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LICHENS

...OF...

SOUTHERN CALIFORNIA

By H. E. HASSE

SECOND EDITION

PRICE, FIFTY CENTS

LOS ANGELES:
B. R. BAUMGARDT & CO.
1898

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Dr. E. C. Van Dyke

LICHENS

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INTRODUCTION

THE large class of Lichens has comparatively been given but scant attention by botanists, although their study is not less devoid of interest than that of other Cryptograms or of Phanerograms possessed of greater exterior attractiveness in contrast to the modest Lichen in unassuming garb, persistently toiling in obscurity with tenacious vitality and achieving important results in vegetable economy by preparing sterile soil or hardest rock for the ultimate support of more pretentious plants. With the object of attaining greater recognition for these humble plants by students of California Botany, this preliminary list is presented.

Without the patient and disinterested assistance and advice of Dr. W. Nylander, who named the undescribed and classified difficult species, the compilation of this list could not have been accomplished. As it is it gives but a tithe of the interesting Lichens of this part of the State, but it is hoped that an enlargement of this report will be made if possible.

The kindness of correspondents in forwarding specimens is also gratefully acknowledged and for these due credit has been attempted to be given.

Soldiers' Home, Los Angeles Co., California,
May, 1898.

WITBOLDIUM

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The first of the two main parts of the work is a general introduction to the subject of the history of the world, and the second part is a detailed account of the history of the world from the beginning of the world to the present time. The first part is divided into two main sections, the first of which is a general introduction to the subject of the history of the world, and the second part is a detailed account of the history of the world from the beginning of the world to the present time. The first part is divided into two main sections, the first of which is a general introduction to the subject of the history of the world, and the second part is a detailed account of the history of the world from the beginning of the world to the present time.

LICHENS OF SOUTHERN CALIFORNIA.

COLLEMACEI Nyl.

TRIBE I. COLLEMEI Nyl.

GEN. I. COLLEMA Wigg.

1. *C. chalazanum* Ach. Spores 0.022 long, 0.014 broad, in oblong asci; paraphyses distinct. On earth. Near Santa Monica.
2. *C. myriococcum* Ach. On calcareous rocks. Santa Monica Range.
3. *C. confertum* Nyl. Spores 0.025 long, 0.010 broad. Frequent on earth near Santa Monica.
4. *C. flaccidum* Ach. Rocks. Santa Monica.
5. *C. pulposum* Ach. On rocks and earth.
6. *C. cheileum* Ach. Sp. decolorate, submuriform, 0.032 long, 0.012 broad. On pebbles. Santa Monica Range.
7. *C. coecophorum* Tuck. Sp. one septate, with acuminate ends, 0.028 long, 0.008 broad. On rocks and earth. *conglomeratum Hoffm.*
8. *C. limosum* Ach. On quartzose rocks. Frequent.
9. *C. nigrescens* Ach. On trunks. No apothecia observed.
10. *C. aggregatum* Nyl. On trunks. Near Santa Monica.

GEN. II. COLLEMODIUM, Nyl.

1. *C. plicatyle* Nyl. Rocks, Santa Monica.
2. *C. turgidum* Nyl. On calcareous rocks. Near Santa Monica.

GEN. III. LEPTOGIUM Fr.

1. *L. lacerum* Fr. Rocks among moss. Santa Monica Range.
2. *L. californicum* Tuck. Rocks among moss.
" *lophatum* Tuck. San Gabriel Mts. at 1,800 meters altitude.
3. *L. albociliatum* Domez. On rocks. Frequent in the higher mountains. On rocks, San Diego (*R. D. Alderson*).
4. *L. palmatum* Mont. Spores submuriform and muriform, 0.032-56 long, 0.012-20 broad. Near Santa Monica.
5. *L. hildenbrandii* Nyl. Trunks. Near Santa Monica.

SUB. GEN. I. HOMODIUM Nyl.

1. *H. microdium* Nyl. n. sp. "Thallus fusco nigrescens minutus fruticulosus furfurascens." Apothecia zeorine, thalline margin turgid, proper margin reddish of the color of the disk, which is depressed. Sp. simple 0.012-16 long, 0.008-10 broad. Shaded banks, Sepulveda Cañon.

GEN. IV. COLLEMOPSIS Nyl.

1. *C. schaereri* Nyl (*Pyrenopsis schaereri*, Nyl.) On calcareous rocks. Near Santa Monica
2. *C. segregata* Nyl. n. sp. Thallus of minute globular lobules collected in small clumps; Apothecia concave, reddish, with a turgid entire margin. Sp. simple, 0.016-18 long, 0.010-11 broad. On ground near Soldiers' Home, February, 1897.

LICHENACEI Nyl.

TRIBE II. CALICIEI Nyl.

GEN. V. CALICIUM Pers.

1. *C. curtisii* Tuck. On oak bark. San Gabriel Mts.

GEN. VI. TRACHYLIA Fr. (*Acolium*.)

