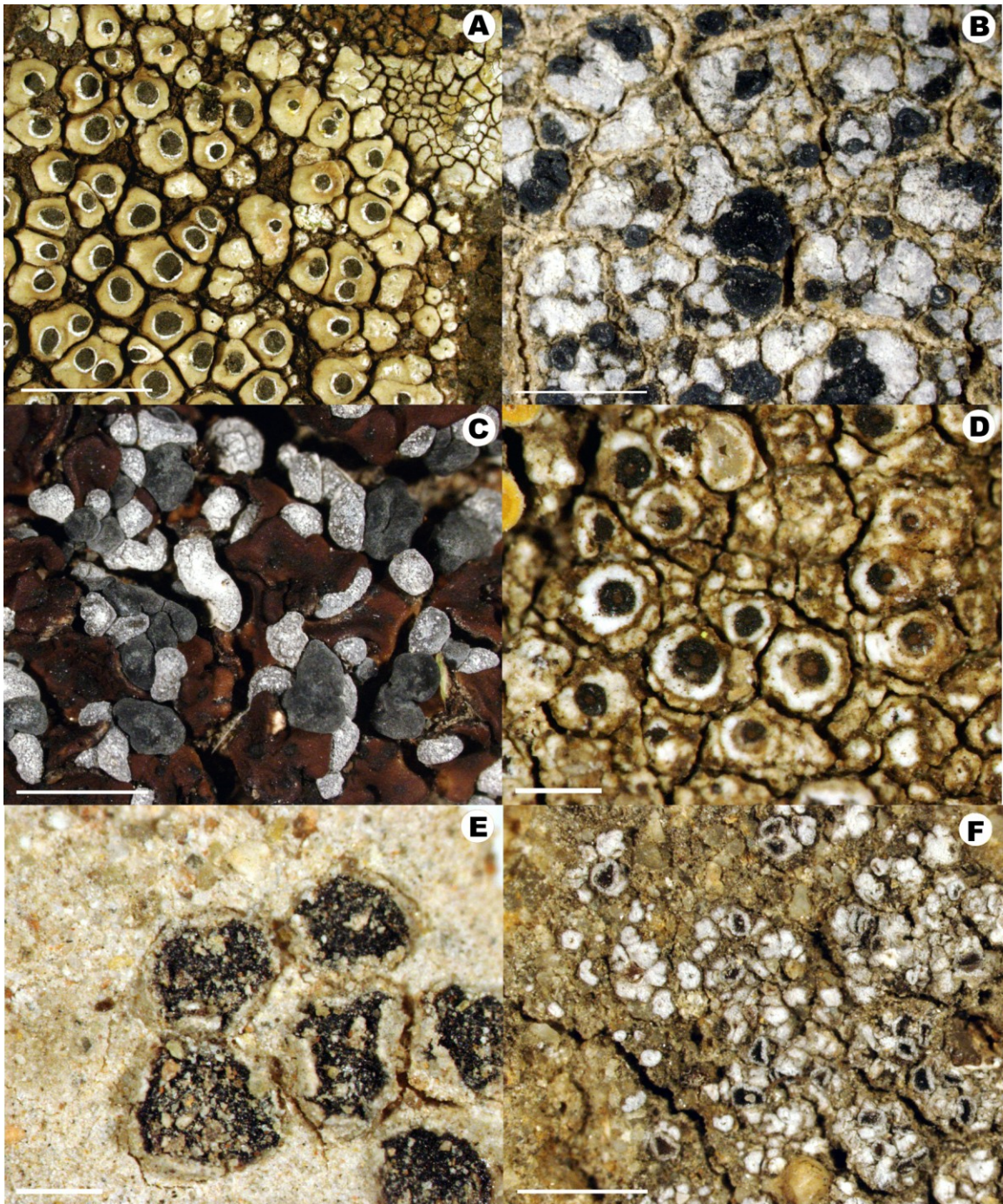


Plate 19, A, *Thelomma santessonii* (Nash 38262, NY). B, *Toninia aromatica* (Knudsen 10482, UCR). C, *Toninia sedifolia* (Lendemer 14874, NY). D, *Topelia californica* (Knudsen 10046, UCR). E, *Trapelia coarctata* (Herre 1200, NY). F, *Trapelia glebulosa* (Hasse s.n., NY). Scales = 2.0 mm in A; 1.0 mm in B and C; 0.5 mm in E and F.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Cañada del Puerto, on bark, *Bratt 3382* (UCR).

Toninia aromatica (Sm.) A. Massal., *Framm. Lichenogr.*: 24 (1855). Description: Timdal 2002c. Substrate: soil, rock. World distribution: cosmopolitan. CINP distribution: SB, SC, SM, SR.

PLATE 19, FIG. B.

NOTES. – *Toninia aromatica* is common in southern California, usually occurring in biological soil crusts, especially Riversidian crusts (Hernandez and Knudsen 2012). It occurs on San Miguel, Santa Barbara, Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Willow Canyon, on rock, *Knudsen 6908* (UCR).

Toninia nashii Timdal, *Lichen Flora of the Greater Sonoran Desert region*, 1: 493 (2002). Description: Timdal 2002c. Substrate: soil over sandstone. World distribution: North America (California endemic). CINP distribution: SM (endemic).

NOTES. – The crustose species *Toninia nashii* is only known from the type collection that was made on Green Mountain on San Miguel Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, soil over sandstone, *Nash 41446* (ASU [holotype missing]; O [holotype(?) or, isotype]).

Toninia ruginosa* ssp. *pacifica Timdal, *Oper. Bot.* 110: 90 (1991). Description: Timdal 2002c. Substrate: soil. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Toninia ruginosa* ssp. *pacifica* occurs along the coast of California inland to Arizona. It has larger squamules than *T. ruginosa* subsp. *ruginosa* and ascospores that usually have less septa. It is infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine Forest, on volcanic breccia, *Knudsen 7431.1 & Baguskus* (UCR).

Toninia sedifolia (Scop.) Timdal, *Oper. Bot.* 110: 93 (1992). Description: Timdal 2002c. Substrate: soil and calcareous rock. World distribution: cosmopolitan. CINP distribution: SM.

PLATE 19, FIG. C.

NOTES. – *Toninia sedifolia* is a common calciphile in California. It occurs in biological soil crusts on San Miguel Island and in the illustration presented here is growing with *Clavascidium lacinulatum*.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on soil, *Knudsen 6675* (UCR).

****Toninia subdispersa*** (Nyl. ex Hasse) K. Knudsen, *Mycotaxon* 101: 84 (2007). Description: Timdal 2002c (as *T. talprum*). Substrate: *Lecania* species. World distribution: Europe, North America. CINP distribution: EA, SC, SM, SR, WA.

NOTES. – *Toninia subdispersa* is a lichenicolous fungus that is common on *Lecania* species in California, especially on the Channel Islands. It occurs on Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Carrington Point, on *Lecania franciscana*, *Knudsen et al. 8843.1* (UCR).

****Toninia subtalparum*** v.d. Boom, Lichen Flora of the Greater Sonoran Desert Region 2: 708 (2004). Description: v.d. Boom 2004. Substrate: *Lecania dudleyi*. World distribution: North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Toninia subtalparum* is apparently restricted to *Lecania dudleyi*. It should not be confused with the common *T. subdispersa* which also occurs on *L. dudleyi* as well as other species of the same genus. It is known in California only from Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Brockway Point, on *Lecania dudleyi*, *Knudsen et al.* 7741 (UCR).

Topelia californica P.M. Jørg. & Vězda, Beih. Nova Hedwig. 79: 504 (1984). Description: Nash and Nimis 2002. Substrate: bark. World distribution: North America (California endemic). CINP distribution: SC, SR.

PLATE 19, FIG. D.

NOTES. – *Topelia californica* is endemic to California, occurring along the central California coast on native phorophytes. It is one of the few corticolous species found also growing on non-native *Eucalyptus*. The saxicolous species *T. gyalectodes* (Nyl.) B.D. Ryan & Lumbsch is only known from the type collection which was made in Malibu Canyon in the Santa Monica Mountains. It may be discovered on the Channel Islands. *Topelia californica* occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Ranch, on *Eucalyptus*, *Knudsen* 8975.2 (UCR).

Tornabea scutellifera (With.) J.R. Laundon, Lichenologist 16: 226 (1984). Description: Nimis and Tretiach 2002. Substrate: bark, rock. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Tornabea scutellifera* is only known in California from Santa Rosa Island where it is rare.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on sandstone, *Wetmore* 73683 (MIN).

Trapelia coarctata (Turner ex Small) M. Choisy in Werner, Bull. Soc. Sc. Nat. Maroc 12: 160 (1932). Description: Lumbsch and Kainz 2004. Substrate, rock, bricks, soil. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 19, FIG. E.

NOTES. – *Trapelia coarctata* is infrequent in California but may be undercollected. The illustration presented here shows the emergent apothecia with ragged thalline margins. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Outhouse Canyon, on consolidated soil, *Knudsen* 7631 (UCR).

Trapelia glebulosa (Sw.) J.R. Laundon, Herzogia 2: 508 (1973). Description: Lumbsch and Kainz 2004 (as *Trapelia involuta*). Substrate, rock, pebbles, soil, wood. World distribution: cosmopolitan. CINP distribution: SC, SR, WA.

PLATE 19, FIG. F.

NOTES. – *Trapelia glebulosa* is common in California and is often a pioneer species dominating newly available substrates. It is often a component in biological soil crusts (Hernandez and Knudsen 2012). The species occurs on West Anacapa, Santa Cruz, and Santa Rosa Islands in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Burma Road, on soil, *Knudsen et al.* 7782.3 (UCR).

Trapeliopsis flexuosa (Fr.) Coppins & P. James, *Lichenologist* 16: 258 (1984). Description: Printzen and McCune 2004. Substrate: decorticated wood, scrap lumber and fence posts, burnt wood. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

PLATE 20, FIG. A.

NOTES. – *Trapeliopsis flexuosa* is common in California on old wood. It is often sterile, and is easily identified by the usually abundant soralia of a darker color than the pale thallus. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on redwood fence, *Nash* 32994 (ASU; det. Printzen).

Trapeliopsis glaucopholis (Nyl. ex Hasse) Printzen & McCune, *Lichen Flora of the Greater Sonoran Desert Region* 2: 539 (2004). Description: Printzen and McCune 2004. Substrate: soil, decaying sandstone. World distribution: North America. CINP distribution: SC, SR.

PLATE 20, FIG. B.

NOTES. – *Trapeliopsis glaucopholis* is common in biological soil crusts or on soil over rock on outcrops in California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Rosa Island, off Telephone Road, on soil, *Knudsen et al.* 7699 (UCR).

****Tremella dendrographae*** Diederich & Tehler, *Biblioth. Lichenol.* 61: 74 (1996). Description: Diederich 2004e. Substrate: *Dendrographa* species. World distribution: North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Tremella dendrographae* is frequent on *Dendrographa* species along the California coast. It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Rosa Island, Lobo Canyon, on *Dendrographa minor*, *Nash* 32972 (ASU; det. Diederich.)

****Tremella nieblae*** Diederich & van den Boom in Diederich, *Opuscula Philolichenum* 4: 16 (2007). Description: Diederich 2007e. Substrate: *Niebla cephalota*, *N. homalea*. World distribution: North America. CINP distribution: SR.

NOTES. – The lichenicolous fungus *Tremella nieblae* is frequent along the central and northern coast of California. It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Rosa Island, Cherry Canyon, on *Niebla cephalota*, *Knudsen* 7837 (UCR).

****Tremella parmeliarum*** Diederich, *Biblioth. Lichenol.* 61: 125 (1996). Description: Diederich 2004e. Substrate: *Parmotrema* species. World distribution: cosmopolitan. CINP distribution: SR, WA.

NOTES. – *Tremella parmeliarum* is infrequent in California. It occurs on West Anacapa and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Rosa Island, hills above Beecher Bay, on *Parmotrema* species, *Knudsen* 7504.5

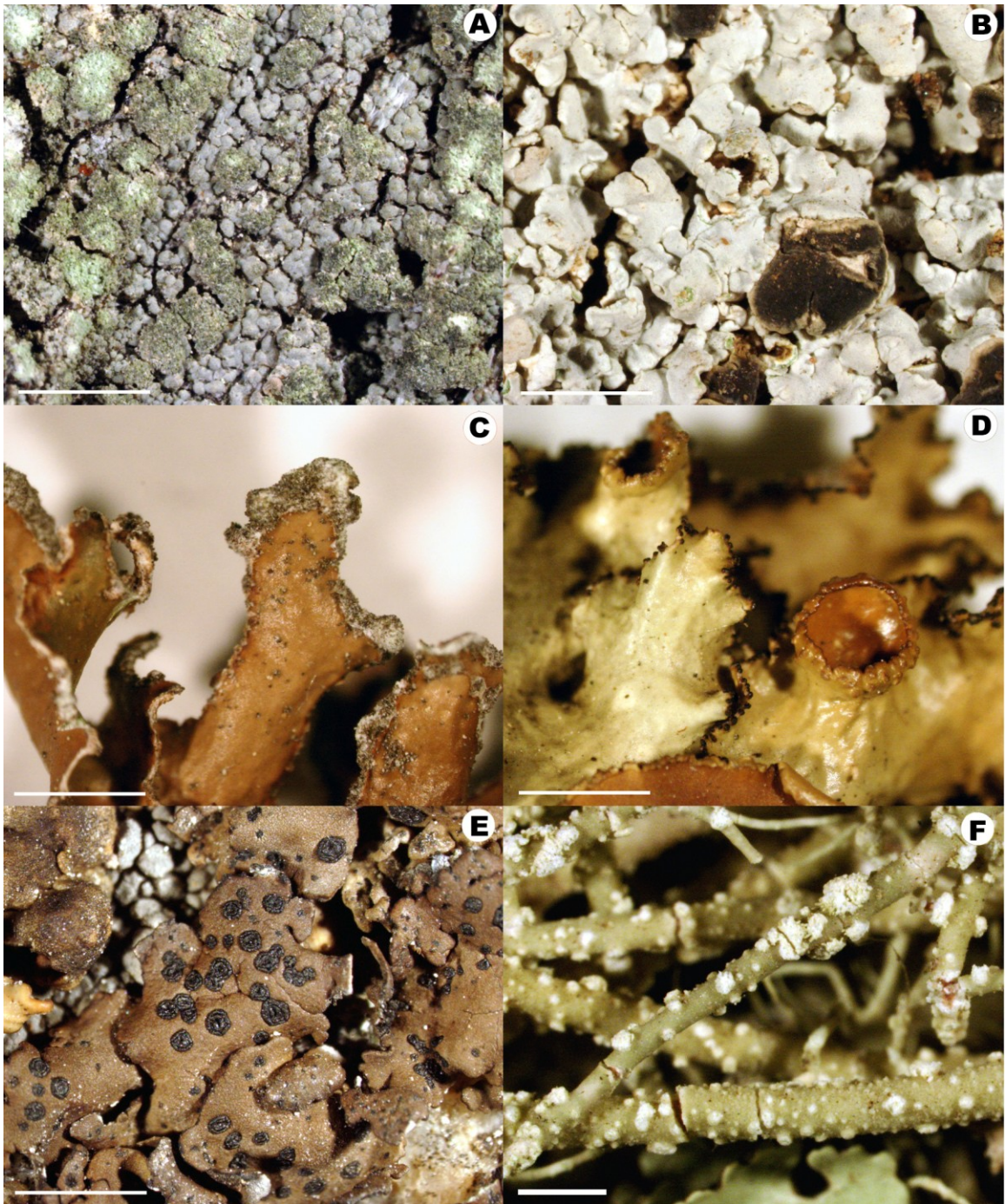


Plate 20, A, *Trapelia flexuosa* (Lendemer 19750, NY). B, *Trapeliopsis glaucopholis* (Knudsen 11387, UCR). C, *Tuckermanopsis chlorophylla* (Lendemer 19589, NY). D, *Tuckermanopsis orbata* (Herre s.n., NY). E, *Umbilicaria phaea* (Lendemer 14943, NY). F, *Usnea ceratina* (Buck 53927, NY). Scales = 1.0 mm in A-E; 0.5 in F.

****Tremella ramalinae*** Diederich, Biblioth. Lichenol. 61: 152 (1996). Description: Diederich 2004e. Substrate: *Ramalina* species. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Tremella ramalinae* is infrequent in California where it occurs on *Ramalina* species. It occurs on Santa Cruz Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Cruz Island, on *Ramalina pollinaria*, Tucker 35762-C (ASU).

Tuckermanopsis chlorophylla (Willd.) Hale in Egan, Bryologist 96: 164 (1987). Description: Esslinger 2004b. Substrate: bark, rarely rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 20, FIG. C.

NOTES. – *Tuckermanopsis chlorophylla* is common in California, especially in the Sierra Nevada Mountains. It is rare on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, close to radar station, on soil and rock, Ryan 31088 (ASU; det. Esslinger).

Tuckermanopsis orbata (Nyl.) M.J. Lai, Quart. J. Taiwan Mus. 33: 226 (1980). Description: Esslinger 2004b. Substrate: bark, rarely rock. World distribution: North America. CINP distribution: SC, SR.

PLATE 20, FIG. D.

NOTES. – *Tuckermanopsis orbata*, like *T. chlorophylla*, is common in California, especially in the Sierra Nevada Mountains, but it is rare on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, north slope of Black Mountain, on dead wood of *Pinus muricata*, Baguskus s.n. (UCR).

Umbilicaria phaea Tuck., Lich. Calif.: 15 (1866). Description: McCune and Geiser 2009. Substrate: non-calcereous rock. World distribution: North and South America. CINP distribution: SC, SR.

PLATE 20, FIG. E.

NOTES. – *Umbilicaria phaea* is common throughout California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, trail to High Mountains, on basalt, Knudsen 11985 (UCR).

Usnea brasiliensis (Zahlbr.) Motyka, Lichen Gen. Usnea Stud. Monogr. Pars System. 2: 486 (1938). Description: Clerc 2007 (as *Usnea cornuta* subsp. *brasiliensis*). Substrate: bark, wood, rarely rock. World distribution: North and South America. CINP distribution: SC.

NOTES. – *Usnea brasiliensis* is rare along southern California coast. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, on bark, Clerc 34404 & Bratt (ASU).

Usnea brattiae P. Clerc, Lichen Flora of the Greater Sonoran Desert Region 3: 310 (2007). Description: Clerc 2007. Substrate: bark. World distribution: North America. CINP distribution: SC, SM, SR.

NOTES. – *Usnea brattiae* is infrequent from Santa Ynez Valley south along the California coast. It was named for the California lichen collector C. Bratt. The species occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on *Baccharis*, Knudsen 6754 (UCR).

Usnea ceratina Ach., Lich. Univ.: 619 (1810). Description: Clerc 2007. Substrate: bark. World distribution: Asia, Europe, North and South America. CINP distribution: SC, SR.

PLATE 20, FIG. F.

NOTES. – *Usnea ceratina* is common along the central California coast. It is common on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, summit of Black Mountain, on *Quercus tomentella*, Knudsen et al. 7685.1 (UCR)

Usnea cornuta Körber, Parerga Lichenol.: 2 (1859). Description: Clerc 2007. Substrate: bark, wood, rarely rock. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Usnea cornuta* is frequent on the central coast of California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, along Burma Road, on rock, Knudsen 7776.1 (UCR).

Usnea dasaea Stirton, Scott. Naturalist (Perth) 6: 104 (1881). Description: Clerc 2007. Substrate: bark, wood, rarely rock. World distribution: cosmopolitan. CINP distribution: SC, SM, SR.

NOTES. – *Usnea dasaea* is rare along the California coast, but is frequent on the Channel Islands. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Hill, on *Baccharis*, Knudsen 6786.2 (UCR; det. Lendemer).

Usnea esperantiana P. Clerc, Candollea 47: 514 (1992). Description: Clerc 2007. Substrate: bark, wood, rarely rock. World distribution: Africa, Europe, North and South America. CINP distribution: SC, SR.

PLATE 21, FIG. A.

NOTES. – *Usnea esperantiana* is frequent along the central coast and on the Channel Islands. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Soledad, on *Quercus tomentella*, Knudsen 7769 (NY, UCR; det. Lendemer).

Usnea flavocardia Räsänen, Revista Universitaria (Santiago) 21: 139 (1936). Description: Clerc 2007. Substrate: bark, rock. World distribution: Africa, Europe, North and South America. CINP distribution: SC, SM, SR, WA.

NOTES. – The red-spotted species *Usnea flavocardia* is frequent along the California coast. It occurs on West Anacapa, San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, on *Baccharis*, Knudsen et al. 8715 (NY, UCR).



Plate 21, A, *Usnea esperantiana* (Knudsen 8781, NY). B, *U. fragilescens* (Knudsen 8536, NY). C, *U. fulvoreagens* (Lendemer 5724, NY). D, *U. hirta* (Lendemer 14775 NY). E, *U. lapponica* (Knudsen 6703, UCR). F, *U. rubicunda* (Lendemer 5782, NY). Scales = 1.0 mm in B, D, F; 0.5 mm in A, C, E.

Usnea fragilescens Lynge, Vid. Selsk. Skr. I. M. –N. Kl. 7: 230 (1921). Description: Clerc 2007. Substrate: bark. World distribution: Europe, North and South America. CINP distribution: SC, SR.

Plate 21, Fig. B.

NOTES. – *Usnea fragilescens* is common along the central coast of California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, summit of Black mountain, on *Quercus tomentella*, Knudsen 7691 (UCR; det. Lendemer).

Usnea fulvoreagens (Räsänen) Räsänen, Lich. Fenn. Exs. No. 13 (1935). Description: Clerc 2007. Substrate: bark. World distribution: Europe, North America. CINP distribution: SC.

PLATE 21, FIG. C.

NOTES. – *Usnea fulvoreagens* is especially common along the central California coast. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Western Pines, on oak, Bratt 3300-B (ASU; det. Clerc).

Usnea glabrata (Ach.) Vainio, Ann. Acad. Sci. Fenn., Ser. A4, 6: 7 (1915). Description: Clerc 2007. Substrate: bark. World distribution: cosmopolitan. CINP distribution: SC, SR.

NOTES. – *Usnea glabrata* is infrequent along the California coast. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, along Ridge Road, on *Ribes*, Bratt 1478 (ASU; det. Clerc).

Usnea hirta (L.) F.H. Wigg., Prim. Fl. Holsat.: 91 (1780). Description: Clerc 2007. Substrate: bark, rarely rock. World distribution: cosmopolitan. CINP distribution: SC.