1. *T. tympanella* Fr. On dead wood in the mountains.

TRIBE III. CLADONIEI.

GEN VII. CLADONIA Hill.

1. *C. pyxidata* Fr. On earth. Common throughout.
 form lophyra Coem. Near Santa Monica.
 form epiphylla Nyl. Same locality. Rare.
 var. 1. pocillum Fr. Shaded earth. Santa Monica Range.
 var. 2. costata Mott. Same locality as var. 1.
2. *C. fimbriata* Flk. Earth on rocks. Santa Monica Range.
 " *tubaeformis* Fr. Santa Monica, Elsinore, Catalina Isl.
3. *C. verticillata* Flk. Santa Monica Mts.
4. *C. furcata corymbosa* Nyl. Catalina Island.
 subspec. cracemosa Nyl. Common in San Gabriel Mts.
5. *C. cariosa* Spreng. On shaded earth. Santa Monica Mts.
6. *C. chlorophaea lacinians* Nyl. "Thallus laciniosus. Podetia K subflavescentia." Sp. oblong, 0.010-15 m. mill. long, 0.003-4 thick. On shaded earth, Santa Monica Mts.
7. *C. flaccida* Nyl. Pyr. or p. 25. K. nonnihil flavescentia." Same locality as the preceding.

RAMALODEI Nyl.

TRIBE IV. ROCCELLEI Nyl.

GEN. VIII. DENDROGRAHA Darbshire.

1. *D. lencophaea* (Tuck.) Darbish.
 " *var. minor* (Tuck.) Darbish. The type along the coast from San Pedro to San Diego. On *Lycium Californicum*. On *Atriplex*, San Diego, (*E. Palmer*, *R. D. Alderson*.) The variety on rocks, Monterey, (*Prof. Farlow*.) Catalina Island. Based on differences in the anatomical structure of the cortical layer and of the apothecium, Dr. O. V. Darbshire has separated this species from *Roccella*, forming a new genus with this as the sole species. (*Bericht Deutsch. Bot. Gesellsch: 1898, Vol. XVI.*)

TRIBE V. RAMALINEI Ach.

GEN. IX. RAMALINA, Ach.

1. *R. ceruchis* De Not. On shrubs near the coast. San Diego (*R. D. Alderson.*)
form *cephalota* Tuck. With the type. San Diego (*R. D. Alderson.*)
2. *R. combeoides* Nyl. Rocks. Catalina Island. San Nicolas Island on *Leptosyne gigantea* (*Blanche Trask.*) San Diego (*R. D. Alderson.*)
3. *R. homalea* Ach. Beach rocks. Catalina Island and near Santa Monica.
4. *R. reticulata* Krempelh. Common on small trees along the coast. Catalina Island (*Blanche Trask.*)
5. *R. menziesii* Tuck. On trees. Common.
6. *R. laevigata* Fr. Twigs. Near San Bernardino (*S. B. Parish.*)
7. *R. intermedia* Del. Twigs. Catalina Island.
8. *R. farinacea* Nyl. Common.

TRIBE VI. USNEEI Nyl.

GEN. X. USNEA Hoffm.

1. *U. florida* Hoffm. On bushes in the mountains. Rare.
2. *U. hirta* Hoffm. On shrubs throughout. Always sterile. The form *rubiginosa* Michx. from Catalina Island (*Blanche Trask.*) San Diego (*R. D. Alderson.*)
3. *U. dasycarpa* Nyl. On shrubs in the mountains; rather rare and seldom with apothecia.

GEN. XI. CHLOREA Nyl.

1. *C. californica* Nyl. (*Evernia vulpina* Ach.) Of luxuriant growth on green and dead wood of conifers in the higher mountains.

TRIBE VII. CETRARIEI Nyl.

GEN. XII. CETRARIA Ach.

1. *C. californica* Tuck. Shrubs and small trees. Frequent in the mountains.

GEN. XIII. PLATYSMA, Hoffm.

1. *P. saepincola* Hoffm. (*Cetraria saepincola* Ach.) Frequent on shrubs. San Bernardino (*S. B. Parish.*)

TRIBE VII. ALECTOREI Nyl.

GEN. ALECTORIA Ach.

1. *A. fremonti* Tuck. Trees. San Diego (*R. C. Alderson.*)

TRIBE IX. PARMELIEI Nyl.

GEN. XIV. EVERNIA Ach.

1. *Evernia prunastri* Ach. On shrubs. Common. No fruiting plant observed.

GEN. XV. *PARMELIA* Ach.