PLATE 21, FIG. D.

NOTES. – *Usnea hirta* is frequent in California, especially in the mountains. It occurs on Santa Cruz Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Centinella gate, on *Quercus agrifolia*, Bratt s.n. (ASU; det. Clerc).

Usnea lapponica Vainio, Meddeland. Soc. Fauna Fl. Fenn. 48: 173 (1925). Description: Clerc 2007. Substrate: bark. World distribution: Asia, Europe, North America. CINP distribution: SC, SM, SR.

Plate 21, Fig. E.

NOTES. – *Usnea lapponica* is infrequent in California especially in the mountains. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Black Mountain, on *Quercus pacifica*, Clerc s.n. & Bratt (ASU).

Usnea mutabilis Stirton, Naturalist (Perth) 6: 107 (1881). Description: Clerc 2007. Substrate: bark. World distribution: Europe, North America. CINP distribution: SC.

NOTES. – *Usnea mutabilis* occurs on the central coast of California as well as on the Channel Islands. It is rare on the north Channel Islands, known only from Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Christi Pines, on *Pinus muricata*, *Clerc s.n. & Bratt* (ASU).

Usnea rubicunda Stirton, *Naturalist* (Perth) 6: 102 (1881). Description: Clerc 2007. Substrate: bark. World distribution: Asia, Africa, Europe, North and South America. CIMP distribution: SC, SM, SR.

PLATE 21, FIG. F.

NOTES. – *Usnea rubicunda* is common along the central California coast. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on *Baccharis*, *Knudsen 6713* (NY, UCR; det. Lendemer).

Usnea scabrata Nyl., *Flora* 58: 103 (1875). Description: Clerc 2007. Substrate: bark. World distribution: Asia, Europe, North America. CIMP distribution: SC.

NOTES. – *Usnea scabrata* is common on the central California coast. It occurs on Santa Cruz Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Centinela Gate, on *Quercus agrifolia*, *Bratt 1049* (ASU; det. Clerc).

Usnea subfloridana Stirton, *Naturalist* (Perth) 6: 294 (1882). Description: Clerc 2007. Substrate: bark. World distribution: Asia, Africa, Europe, North America. CIMP distribution: SC, SR.

NOTES. – *Usnea subfloridana* is common in California. It occurs on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, above Chinese harbor, on *Pinus muricata*, *Knudsen 8533* (NY, UCR; det. Lendemer).

Usnea subscabrosa Nyl. ex Motyka, *Lich. Gen. Usnea Stud. Monogra. Pars. Syst.* 2: 313 (1937). Description: Clerc 2007. Substrate: bark. World distribution: Africa, Europe, North America. CIMP distribution: SC.

NOTES. – *Usnea subscabrosa* is relatively rare in California, occurring from San Diego to Point Reyes. It occurs on Santa Cruz Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Christy Pines, on *Pinus muricata*, *Clerc s.n. & Bratt* (ASU).

Vahliella californica (Tuck.) P.M. Jørg., *Lichenologist* 40(3): 223 (2008). Description: Jørgensen 2004a (as *Fuscopannaria californica*). Substrate: soil. World distribution: North America. CIMP distribution: SC.

NOTES. – *Vahliella californica* reaches the southern limit of its range in southern California and actually appears to be rare in California, despite its name. Like many cyanolichens, it is more frequent from northern California to British Columbia. In CIMP it is known from a single collection that was made on Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, along the ridge to Ragged Mountain, *Nash 32380* (ASU; det. Jørgensen).

Vahliella labrata (P.M. Jørg.) P.M. Jørg., *Lichenologist* 40: 224 (2008). Description: Jørgensen 2005 (as *Fuscopannaria labrata*). Substrate: soil, rock. World distribution: North America (California endemic). CIMP distribution: SC.

NOTES. – *Vahliella labrata* was described from two collections made by C. Bratt on Santa Cruz Island, both from Coches Prietos. It is also rare in the Santa Monica Mountains, where it is known from two sterile collections, one found in shade in Malibu Canyon on rock, the other on soil over volcanic rock in the Conejo Open Space (Knudsen 7145, 10696, UCR). The species is easily identified by its blue soredia in labriform soralia with the underside of lobes a beautiful blue color.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Coches Prietos, Bratt 6257 (SBBG; det. Jørgensen).

Vahliella leucophaea (Vahl.) P.M. Jørg., Lichenologist 40: 224 (2008). Description: Jørgensen 2004a (as *Fuscopannaria leucophaea*). Substrate: soil. World distribution: temperate northern hemisphere. CINP distribution: SC.

NOTES. – *Vahliella leucophaea* is a common montane species in western North America. It occurs in biological soil crusts on Santa Barbara and Santa Cruz Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Central Valley, on soil, Bratt 3463 (SBBG).

Verrucaria adelminienii Zschacke, Rabenh. Krypt.-Flora 9: 160 (1933). Description: Breuss 2007. Substrate: calcareous rock. World distribution: Europe and North America. CINP distribution: SR.

NOTES. – *Verrucaria adelminienii* is known in California only from Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on Monterey shale, Knudsen 7356 & Baguskus (UCR).

Verrucaria aspecta Breuss, Lichen Flora of the Greater Sonoran Desert Region 3: 343 2007. Description: Breuss 2007. Substrate: non-calcareous rock. World distribution: North America (California endemic). CINP distribution: SR (endemic).

NOTES. – *Verrucaria aspecta* is endemic to Santa Rosa Island where it is apparently rare.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, top of East Point, on rock, Knudsen et al. 8840.2 (UCR).

Verrucaria calkinsiana Servit, Stud. Bot. Čech. 11: 107 (1950). Description: Breuss 2007. Substrate: non-calcareous rock, sandstone. World distribution: North America. CINP distribution: SM, SR, WA.

PLATE 22, FIG. B.

NOTES. – *Verrucaria calkinsiana* occurs in southern California in the Santa Ana and Santa Monica Mountains and on West Anacapa, San Miguel, and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on sandstone, Nash 41448 (ASU; det. Breuss).

Verrucaria cetera Breuss, Ann. Naturhist. Mus. Wien 100B: 674 (1998). Description: Breuss 2007. Substrate: juvenile parasite on *Staurothele*, developing an independent thallus, on calcareous rock and sandstone. World distribution: North America. CINP distribution: SM.

NOTES. – *Verrucaria cetera* is rare in California where it is known from only one verified collection from San Miguel Island.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on sandstone, Nash 41414 (ASU; det. Breuss).

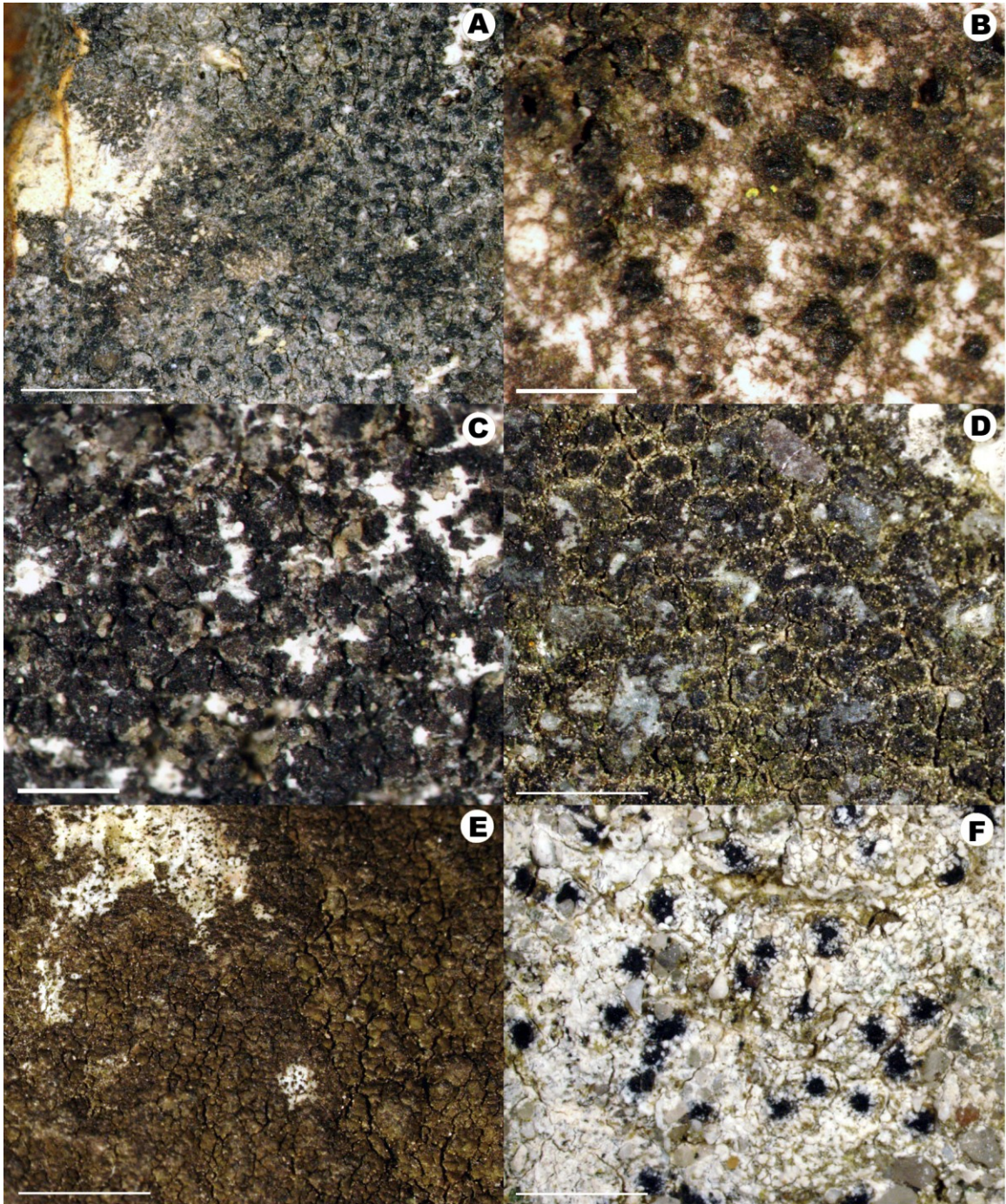


Plate 22, A, *Placidium boccanum* (Knudsen 10455.2, UCR). B, *Verrucaria calkinsiana* (Knudsen 5611, UCR). C, *V. furfuracea* (Knudsen 6702, UCR). D, *V. fusca* (Knudsen 6134, UCR). E, *V. fuscoatroides* (Knudsen 6177.2, UCR). F, *V. muralis* (Lendemer 6699, NY). Scales = 1.0 mm in A, B, D-F; 0.5 mm in C.

Verrucaria floerkeana Dalla Torre & Sarnth., Die Flechten von Tirol, Vorarlberg und Liechtenstein: 524 (1902). Description: Breuss 2007. Substrate: non-calcareous rock and sandstone. World distribution: Europe, North America. CINP distribution: SC, SM.

NOTES. – *Verrucaria floerkeana* occurs along the central coast of California and on the Channel Islands. It occurs on San Miguel and Santa Cruz Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, the Gangplank, on sandstone, *Nash 41098* (ASU; det. Breuss).