1. *P. perlata* Ach. **Subspec. *P. ciliata*** Nyl. On trees. San Diego (*R. D. Alderson*). San Gabriel Mts.
The form *excrescens* also from San Diego (*R. D. Alderson*).
2. *P. olivetorum* Nyl. On trunks and limbs. Common. Not seen with apothecia.
3. *P. tiliacea* Ach. On trunks. San Gabriel Mts. at 1,500 meters alt. On shrubs near Elsinore.
4. *P. saxatilis* Ach. On trunks and boulders in the higher mountains.
5. *P. conspersa* Ach. On rocks and earth. Freely fruiting. Common.
stenophylla Ach. Rocks. San Bernardino Mts. (*S. B. Parish*).
6. *P. olivacea* Ach. On rocks and bark. Common. San Bernardino (*S. B. Parish*)
" ***sorediata*** Nyl. On rocks throughout. San Diego (*R. D. Alderson*). Northern slope of San Bernardino Mts. at 1,300-2,000 meters alt. (*S. B. Parish*.)
7. *P. concreta* Stiz u. sp. *in litt.* San Bernardino Mts. On oaks (*S. B. Parish*).
8. *P. subolivacea* Nyl. On rocks. San Gabriel Mts. San Antonio Cañon. Bull. Torr. Bot. Cl. Vol. 24, No. 9.
9. *P. physodes* Ach. Shrubs. Santa Monica Range. Not frequent.
" ***obscurata*** Ach. On bark. San Bernardino (*S. B. Parish*.)
10. *P. enteromorpha* Tuck. Shrubs and small trees. From the lower Santa Monica Range to middle elevation of the higher mountains.
11. *P. glabra* Nyl. On oaks. At Dell's camp. San Antonio Cañon. San Gabriel Mts.

TRIBE X. *STICTEI* Nyl.GEN. VVI. *STICTINA* Nyl.

1. *S. anthraspis* (Ach.) Nyl. On oaks. San Gabriel Mts. at 800 meters alt.

TRIBE XI. *PELTIGEREI* Hoffm.GEN. XVII. *PELTIGERA* Hoffm.

1. *P. canina* Hoff. Among mosses on earth and boulders; frequent in the mountains.
" ***sorediata*** Schaer. Same habitat as the type; not frequent.
2. *P. venosa* (L.) Hoffm. San Bernardino Mts. at 2,460 meters alt. (*S. B. Parish*).
3. *P. rufescens* Hoffm. San Bernardino Mts. (*S. B. Parish*).

TRIBE XII. *PHYSCIAEI* Nyl.GEN. XVIII. *PHYSCIA* Schreb.

1. *P. chrysophthalma* DC. On shrubs and small trees. Common;
" **form *flavicans*** Wallr. With the type. Freely fruiting. (*Theloschistes*.)
2. *P. parietina* De Not. Earth and rocks near the ocean. Catalina Isl.
3. *P. polycarpa*. On *Sambucus glauca*. Near Los Angeles (*Theloschistes*).

4. *P. lychnea* Nyl. Common. On Juglaus and Salix (*Theloschistes*).
" *laciniosa* Schaer. With the species.
5. *P.* (*Theloschistes*) *lychnea pygmaea* Nyl. Catalina Island (*Bl. Trask.*)
6. *P. ciliaris* (L) DC. On bark. Common.
7. *P. erinacea* Nyl. On shrubs. Santa Monica, San Diego (*R. B. Alderson*).
8. *P. crispa* Nyl. On Junipers. In the mountains and desert.
9. *P. stellaris* Fr. On Bark. Common.
10. *P. aipolia* Nyl. On rocks. Common.
11. *P. pulverulenta* Fr. On trunks. Common.
" *angustata* Nyl. On trunks. San Gabriel Mts. at 800 meters alt. Abundantly fruiting; the apothecial margin frequently lobulate.
12. *P. muscigenia* Nyl. On rocks and earth among mosses; apothecia rarely seen.
13. *P. aquila* Fr. Among moss on rocks. San Gabriel Mts. at 1,800 meters.
14. *P. obsura* Fr. On barks. Common.
15. *P. adglutinata* Nyl. On bark. Common.

TRIBE XIII. GYROPHOREI.

GEN. XIX. GYROPHORA Ach.

1. *G. rugifera* Nyl. On granite in the mountains above 3,300 meters. San Bernardino Mts. (*Wright.*) San Jacinto Mts. (*Dr. A. Davidson.* On the summit of "Baldy.")
2. *G. phaea* (Tuck.) Granitic rocks. Ascending elevations up to 1,800 meters. San Bernardino Mts. (*S. B. Parish.*)
3. *G. hirsuta grisea* Th. Fr. On various rocks of the same distribution as the last preceding. San Bernardino Mts. (*S. B. Parish.*)
4. *G. angulata* (Tuck.) Granitic rocks in the higher mountains.
5. *G. semitensis* (Tuck.) With the last preceding but not frequent.

TRIBE XIV. PANNARIEI Nyl.

CEN. XX. PANNARIA Del.

1. *P. rubiginosa conoplea* Fr. Among moss at bases of trees.

GEN. XXI. PANNULARIA Nyl.