Verrucaria furfuracea (B. de Lesd.) Breuss, Lichen Flora of the Greater Sonoran Desert Region 3: 354 (2007). Description: Breuss 2007. Substrate: calcareous rock, concrete. World distribution: Europe, North America. CINP distribution: SM, SR.

PLATE 22, FIG. C.

NOTES. – *Verrucaria furfuracea* is frequent in southern California. It can be found on concrete and is often sterile. The species is abundant on caliche on San Miguel Island and also occurs on Santa Rosa Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, trail to Caldwell Point, on exposed caliche, *Knudsen 6728* (UCR).

Verrucaria fusca Pers. ex Ach., Lich. Univ.: 291 (1810). Description: Breuss 2007. Substrate: calcareous rock, non-calcareous rock in seasonal streams. World distribution: Europe, North America. CINP distribution: SR.

PLATE 22, FIG. D.

NOTES. – *Verrucaria fusca* is common in southern and central California especially on drainages, seeps, and on rocks in seasonal streams. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sandy Point, *Wetmore 73645* (ASU; det. Breuss).

Verrucaria fuscoatroides Servít, Sborn. Národ. Mus. Praha 5 B, 9, Bot. 3: 25 (1949). Description: Breuss 2007. Substrate: non-calcareous or slightly calcareous rock. World distribution: Europe, North America. CINP distribution: SR.

PLATE 22, FIG. E.

NOTES. – *Verrucaria fuscoatroides* has a conspicuous brown thallus and is common in southern California. In her excellent revision of *Verrucaria* in Poland, Krzewicka (2012) suggests that *V. fuscoatroides* may be a synonym of *V. nigroumbrina* (A. Massal.) Servít. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Knudsen 7590* (UCR).

Verrucaria mimicrans Servít, Stud. Bot. Čech. 11: 114 (1950). Description: Breuss 2007. Substrate: limestone and sandstone. World distribution: Europe, North America. CINP distribution: SM, SR.

NOTES. – *Verrucaria mimicrans* is infrequent in southern and central California. It occurs on San Miguel and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Island, on caliche, *Nash 41131* (ASU; det. Breuss).

Verrucaria muralis Ach., Meth. Lich.: 115 (1803). Description: Breuss 2007. Substrate: calcareous rock. World distribution: Africa, Asia, Australia, Europe, North America. CINP distribution: SM, SR.

PLATE 22, FIG. F.

NOTES. – *Verrucaria muralis* is frequent on calcareous substrates in western North America. It occurs on caliche on San Miguel and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, Green Mountain, on sandstone, *Nash 41450* (ASU; det. Breuss.)

Verrucaria othmarii K. Knudsen & L. Arcadia, nom. nov. pro. *V. rupicola* (B. de Lesd.) Breuss non *V. rupicola* (L.) Humb.
Mycobank# MB 801798.

Endopyrenium rupicola B. de Lesd., Ann. Cryptog. Exot. 5: 100 (1932). TYPE: **U.S.A. NEW MEXICO:** Environs de Las Vegas, calcicole, *A. Brouard s.n.* (hb. B de Lesdain [n.v.], presumed destroyed). NEOTYPE: **U.S.A. CALIFORNIA.** VENTURA CO.: Point Magu State Park, Sycamore Canyon, 34°8'3"N 118°58'54"W, 173 m, on sandstone boulder, ii.vi.2009, *Knudsen 11234 & Sagar* (LI, neotype [**designated here!**]; UCR, isoneotype).

Dermatocarpon rupicola (B. de Lesd.) Zahlbr., Catal. Lich. Univ. 10: 65 (1938).

Verrucaria rupicola (B. de Lesd.) Breuss, Lichen Flora of the Greater Sonoran Desert Region, 3: 372 (2007[2008]), *nom. illeg.* non *Verrucaria rupicola* (L.) Humb., Fl. Friberg. 44 (1793).

ETYMOLOGY. – The species is named in honor of Othmar Breuss (b. 1955) for his outstanding contributions to the study of Verrucariaceae and in thanks for his continuing assistance in our study of the California lichen biota.

NOTES. – An neotype is selected for *Verrucaria othmarii* because, as with many Brouard types in the herbarium of Bouly de Lesdain, it is presumed to have been destroyed during the bombing of Dunkirk in World War II. For a description of the taxon refer to Breuss 2007 (as *Verrucaria rupicola*).

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Scorpion Canyon, on shale, *Knudsen 11941.1* (UCR).

Verrucaria papillosa Ach., Lich. Univ.: 286 (1810). Description: Breuss 2007. Substrate: calcareous rock. World distribution: Asia, Europe, Tasmania, North America. CINP distribution: SM, SR.

NOTES. – *Verrucaria papillosa* is frequent in western North America. It occurs on San Miguel and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Nidever Canyon, on caliche, *Knudsen 6879* (UCR).

Verrucaria rufofuscella Servít, Stud. Bot. Čech. 7: 79 (1950). Description: Breuss 2007. Substrate: sandstone and shale. World distribution: Europe, North America. CINP distribution: SR.

PLATE 23, FIG. A.

NOTES. – *Verrucaria rufofuscella* has a distinctive rugulose reddish brown areolate thallus and is apparently infrequent in California. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Quemada Canyon, *Knudsen 8681 & Kocourková* (UCR)

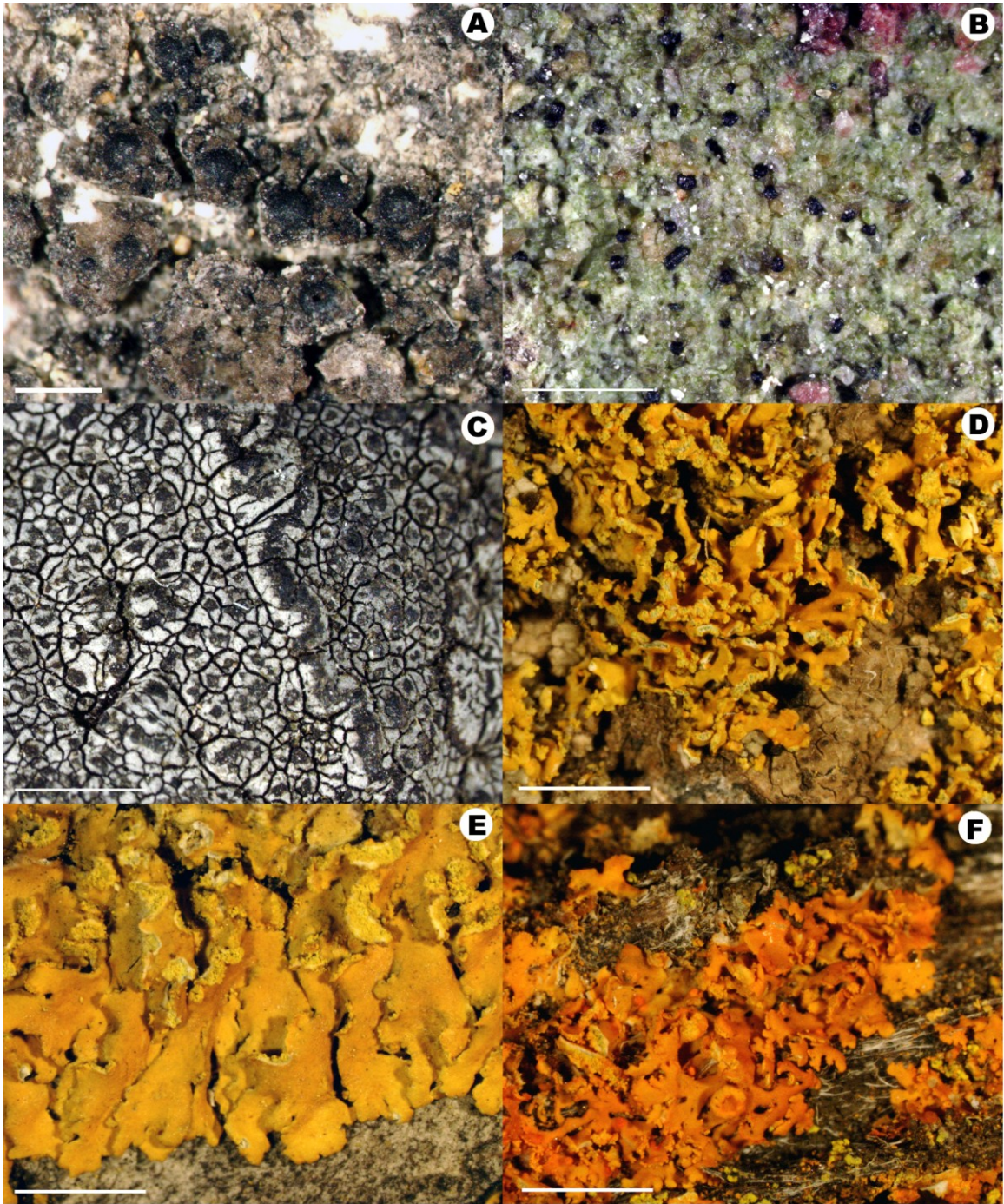


Plate 23, A, *Verrucaria rufofuscella* (Knudsen 3982, UCR). B, *V. sandstedei* (Knudsen 11373, UCR). C, *V. subdivisa* (Knudsen 11530, UCR). D, *Xanthomendoza candelaria* (Knudsen 10916, UCR). E, *X. fallax* (Follett s.n., NY). F, *X. fulva* (Conrad 6800, NY). Scales = 1.0 mm in B-F; 0.5 mm in A.

Verrucaria sandstedei B. de Lesd., Bull. Soc. Bot. Fr. 58: 662 (1911). Description: Orange et al. 2009. Substrate: non-calcareous rock. serpentine. World distribution: Europe, North America. CINP distribution: SR.

PLATE 23, FIG. B.

NOTES. – *Verrucaria sandstedei* is an intertidal lichen that is infrequent along the California coast from Orange County to Point Lobos (Knudsen and Kocourková 2010b). It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Lobo Canyon, on rock, *Knudsen 11373* (UCR).

Verrucaria subdivisa Breuss, Lichen Flora of the Greater Sonoran Desert Region 3: 373 (2007). Description Breuss 2007. Substrate: non-calcareous rock. World distribution: North America. CINP distribution: EA, SB, SC, SM, SR, WA.

Plate 23, Fig. C.

NOTES. – *Verrucaria subdivisa* is a gray pruinose species that is common along the California coast. It is common on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, road to Carrington, on caliche, *Knudsen 8871 & Chaney* (UCR).

Verrucaria viridula (Schrader) Ach., Method. Lich. Suppl.: 16 (1803). Description: Breuss 2007. Substrate: calcareous and non-calcareous rock. World distribution: Africa, Europe, North America. CINP distribution: SR.

NOTES. – *Verrucaria viridula* is apparently infrequent in California. Older specimens identified using this name often represent other species. It occurs on Santa Rosa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on exposed petrified oyster bed, *Knudsen et al. 10516* (UCR).

**Vouauxiella lichenicola* (Linds.) Petr. & Sydow, Beih. Repert. Nov. Spec. Regeni Veg. 42: 484 (1927). Description: Diederich 2004f. Substrate: *Lecanora* species. World distribution: Africa, Europe, North America. CINP distribution: SR.

NOTES. – *Vouauxiella lichenicola* occurs on *Lecanora* species and is frequent in California (Kocourková et al. 2012). It is only known from Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO. Santa Cruz Island, Sauces Gate area, on *Lecanora*, *Tucker 35848* (SBBG; det. Diederich).