1. *P. microphylliza* Nyl. Thallus of brownish squamules with crenate margins and under surface lighter colored. Apothecia brick-red with a raised margin. Spores oblong, ellipsoid, 3 septate, 0.016-23 long, 0.006-9 broad. On quartz. San Gabriel Mts.
2. *P. nigra* Nyl. On stones. Common.
3. *P. lepidiota* (Th. Fr.) Nyl. Shaded banks and earth on rocks; throughout.
" *cyanolepra* (Tuck.) On earth. Near Santa Monica. Apothecia not observed.
4. *P. triseptata* Nyl. On sandstone Santa Monica Mts.
5. *P. microphylla* Nyl. On ground among moss. Santa Monica and San Gabriel Mts.
form *californica* (Tuck.) Rubio Cañon near Pasadena (*A. J. McClatchie.*)

6. **P. ruderatula** Nyl. n. Sp. Thallus of chocolate-colored convex (when dry) squamules with a darker margin. Apothecia biatorine, blackish, with somewhat prominent margin. Spores oblong, simple, 0.028 micro. millim. long, 0.0078 thick. Asci tubular, hypothecium colorless. February, 1897. Original locality on foot-hill ranges near Soldiers' Home.

SUB-TRIBE HEPPIEI.

GEN. XXII. HEPPIA Naeg.

1. **H. guepini** Nyl. (Endocarpiscum Tuck.) Frequent on rocks. (Endocarpiscum bolanderi Tuck. does not differ from H. guepini Nyl. Nylander, Lichenes, Japoniae, page 105.)
2. **H. despreuxii** (Mont.) Tuck. On rocks near Santa Monica and ascending the mountains to 600 meters alt.
3. **H. terrena** Nyl. On clay. Bulletin Torr. Bot. Club, Vol. 24, No. 9.
4. **H. polyspora** Tuck. Quartz Rock. Elsinore.
5. **H. leptopholis** Nyl. n. Sp. Thallus of rounded thick squamules, light olive green with a dark everted margin. Squamules contains one flat, or slightly concave, apothecium disk dark red with a darker proper margin. Spores globular decolorate 0.006 micro. millim. in diameter about 20 in azci. "Affinis Heppiae premnophilæ" (Nyl.) On clay, Original locality near Soldiers' Home.

TRIBE XV. LECANO-LECIDEI Nyl.

GEN. XXIII. LECANORA.

A. Placodium DC.

Sterigmata shortly jointed, spermatia straight, oblong or bacilli-form.

0. **L. elegans** Ach. Rocks. Local but widely distributed and ascending the highest peaks, where, on granite, the finest specimens flourish.
1. **L. murorum** Ach. On rocks at lower elevations; frequent near Santa Monica. Chiefly represented by the subspec *L. tegularis* Nyl. *Placodium murorum minutum* Mudd. San Bernardino (S. B. Parish.)
2. **L. callopisma** Ach. San Bernardino Mts. (S. B. Parish.) San Gabriel Mts. Not seen with apothecia.
3. **L. paludella** Nyl. n. Sp. "Thallus olivaceo obscuratus parum evolutus; Sp. long, 0.010-11 crass 0.005-6 m. millim. Epithecium K. purpurascens." Near Elsinore, on granite. Sterigmata jointed. Spermatia straight.
4. **L. cinnabarina** Ach. On rocks Santa Monica Mts.
5. **L. aurantiaca** Nyl. On barks throughout Catalina Island.
6. **L. cerina** Ach. Various barks. Common, On bleached bones, San Nicolas Island (*Blanche Trask*.)
7. **L. pyracea** Nyl. Bark of Juglans and other trees.
8. **L. subpyraceella** Nyl. On earth near Soldiers' Home. Bull. Torr. Bot. Club. Vol. 24, No. 9.
9. **L. variabilis** Nyl. Granitic and conglomerate rocks near Santa Monica and Elsinore. Sterigmata long and simple. Spermatia straight.
10. **L. ferruginea** Nyl. Rocks; common. The form *bolanderi* (Tuck.) frequent in the Santa Monica Mts. on various rocks and clay. Very similar in color to Placodium, luteo-minium.