Wahlenbergiella striatula (Wahlenb.) Gueidan & Thüs, Taxon 58(1): 200 (2009). Description: Orange et al. 2009. Substrate: rock in intertidal zone. World distribution: cosmopolitan. CINP distribution: WA.

NOTES. – *Wahlenbergiella striatula* is apparently rare along the California coast. *Verrucaria melas* Herre, described from San Francisco, is a synonym (Knudsen 2012). It occurs on West Anacapa Island in CINP.

Voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, below Rat Rock, *Knudsen 10685 & Kocourková* (UCR; det. Breuss).

Waynea californica Moberg, Lichenologist 22: 249 (1990). Description: Moberg 2002d. Substrate: bark, especially on oaks. World distribution: North America. CINP distribution: SC, SR.

NOTES. – *Waynea californica* is probably more common than the literature indicates, at least in the coastal ranges from Orange County to Monterey County of California. It also occurs in Oregon (B. McCune. pers. comm.) In CINP the species occurs on Santa Cruz and Santa Rosa Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, ridge above Chinese Harbor, on *Quercus agrifolia*, *Knudsen et al.* 8546 (UCR).

Xanthomendoza fallax (Hepp ex Arnold) Søchting, Kärnefelt & S.Y. Kondr., Mitt. Inst. Allg. Bot. Hamburg 30: 237 (2002). Description: Lindblom 2004a. Substrate: bark, often on rock especially in Mojave Desert. World distribution: Asia, Europe, North America. CINP distribution: SC, SR.

PLATE 23, FIG. D.

NOTES. – *Xanthomendoza fallax* is common in California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on chaparral, *Ryan* 31634 (ASU; det. Nash).

Xanthomendoza fulva (Hoffm.) Søchting, Kärnefelt & S. Kondr., Mitt. Inst. Allg. Bot. Hamburg 30: 237 (2002). Description: Lindblom 2004a. Substrate: bark, rarely on rock. World distribution: Asia, Europe, North America.

PLATE 23, FIG. E.

NOTES. – *Xanthomendoza fulva* is common in California. It is apparently rare on San Miguel and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, on sandstone, *Nash* 41169-B (ASU).

Xanthomendoza oregana (Gyelnik) Søchting, Kärnefelt & S. Kondr., Mitt. Inst. Allg. Bot. Hamburg 30: 237 (2002). Description: Lindblom 2004a. Substrate: bark, rarely on detritus, soil, rock. World distribution: Asia, North America. CINP distribution: SC, SM, SR.

NOTES. – *Xanthomendoza oregana* is common in California. It occurs on San Miguel, Santa Cruz, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo ridge, on shrub, *Nash* 32820 (ASU)

Xanthoparmelia commonii Elix & Nash, Mycotaxon 71: 417 (1999). Description: Nash and Elix 2004. Substrate: on non-calcareous pebbles and adjacent soil. World distribution: North America. CINP distribution: SR.

NOTES. – *Xanthoparmelia commonii* is rare in California and is known only from the Channel Islands. It occurs on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, off Telephone Road, on pebbles, *Knudsen et al.* 7699.1 (UCR)

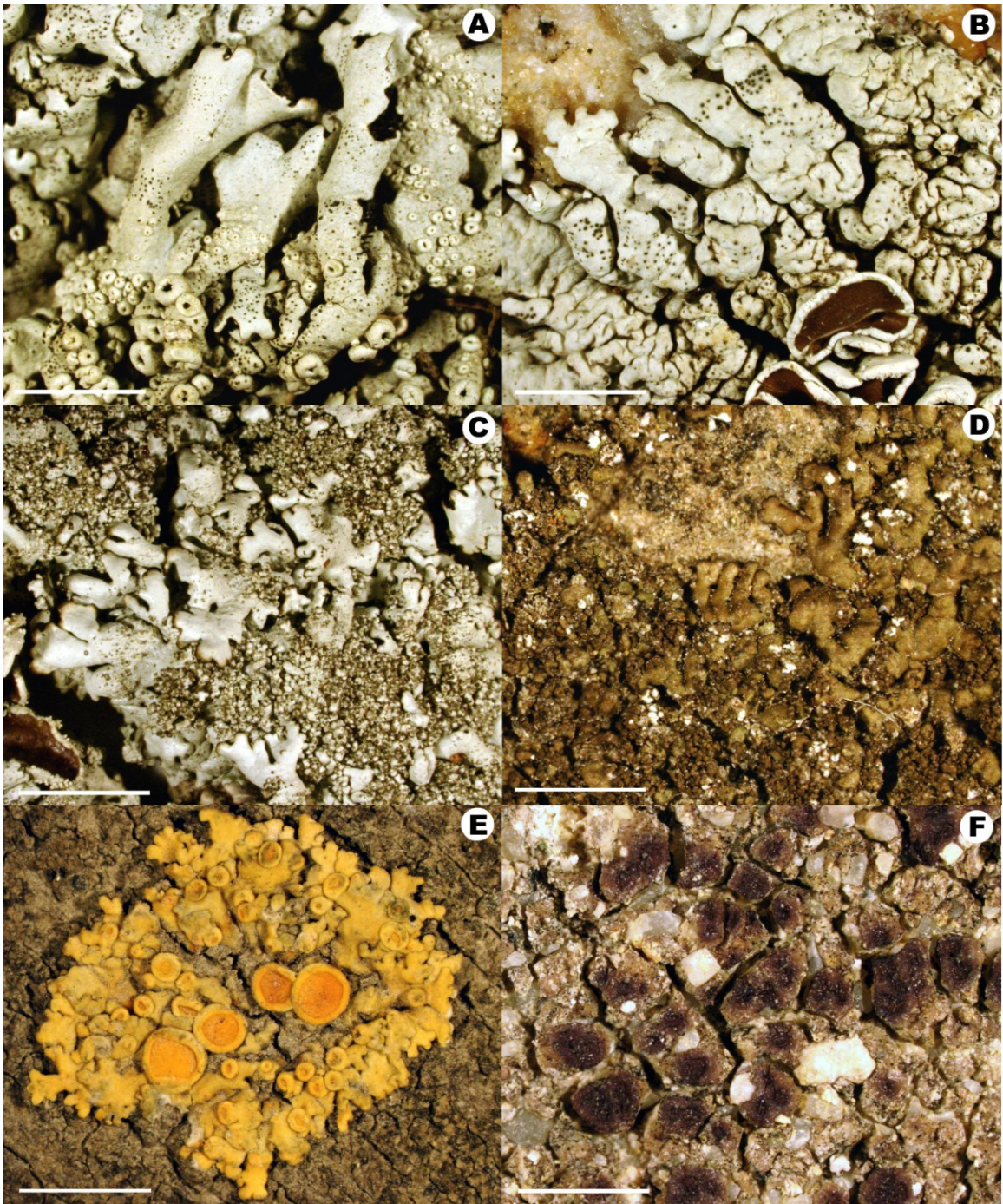


Plate 24, A, *Xanthoparmelia cumberlandia* (Lendemer 14873, NY). B, *X. lineola* (Lendemer 14931, NY). C, *X. mexicana* (Lendemer 14730, NY). D, *X. verruculosa* (Lendemer 11394, UCR). E, *X. tenax* (Underwood s.n., NY). F, *Myriospora hassei* (Knudsen 707, UCR). Scales = 2.0 mm in A-C; 1.0 mm in D-F.

Xanthoparmelia cumberlandia (Gyelnik) Hale, Phytologia 28: 487 (1974). Description: Nash and Elix 2004. Substrate: non-calcareous rock, soil. World distribution: Europe (?), North and South America. CINP distribution: SC, SR.

PLATE 24, FIG. A.

NOTES. – *Xanthoparmelia cumberlandia* is common throughout California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Torrey Pine grove, on volcanic breccia, *Knudsen 7431.2 & Baguskus* (NY, UCR)

Xanthoparmelia lineola (E.C. Berry) Hale, Phytologia 28: 488 (1974). Description: Nash and Elix 2004. Substrate: non-calcareous rock, soil. World distribution: cosmopolitan. . CINP distribution: SC, SR.

PLATE 24, FIG. B.

NOTES. – *Xanthoparmelia lineola* is common in California. It appears to be infrequent on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, along ridge to Ragged Mountain, on rock, *Nash 32378-B* (ASU).

Xanthoparmelia mexicana (Gyelnik) Hale, Phytologia 28: 487 (1974). Description: Nash and Elix 2004. Substrate: non-calcareous rock, rarely on soil. World distribution: cosmopolitan. CINP distribution: SC, SR.

PLATE 24, FIG. C.

NOTES. – *Xanthoparmelia mexicana* is common throughout California. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Quemada Canyon, on rock, *Knudsen 8688 & Kocourková* (UCR).

Xanthoparmelia neotaractica Hale, Mycotaxon 20: 76 (1984). Description: Nash and Elix 2004. Substrate: soil. World distribution: North and South America. CINP distribution: SR.

NOTES. – *Xanthoparmelia neotaractica* is a rare terricolous species in southern California that apparently requires a humid microhabitat. It occurs on Santa Rosa Island in CINP

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on soil, *Knudsen 10600* (UCR).

Xanthoparmelia standaertii (Gyelnik) Hale, Phytologia 28: 489 (1974). Description: Nash and Elix 2004. Substrate: soil. World distribution: North and South America. CINP distribution: SC, SR.

NOTES. – *Xanthoparmelia standaertii* occurs along the southern California coast. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Cherry Canyon, on soil, *Bratt 3379* (ASU, SBBG; det. Nash).

Xanthoparmelia subramigera (Gyelnik) Hale, Phytologia 28: 489 (1974). Description: Nash and Elix 2004. Substrate: non-calcareous rock. World distribution: Asia, Africa, North and South America. CINP distribution: SR, WA.

NOTES. – *Xanthoparmelia subramigera* is frequent in California but the populations are scattered. It is rare on West Anacapa and Santa Cruz Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, on rock, Bratt 9198 (ASU, SBBG).

Xanthoparmelia verruculifera (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch, Taxon 53(4): 972 (2004). Description Esslinger 2002b (as *Neofuscelia verruculifera*). Substrate: usually non-calcareous rock, rarely on bark or moss. World distribution: Asia, Africa, Europe, North America. CINP distribution: SC, SR.

PLATE 24, FIG. D.

NOTES. – *Xanthoparmelia verruculifera* is common in California at all elevations. It occurs on Santa Cruz and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, below Black Mountain, on rock, Knudsen 7659 & Baguskus (UCR).

Xanthoria ascendens S.Y. Kondr., Lichenologist 29: 431 (1997). Lindblom 2004b. Substrate: bark, detritus. World distribution: North and South America. CINP distribution: EA, SM, SR, WA.

NOTES. – *Xanthoria ascendens* is only known in California from Anacapa, San Miguel, and Santa Rosa Islands in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** VENTURA CO.: West Anacapa Island, common on *Leptosyne gigantea*, Knudsen 10776 (UCR).

Xanthoria candelaria (L.) Th. Fr., Genera Heterol. Eur. Recog. 61 (1861). Description: Lindblom 2004b. Substrate: bark, rock, detritus. World distribution: cosmopolitan. CINP distribution: EA, SB, SC, SM, SR, WA.

PLATE 24, FIG. F.