11. *L. vitellina* Ach. On trees and rocks; frequent.
 " *aurella* Ach. Rock. Occasional with the type.
12. *L. spraguei* (Tuck). On granite in the higher mountains. Apothecia have not been observed. It occurs in small cushions of citrine color and plainly stipitate.
13. *L. fuscoatra* Nyl. Sandstone near Santa Monica.
 B. Apothecia biatoro-lecanorine. Spores 8, 1-septate, colorless; sterigmata short jointed; spermatia short, straight.
14. *L. holophaea* Nyl. Calcareous rocks on the beach near San Pedro.
 C. Apothecia lecanorine; spores 8, rarely more; 1, rarely 3, septate, brown. Sterigmata jointed and spermatia straight. (*Rinodina* Tuck.)
15. *L. sophodes* Ach. On various barks; common.
16. *L. exigua* Nyl. On rocks and barks; common.
17. *L. roboris* Nyl. Trunks of small trees; frequent in San Gabriel Mts. at 800 meters alt.
18. *L. confragosa* Nyl. On rocks.
19. *L. atrocinerea* Nyl. Rocks near Santa Monica.
20. *L. conradi*, (Koerb) On earth, Santa Monica Range.
21. *L. mniareae* Ach. Same habitat as the last.
22. *L. radiata* (Tuck.) On rocks; common. Catalina Island. San Bernardino (*S. B. Parish*).
23. *L. angelica* (Stz.) On rocks. Throughout.
24. *L. thysanota* (Tuck.) Rocks, Santa Monica Range occasionally. San Gabriel Mts. at 8-900 meters elevation. Sparingly fruiting.
25. *L. oreina* (Mass.) On granite in the higher mountains.
26. *L. hallii* (Tuck.) On oak bark. Frequent in the San Gabriel Mts. at 8-900 meters elevation.
27. *L. aterrima* (Anz.) Rocks, San Gabriel Mts. at 1,800 meters.
 D. Spores 8, simple, colorless. Sterigmata simple. Spermatia long; more or less arcuate. *Squamaria* DC.
28. *L. chrysouleuca* Ach. On granite in the mountains above 1,800 meters (*L. rubina* Ach.) San Bernardino Mts. (*S. B. Parish*). San Jacinto Mts. (*Dr. A. Davidson*).
29. *L. melanophthalma* Ram. With the last (*L. rubina opaca* Ach.) (*S. B. Parish*).
30. *L. saxicola* Ach. (*L. muralis* Schaer.) Rocks; common.
 " *diffRACTA* Fr. In the higher mountains.
 " *semitensis* Tuck. Wilson's Peak, San Gabriel Mts.
31. *L. pinguis* Tuck. Calcareous rocks, Islands of Catalina and San Nicolas (*Blanche Trask*).
32. *L. glaucophana* Nyl. Thallus glaucescent of round, lobate, squamae small, containing from one to several apothecia, which are innate and flat; becoming sessile and convex, with a thin, white, entire margin; epithecium fuscous; spore 0.016-23 long, 0.004-5 broad. On granite boulders near Dell's Camp, San Antonio Cañon, San Gabriel Mts.
 E. Apothecia lecanorine; spores 8, ellipsoid, simple, colorless; sterigmata simple; spermatia acicular, arcuate.
33. *L. subfusca* Nyl. On various rocks; common.
 " *campestris* Nyl. On rocks. Throughout with the type. San Bernardino (*S. B. Parish*), San Nicolas Island (*Blanche Trask*).
34. *L. albella* Ach. (*L. pallida* Schaer.) On bark; throughout. Common
35. *L. caesio rubella* Ach. (*L. pallida cancriformis* Tuck.) Occasionally with the last species.

36. *L. glaucoma* Ach. (*L. sordida* Fr.) Rocks, San Gabriel Mts., at middle elevations.
37. *L. allophana* Nyl. Trunks and rocks, Santa Monica Mts.
38. *L. coilocarpa* Nyl. On bark throughout. San Bernardino (*S. B. Parish.*)
39. *L. distans* Nyl. On bark, San Bernardino (*S. B. Parish.*)
40. *L. hageni* Ach. Trunks and rocks. Frequent.
41. *L. pacifica* Tuck. Trees, throughout. Fences near Compton (*A. J. McClatchie.*)
42. *L. varia* Nyl. Common on trees and rocks.
43. *L. polytropa illusoria* Ach. Rocks, San Bernardino Mts. (*S. B. Parish.*)
43. *L. symmicta* Ach. On bark; frequent.
44. " *saepincola* Ach. Twigs; not frequent,
F. Apothecia biatoroid; spores 8 or 16, simple, or 1-3 septate, colorless; sterigmata simple; spermatia arcuate.
45. *sophodopsella* Nyl. Sp. 0.008 m, millim long, 0.005 thick. Rocks, Santa Monica Mts.
46. *L. syringa* Ach. (*L. athroocarpa* Dub.) Frequent on rocks. Only 1-septate spores have been observed.
47. *L. dimera* L. On bark, near Santa Monica.
48. *L. brunonis* Tuck. On rocks, throughout. On Catalina Island.
G. Apothecia lecanorine; spores 8; pluriseptate, colorless; sterigmata jointed and spermatia straight, cylindrical.
49. *L. subdispersa* Nyl. w. sp. Thallus of minute light brown squamulos apothecia quite small, disk black, margin indistinct or disappearing. Sp. 0.0010-12 m. mill long, 0.005 thick. On sandstone mixed with *L. brunonis*. Santa Monica Mts.
50. *L. ventosa* Ach. On bark of conifers in the San Gabriel Mts.
Spores 8, colorless; sterigmata simple; spermatia straight, long.
51. *L. atra* Ach. On rocks, Catalina Island.
Spores large, simple; sterigmata simple, with acicular, straight spermatia.
52. *L. pallescens* Nyl. Rocks, Catalina Island.
H. Apothecia innate, lecanorine; spores simple; sterigmata simple and spermatia acicular, straight or curved.
53. *L. cinerea* Sommerf. On rocks; common and variable.
54. *L. praecrenata* Nyl. n. sp. (*in litt.*) On disintegrated granite, Santa Monica Mts. on "Barton's Peak." Spores 4-6, globular, 0.020 in in diameter,
55. *L. gibbosa* Nyl. On rocks; frequent.
56. *L. laevata* Nyl. Rocks; rare.
57. *L. calcarea contorta* Nyl. On stones, near Dagget, Mojave desert (*S. B. Parish.*) Nos. 2,758 and 3,528.
58. *L. glaucopsina* Nyl. n. sp. Sp. 0.018-22 m. millim long, 0.011-14 thick. "Pertinet ad stirpem *Lecan. cinereae*." Barton's Peak, Santa Monica Mts.
59. *L. epulotica subepulotica* Tuck. On granite, San Gabriel Mts. at 1,900 meters alt.
I. *Acarospora*. Spores small and numerous.
60. *L. glaucocarpa* Ach. On various rocks; common.
61. *L. squamulosa* Nyl. (*L. cervina* Nyl.) Rocks, Santa Monica Range and ascending the higher San Gabriel Mts.
62. *L. fuscata* Nyl. Rocks; frequent.
63. *L. " oligocarpa* Nyl. Occasionally with the type.
64. *L. rufescens* Nyl. On rocks, throughout.
65. *L. smaragdala* Nyl. Sandstone, Santa Monica Range.