NOTES. – *Xanthoria candelaria* is a common maritime species on the California coast. It is common on all of the Channel Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Dry Canyon, on rock, Knudsen et al. 10522 (UCR).

Xanthoria elegans (Link) Th. Fr., Lich. Arct.: 69 (1860). Description: Lindblom 2004b. Substrate: rock. World distribution: cosmopolitan. CINP distribution: SR.

NOTES. – *Xanthoria elegans* is common in California but it is rare on Santa Rosa Island in CINP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Sierra Pablo Ridge, on rock, Wetmore 73768 (ASU, MIN).

Xanthoria parietina (L.) Th. Fr., Lich. Arct.: 69 (1860). Description: Lindblom 2004b. Substrate: bark, rock, detritus. World distribution: cosmopolitan. CINP distribution: SC.

NOTES. – *Xanthoria parietina* is rare in California, known from scattered coastal populations. In CINP it is known from a single collection from Santa Cruz Island.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Cruz Island, Bratt 5724 (SBBG; det. Wetmore).

Xanthoria pollinarioides L. Lindblom & D.M. Wright, Lichen Flora of the Greater Sonoran Desert Region 2: 608 (2004). Description: Lindblom 2004b. Substrate: bark. World distribution: North America (California endemic). CIMP distribution: SM.

NOTES. – *Xanthoria pollinarioides* occurs along the central coast of California. It is known from San Miguel Island in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: San Miguel Island, San Miguel Hill, on shrubs, *Nash 41197* (ASU; det. Lindblom).

Xanthoria polycarpa (Hoffm.) Th. Fr. ex Rieber, Jahresh. Ver. Vaterl. Kultur Württ. 42: 252 (1891). Description: Lindblom 2004b. Substrate: bark. World distribution: cosmopolitan. CIMP distribution: SC, SR.

NOTES. – *Xanthoria polycarpa* is common in California and is infrequent on Santa Cruz and Santa Rosa Islands in CIMP.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Rosa Island, Bee Canyon, on *Artemisia californica*, *Nash 32716* (ASU; det. Lindblom).

Xanthoria tenax L. Lindblom, J. Hattori Bot. Lab 83: 158 (1997). Description: Lindblom 2004b. Substrate: bark. World distribution: North America. CIMP distribution: SB, SC, WA.

PLATE 24, FIG. E.

NOTES. – *Xanthoria tenax* is especially common in southern California where it occurs on coastal sage shrubs and chaparral. In CIMP it occurs on West Anacapa, Santa Barbara, and Santa Cruz Islands.

Selected voucher. – **U.S.A. CALIFORNIA.** SANTA BARBARA CO.: Santa Barbara Island, on *Lycium californicum*, *Bratt 5152* (ASU; det. Lindblom).

EXCLUDED SPECIES

Acarospora rhabarbarina Hue, Lich. Morph. Et Anat.: 117 (1909). Description: Knudsen et al. 2008. Substrate: on rock and soil. World distribution: South America.

NOTES. – We no longer recognize *Acarospora rhabarbarina* as occurring in North America (Knudsen 2007a) and the identification of the specimen on soil reported from Santa Cruz Island has been revised to *A. socialis*.

Lecidella viridans (Flotow) Körber, Syst. Lich. Germ.: 242 (1855). Description: Knoph and Leuckert 2004. Substrate: non-calcareous rocks. World distribution: Europe, North America.

NOTES. – *Lecidella viridans* is a frequent species in western North America from eastern Arizona to Texas. The specimen identified by T.H. Nash as *L. viridians* from Santa Cruz Island and reported in Knoph and Leuckert (2004) is *L. stigmathea*.

Ochrolechia androgyna (Hoffm.) Arnold, Flora 68: 236 (1885). Description: Kukwa 2011. Substrate: bark. World distribution: Europe, North America.

NOTES. – The name *Ochrolechia androgyna* was probably misapplied to two specimens collected by T.H. Nash on Santa Cruz and Santa Rosa Islands (ASU). Though *O. androgyna* occurs in North America, it has only been verified as occurring in Alaska and Maine (Kukwa 2011). Specimens from California, including the Channel Islands, need to be revised in light of this recent taxonomic revision. Specimens from the mountains of southern California have been verified as *O. mahuensis* Räsänen (Knudsen 2012).

Ochrolechia parella (L.) A. Massal., Ric. Auton. Lich. Crost.: 32 (1852). Description: Kukwa 2011. Substrate: rock. World distribution: Africa, Asia, Europe.

NOTES. – *Ochrolechia parella* does not occur in North America. The report of *O. parella* from Santa Rosa Island (Roemer et al. 2004) refers to a specimen of *O. subpallescens* growing on rock. This phenomenon is common on the island and probably due to the reduction of suitable corticolous substrates from grazing.

CONCLUSION

We currently recognize 504 taxa (448 lichens, 48 lichenicolous fungi, 8 allied fungi) in 152 genera, and 56 families as occurring in Channel Islands National Park. Further, we consider all of these to be native to the north Channel Islands. Ultimately, through the revision of herbarium specimens, taxonomic revisions of genera and species, new records from exploration, and the description of new species for science, we expect the total diversity to exceed 600 taxa. Seven species are endemic to Channel Islands National Park: *Arthonia madreana*, *Caloplaca obamae*, *Dacampia lecaniae*, *Lecania caloplacicola*, *Lecania ryaniana*, *Plectocarpon nashii*, and *Verrucaria aspecta*. At least 54 species, many of which occur in Mexico, are only known in California from Channel Islands National Park, though they may eventually be discovered on the mainland of California or on the southern Channel Islands (see Appendix One below). The most important biogeographic unit of the lichen flora represented in Channel Islands National Park are species endemic to the southwestern coast of North America and which are distributed primarily from Point Reyes south to Baja California Sur. Some of these occur only in California while others are found in both California and Mexico. The indicator genera of this biogeographical unit are *Niebla* and *Schizopelte*. This biogeographic unit contains at least 103 species (see Appendix Two below).

The inventory of lichen and lichenicolous fungi taxa in Channel Islands National Park is essential for resource management, for future floristic, taxonomic, systematic, and ecological studies, as well as for the monitoring of changes in the composition of the flora in the future. It is uncertain what the effects of global warming will be on Channel Islands National Park. Anthropogenic fires are a serious threat to the lichen flora of the islands due to the large number of rare species that could be extirpated. The removal of invasive plant species such as Ice Plant and the restoration of native shrubs and trees are opening new substrates for lichen colonization. The recovery of Channel Islands National Park from centuries of ranching and military use is already evident on all of the islands and inspires us with hope for the future of its fascinating biota.

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APPENDIX ONE - SPECIES ONLY KNOWN IN CALIFORNIA FROM CHANNEL ISLANDS NATIONAL PARK

Adelolecia sonorae
Arthonia gerhardii
Arthonia madreana
Arthonia subdispuncta
Arthrorhaphis aeruginosa
Bactrospora acicularis
Caloplaca obamae
Catillaria subviridis
Cercidospora cladoniicola
Dacampia lecaniae
Endocarpon petrolepidium
Endocarpon simplicatum
Harpidium nashii
Ingvariella bispora
Intralichen lichenicola
Lecania caloplacicola
Lecania ryaniana
Lecanographa aggregata
Lecanographa lyncea
Lecanographa lynceoides
Lecanora andrewii
Lecanora carneolutescens
Lecanora plumosa
Lecidella granulosula
Lichenostigma radicans
Marchandiomyces corallinus
Mycocalicium victoriae
Peltula corticola
Peltula farinosa
Pertusaria islandica

Pertusaria moreliensis
Pertusaria occidentalis
Pertusaria tejocotensis
Physcia millegrana
Physcia neglecta
Physcia subtilis
Physcia undulata
Placidium boccanum
Plectocarpon nashii
Pleopsidium chlorophanum
Polycoccum pulvinatum
Pseudosagedia aenea
Pseudosagedia cestrensis
Psora brunneocarpa
Rinodina brouardii
Roselliniella cladoniae
Seiophora californica
Stigidium californicum
Toninia nashii
Toninia subtalparum
Tornabea scutellifera
Verrucaria adelminienii
Verrucaria aspecta
Verrucaria cetera
Xanthoria ascendens

APPENDIX TWO - SPECIES ENDEMIC TO COASTAL MEXICO AND/OR COASTAL CALIFORNIA FROM SONOMA COUNTY TO BAJA CALIFORNIA SUR

Acarospora robiniae
Adelolecia sonorae
Arthonia gerhardii
Arthonia infectans
Arthonia lecanactidea
Arthonia subdispuncta
Aspicilia pacifica
Bacidia corusans
Bacidina californica
Buellia capitis-regnum
Buellia christophii
Buellia pullata
Buellia ryannii
Caloplaca brattiae
Caloplaca catalinae
Caloplaca impolita
Caloplaca ludificans
Caloplaca obamae
Caloplaca stantonii
Caloplaca stipitata
Cladonia hammeri
Cladonia maritima
Cladonia nashii
Cyphelium brunneum
Dacampia lecaniae
Dactylospora pleiosperma
Dendrographa alectoroides

Dendrographa leucophaea
Dimelaena californica
Dimelaena weberi
Diploschistes aeneus
Dirina catalinariae
Endococcus thelommatis
Harpidium nashii
Heterodermia erinacea
Hypogymnia gracilis
Hypogymnia minilobata
Hypogymnia mollis
Hypogymnia schizidiata
Lecanactis californica
Lecanactis salicina
Lecania brunonis
Lecania caloplacicola
Lecania dudleyi
Lecania franciscana
Lecania pacifica
Lecania toninioides
Lecanographa brattiae
Lecanographa dimelaenoides
Lecanographa insolita
Lecanora albocaesiella
Lecanora brattiae
Lecanora californica
Lecanora demosthenesii
Lecanora pacifica
Lecanora substrobilina
Lecanora verrucariicola
Leprocaulon knudsenii
Leprocaulon santamonicae
Leprocaulon terricola
Megalaria columbiana
Mobergia angelica
Niebla ceruchoides
Niebla combeoides
Niebla isidiaescens
Niebla laevigata
Niebla polymorpha
Niebla procera
Niebla robusta
Paraschismatomma ochroleucum
Pertusaria brattiae
Pertusaria californica
Pertusaria islandica
Pertusaria lecanina
Pertusaria occidentalis
Physcia tenellula
Plectocarpon nashii
Protoparmelia ryaniana
Psora brunneocarpa
Rinodina herrei
Rinodina innata
Roccellina conformis
Schizopelte californica

Schizopelte crustosa
Schizopelte parishii
Seiophora californica
Sigridea californica
Skyttea tavaresiae
Sparria cerebriformis
Stigmidium californicum
Stigmidium epistigmellum
Stigmidium hesperium
Tephromela nashii
Thelomma santessonii
Toninia nashii
Toninia subtalparum
Topelia californica
Tremella nieblae
Usnea brattiae
Vahliella labrata
Verrucaria aspecta
Verrucaria subdivisa
Waynea californica
Xanthoria pollinarioides

APPENDIX THREE – MAPS OF CHANNEL ISLANDS NATIONAL PARK AND ITS CONSTITUENT ISLANDS INCLUDING RELEVANT PLACE NAMES

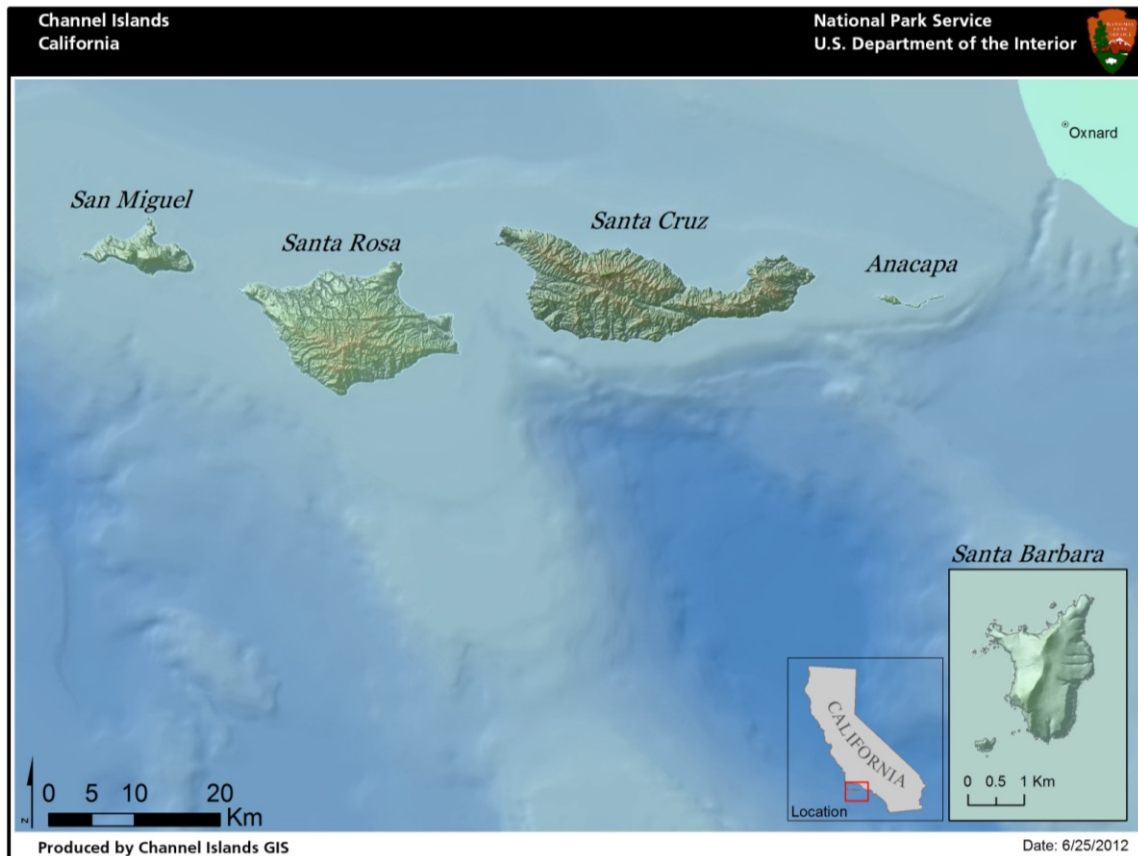


Plate 25, map of Channel Islands National Park illustrating the positions of its constituent islands (with Santa Barbara Island included as an inset).

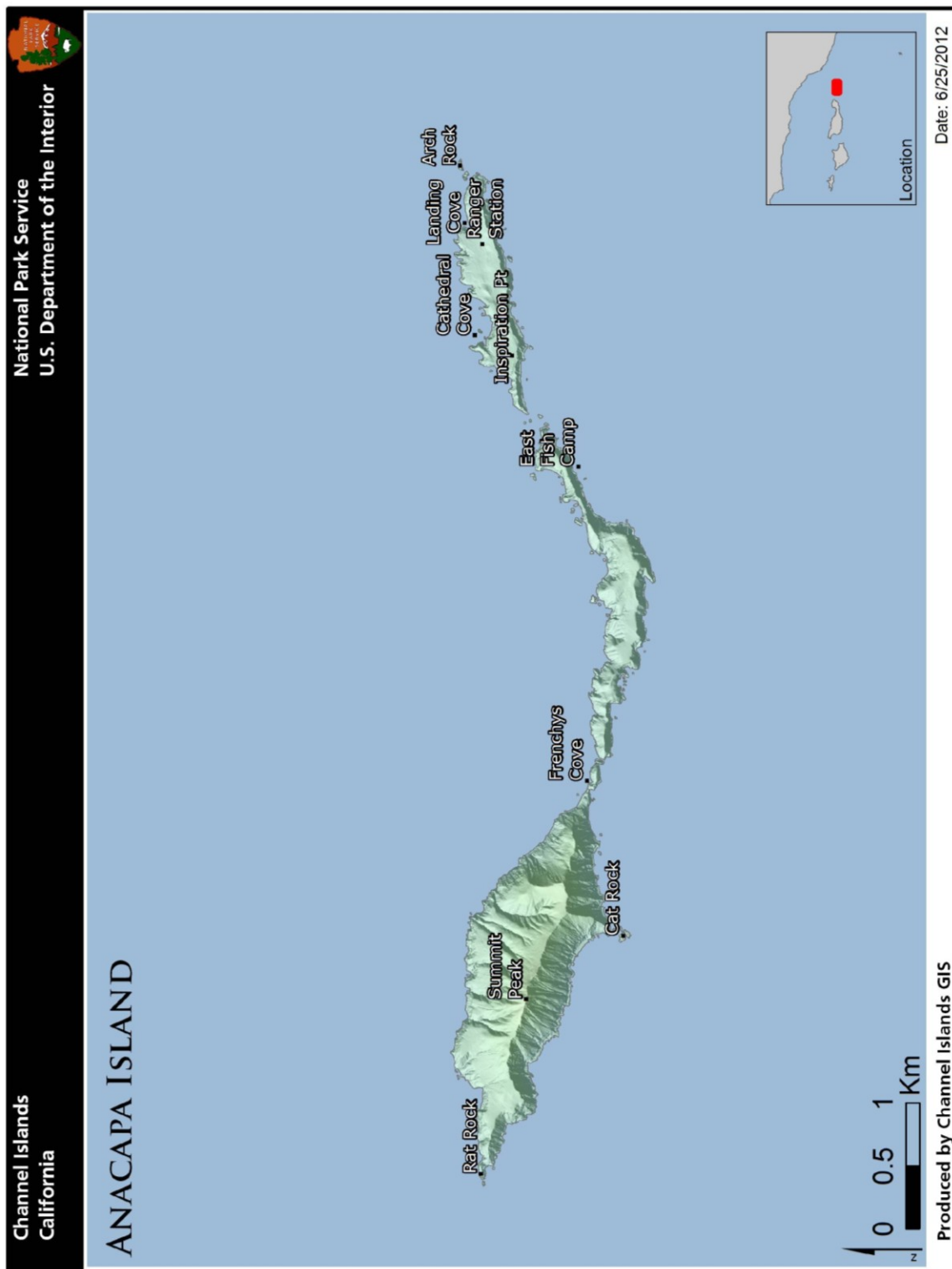


Plate 26, map of Anacapa Island (A) which is composed of three subunits (East Anacapa (EA), Middle Island (MI), and West Anacapa (WA)) and referred to as such in the text above.

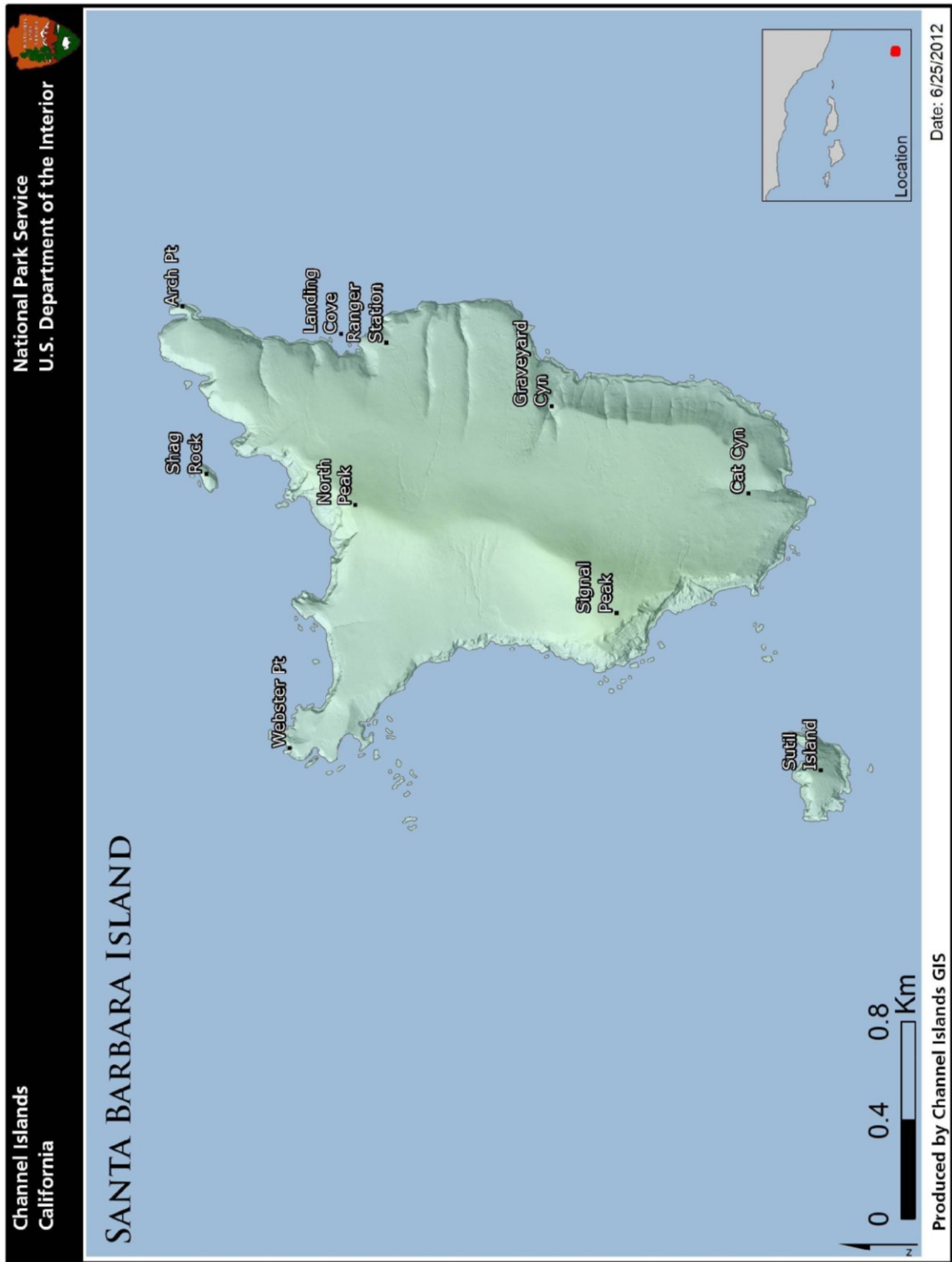


Plate 27, map of Santa Barbara Island (SB).