66. *L. obpallens* Nyl. On earth and occasionally on stones, Santa Monica Range. Bull. Torr. Bot. Club, Vol. 24, No. 9.
67. *L. pruinosa* Nyl. Calcareous rocks, Santa Monica.
68. *L. privigna* Nyl. Various rocks; common. Catalina Island.
69. *L. " revertens* Tuck. Granite; Mt. Lowe above Paradena; not frequent.
70. *L. simplex* Nyl. Sandstone, Santa Monica Range.
71. *L. xanthopana* Nyl. Rocks; common; Catalina Island; San Nicolas Island (*Blanche Trask.*)
72. *L. stenospora* Stiz. On granite, San Gabriel Mts. above 200 meters.
73. *L. schleicheri* Nyl. On clay, near San Bernardino (*S. B. Parish;*) near Elsinore.
74. *L. pleiospora* Nyl. On earth, near Soldiers' Home. Bull. Torr. Bot. Club, Vol. 24, No. 9. *pleiospora*
75. *L. pleiospora* Nyl. On clay, from the foothills ascending the mountains to 8-900 meters; at Elsinore.
Spores 8, colorless, 1-3 septate; sterigmata simple and spermatia arcuate.
76. *L. crysibe sincerior* Nyl. On rocks and bleached bones, San Nicolas Island (*Blanche Trask.*)

SUB-TRIBE II. PERTUSARIEI.

GEN. XXIV. PERTUSARIA Ach.

1. *P. lecanina* Tuck. On various barks mixed with the next following; frequent near Santa Monica.
2. *P. pustulata* Nyl. Trees; common.
3. *P. flavicunda* Tuck. Calcareous rocks, Santa Monica Range.
4. *P. wulfeni* DC. On bark in the higher mountains; Catalina Island.

GEN. XXV. PHLYCTIS Wellr.

1. *P. argena* Kaerb. On oak bark; on the mountains above 800 meters.

GEN. XXVI. URCEOLARIA Ach.

1. *U. scruposa* Nyl. Earth and rocks; common.
2. *U. gypsacea* Ach. On earth; rare.
3. *U. actinostoma* Pers. Rocks, Santa Monica and San Gabriel Mts. The proper exciple fusculent.

SUB-TRIBE III. LECIDEEI.

GEN. XXVII. LECIDEA Ach.

A. *Biatora* Fr.

Thallus squamulose; spores 8, colorless, simple, oblong or fusiform, sterigmata simple, spermatia straight.

1. *L. lurida* Ach. On earth in crevices of granite in the higher mountains; San Gabriel, San Bernardino (*S. B. Parish.*)
2. *L. globifera* Ach. On earth; common.

3. *L. luridella* Tuck. With the last preceding.
4. *L. scotopholis* (Tuck.) Nyl. Granitic rocks, Catalina Island.
5. *L. crenata* (Tuck.) Nyl. On earth, Slover Mountains, near San Bernardino (*S. B. Parish*). Near Elsinore.
6. *L. anthracophila* Nyl. On charred bark, San Bernardino Mts.
7. *L. querneae* Ach. On bark, near Santa Monica.
8. *L. coarctata* Nyl. On stones and earth; common and variable.
9. *L. flexuosa* Nyl. On a charred trunk of *Arctostaphylos*, Santa Monica Range.
10. *L. glebulosa* Fr. On Sandstone, near Soldiers' Home.
11. *L. parvifolia* Ach. On charred pine bark, Echo Mountain, near Pasadena.
12. *L. phaeophora* Stiz. Rocks, Catalina.
13. *L. varians* (Ach.) Barks; frequent.
14. *L. turgidula* Nyl. Back of Juglaus and *Onercus*, near Santa Monica.
15. *L. prasina* (Fr.) On redwood fence boards, near Los Angeles.
16. *L. cyrtella* Ach. Barks, near Santa Monica.
17. *L. atropurpurea* Mass. Bark of poplar, near Los Angeles.
18. *L. tricolor* Nyl. (*Biatora mixta* Fr.) On twigs, Catalina Island.
19. *L. franciscana* (Tuck.) Sandstone, Santa Monica Range.
20. *L. naegelii* (Heff.) On bark, Santa Monica Range.
21. *L. resinae* Fr. On bark of hemlock, near San Gabriel Mts.

B. *Eulecidea*.

‡ I. Spores colorless; thallus variously formed, granulose, rugose or wanting; spermatia arcuate.

22. *L. vesicularis* Ach. (*L. caeruleo-migricans* Schaer.) (*S. B. Parish*) San Bernardino, No. 3,582.
Spores 8, colorless, fusiform, 1-4 septate.
23. *L. squalida persimilans* Nyl. On rocks, San Gabriel Mts., at 1,800 meters alt. Bull. Torr. Bot. Club, Vol. 24, No. 9.
24. *L. sublugens* Nyl. (*Lecauora redimita* Stiz.) l. c. Catalina Island, *Heteromeles arbutifolia*, near Santa Monica; *Ercocarpus parvifolius* and *Umbellularia californica*.
25. *L. aromatica* Ach. Rock, Catalina Island.
Spores 8, colorless, simple, oblong or ellipsoid.
26. *L. enteroleuca theioplaca* Tuck. Calcareous rocks, near Santa Monica.
27. *L. enterolenca achrista* Summerf. On bark, near Santa Monica.
28. *L. catalinaria* Stiz. Sandstone, Catalina Island.
29. *L. prasiniza* Ach. Spores 0.012 long, 0.006 broad, ovoid ellipsoid. On a putrescent trunk of *Platinus*, near Santa Monica.
30. *L. latypea* Ach. Rocks, Catalina Island.
31. *L. colludens* Nyl. Stintose rocks, Santa Monica Mts.
32. *L. glaucopholis* Nyl. Spores oblong, ellipsoid, 0.012, long, 0.005 broad; apothecia black. On disintegrated granite and earth, San Gabriel Mts. at 1,000 meters.
33. *L. brandegei* Tuck. On granite rocks, San Gabriel Mts.
34. *L. massata* Tuck. On earth, near Elsinore.
35. *L. lapicida* Tuck. Calcareous rocks; frequent.
36. *L. declinans* Nyl. Calcareous rocks, Catalina Island.
37. *L. tessellata* Floerk. Conglomerate; near Santa Monica.

38. *L. auriculata* Th. Fr. Granitic rocks, Santa Monica Mts; near Elsinore.
39. *L. " paupera* Nyl. Rocks, near San Bernardino (*S. B. Parish*). No. 2,928.
40. *L. variegata* Fr. Rocks, San Gabriel and Santa Monica Mts.
41. *L. atrobrunnea* Schaer. Quartz rocks, near Elsinore.
42. *L. leucophaea* Tuck. Stipitose rocks, Santa Monica Mts.
43. *L. euphorea* Tuck. Thallus continuous, diffuse, cinerascens; spores ovoid-ellipsoid, 0.011 long, 0.006-7 broad; spermatia arcuate. On *Umbellularia californica*, San Gabriel Mts. at 1,000 meters alt.
44. *L. manni* Tuck. On granite, San Gabriel Mts.
Spores 8, oblong-ellipsoid or fusiform.
45. *L. alpestris* Sommerf. Granitic rock; spores simple, 1-3 septate; Santa Monica Mts.
Spores 8, fusiform-ellipsoid, 3 septate
46. *L. ablephora* Nyl. Sp. 0.023-27 long, 0.007-8 broad. On clay, Santa Monica Mts.
Spores 8, oblong, 2 septate.
47. *L. arthoniza* Nyl. sp. 0.020 long, 0.005 broad. On granite, San Gabriel Mts.
§ II. Spores brown or migrescent.
(*Buellia De Not.*) A. Thallus variously formed; not citrine; thallus radiata or laciniata; sp. brown, septate; spermatia arcuate.
48. *L. spuria* Arn. On rocks, Catalina Island.
49. *L. stellulata* Tayl. Rocks, Catalina Island and in the Mts.
Spores 1, rarely septate; spermatia straight, small.
50. *L. halonia* (Tuck.) Rocks, Catalina Island.
51. *L. bolacina* (Tuck.) Earth and calcareous rocks.
52. *L. semitensis* (Tuck.) Rocks, San Gabriel Mts. at 1,800 meters.
53. *L. lepidastra* (Tuck.) Calcareous and granitic rocks, Santa Monica Mts; near Elsinore.
54. *L. triphagmia* (Tuck.) On rocks and dead wood; rarely distributed.
55. *L. disciformis* Nyl. (*Buellia parasema* (Ach., Th. Fr.) On barks; common.
Spores 8, browg, typically 3 septate; spermatia straight on jointed sterigmata.
56. *L. albo-atra* (Hoffm.) On hemlock bark, San Gabriel Mts.
57. *L. " ambigua* Ach. Rocks, Catalina Island; common on slate rock in the Santa Monica Mts.
58. *L. " saxicola* Fr. Stintose rocks near Santa Monica.
59. *L. " f. pipolia* Nyl. On argyllaceous rock, near Soldiers' Home.
60. *L. aliena* Nyl. (*Buellia oidalea* Tuck.) On living bark and dead wood Catalina Island.
61. *L. " penichra* (Tuck.) Rocks, Santa Monica Mts.
62. *L. " pulchella* Schrad. Granite, San Gabriel Mts.
63. *L. pullata* (Tuck.) Rocks, Santa Monica Mts.
Spores 4-8, rarely 2 in thecis, migrescent; 3-5 septate or muriform.
64. *L. petraea* Flat. Rocks near Santa Monica.
65. *L. montagnaei* (Tuck.) Flot. On rocks, throughout; San Bernardino (*S. B. Parish*), No 2,919.