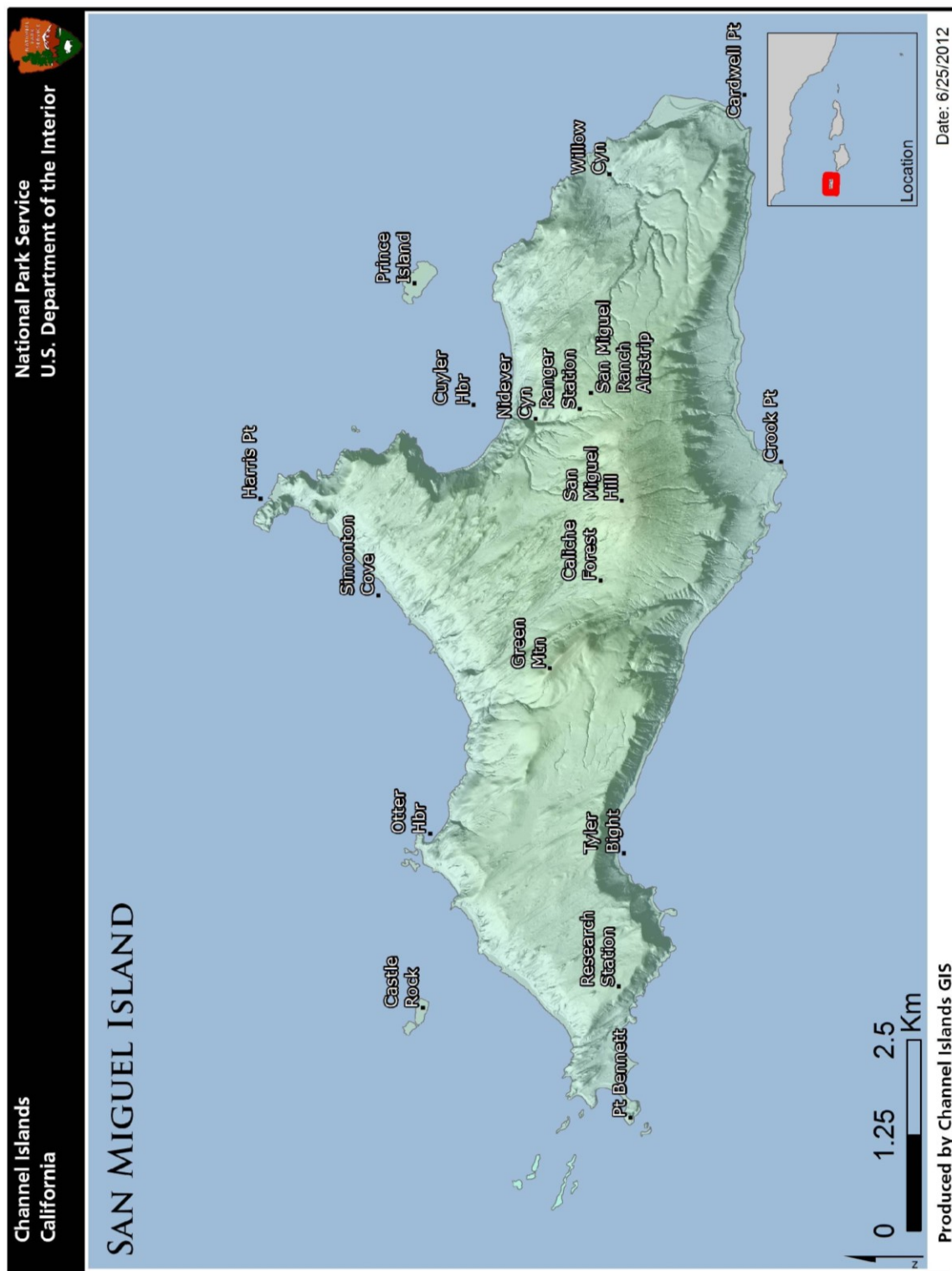


Plate 28, map of San Miguel Island (SM).

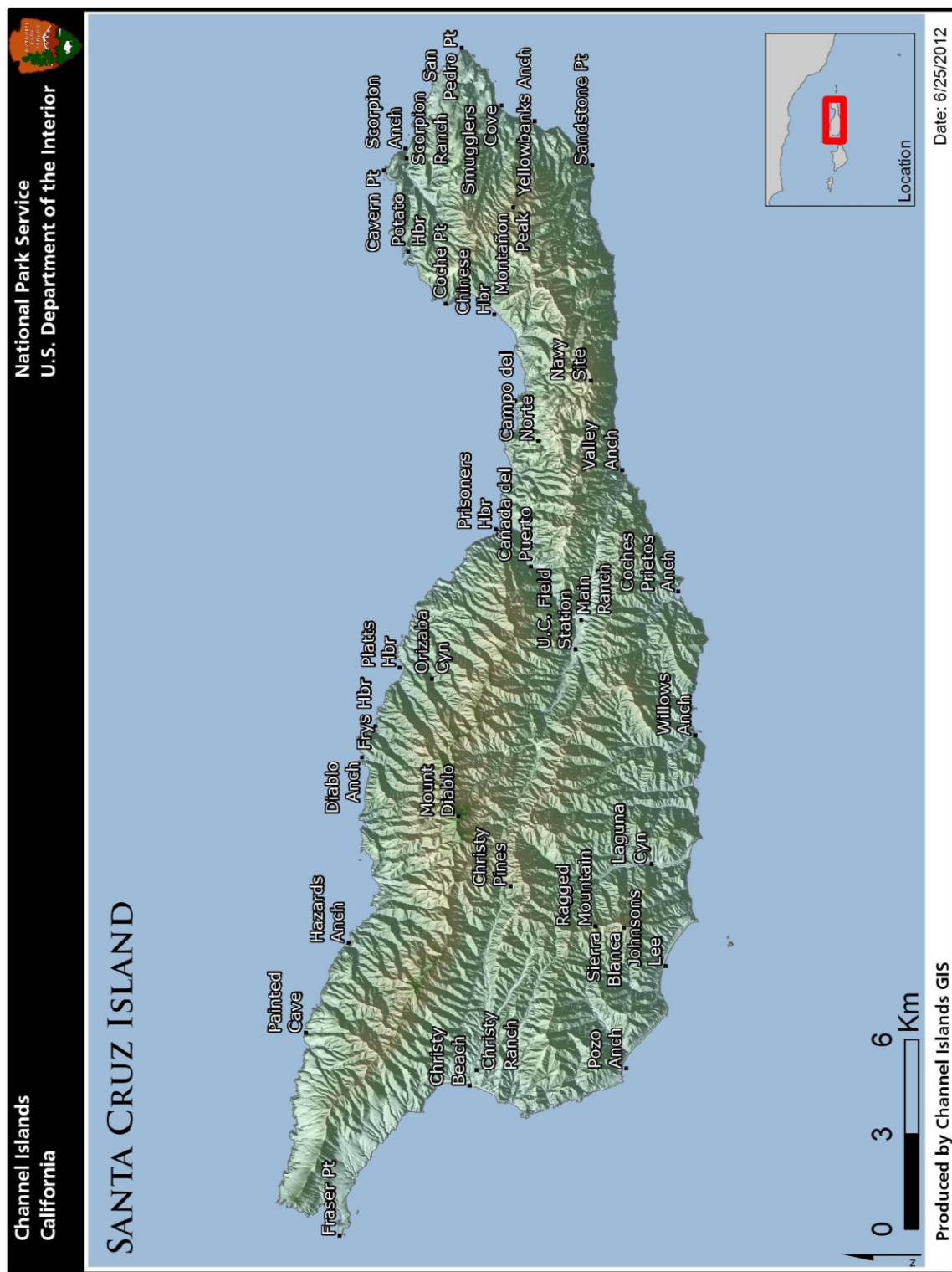


Plate 29, map of Santa Cruz Island (SC).

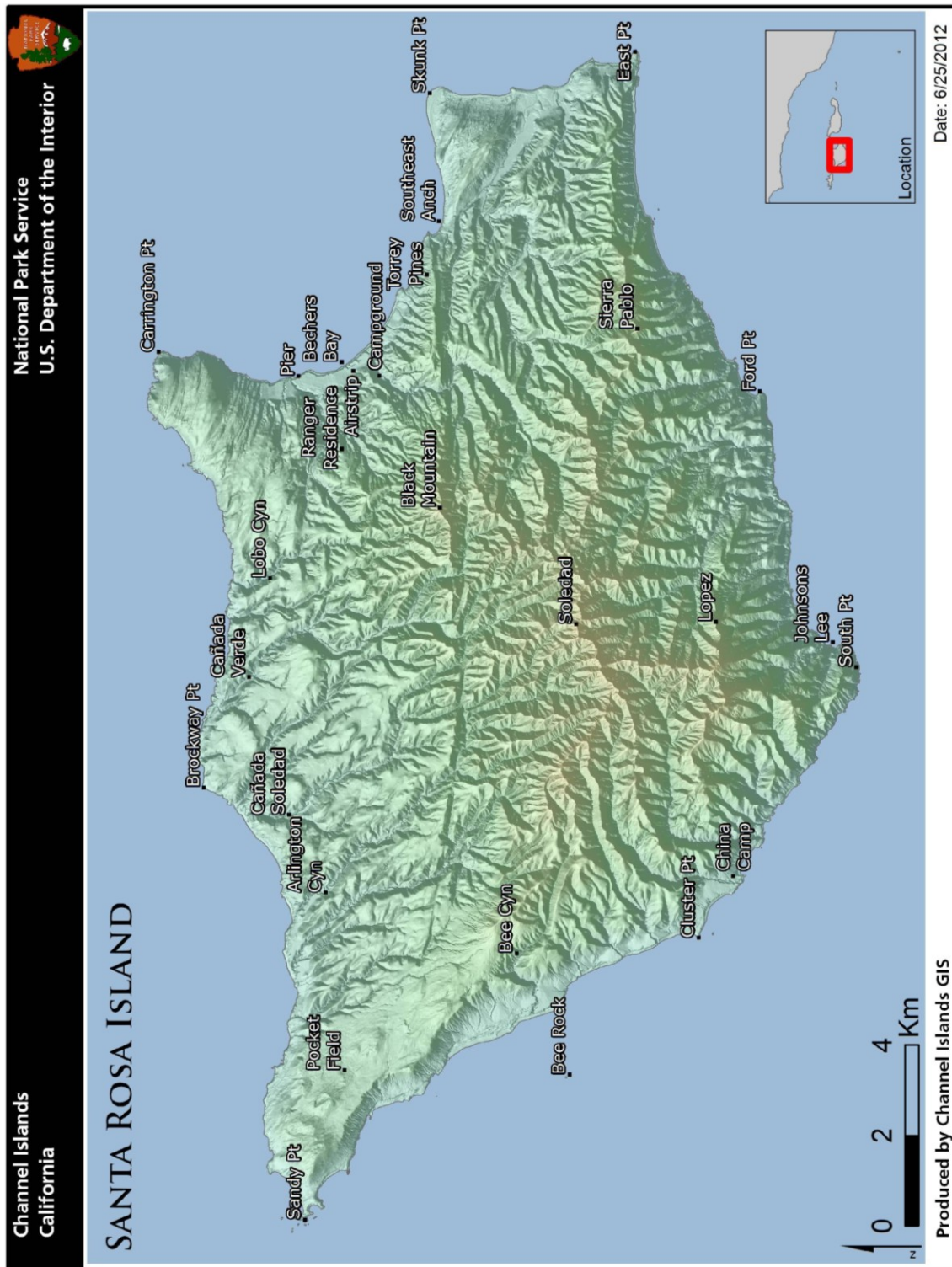


Plate 30, map of Santa Rosa Island (SR).