B. thallus citrinus.

Spores brown or migrescent, 1-3 septate and often muriform*

66. **L. geographica lecanorina** Floerk. Granitic rocks in the higher mountains.
67. **L. geographica** L. (Tuck.) f. *contigua* auctt. Granite, near San Bernardino (*S. B. Parish.*) No. 2,918. On slate rock, Santa Monica Mts.
- ‡ Parasytic Species.
68. **L. parmeliarum** Sommerf. On *Parmelis caxatilis* and *P. conspersa*, in the San Gabriel Mts.

GRAPHIDODEI.
TRIBE XVI. CRAPHIDEI.**GEN. XXVIII. LECANACTIS** Eschw.

1. **L. premnea** Tuck. On *Lycium californicum* and *Rhus integrifolia*, near San Pedro.
2. **L. californica** Tuck. On *Rhus integrifolia*, near San Pedro and Catalina Island.
3. **L. abietina** Tuck. On bark of *Abies*, San Gabriel Mts.

GEN. XIX. OPEGRAPHA Ach.

1. **O. atrorimalis** Nyl. On bark, near Santa Monica and Catalina Island.
2. **O. astraea** Tuck. On fence boards, near Compton (*A. J. McClatchie.*)
3. **O. atra** Pers. On *Umbellularia californica*, near Santa Monica.
4. **O. prosiliens** Strt. Same habitat as the last preceding.
5. **O. rimalis** Ach(On *Lycium californicum*, near San Pedro.

GEN. XXX. ARTHONIA Ach.

Apothecia brown or lighter color—not black; spores 1 septate.

1. **A. ochrolutea** Nyl. On dead twigs, near San Pedro.
2. **A. impolita chiodectionoides** Tuck, On *Alnus*, near Santa Monica.
3. **A. prunosella** Nyl. u. sp. (in litt) On bark of *Cordia*—a native of Brazil, in cultivation at agricultural experiment station at Santa Monica.
- Spores 1, septate; apothecia black.
4. **A. patellulata** Nyl. Near Santa Monica, on a cultivated acacia; on *Fraxinus oregana*, near San Bernardino (*S. B. Parish.*) No. 3,559.
5. **A. dispersa** Nyl. On oak, near Santa Monica; Catalina Island.
6. **A. dispersa cytisii** Mass. Oaks, Catalina Island.
7. **A. subdispuncta** Nyl. on stalk of *Leptosyne gigantea*, near Santa Monica. Bull. Torr. Bot. Club, Vol. 24, No. 9.
8. **A. lurida** Ach. On *Tilia americana*, (cultivated) Soldiers' Homes.
9. **A. galactites depnncta** Nyl. On dead stalk of *Ricinus communis*, Soldiers' Home.

Spores 3-5 septate.

10. *A. astroidea* Ach. Frequent.
" *swartziana* Nyl. On oak and walnut bark.
11. *A. punctiformis* Ach.
" *subeminula* Nyl.
12. *A. caudata* Willey.
13. *A. impolita* ~~*chiodectomoides* Tuck.~~
14. *A. diffusa* Nyl.
Spores muriform.
15. *A. anastomosans* (Ach.) Nyl. On oak bark, Catalina Island.
16. *A. spectabilis* Flot. On various barks, near Santa Monica.
17. *A. orbillifera* Ach. On *Heteromeles arbutifolia*, Catalina Island.

PYRENOIDEI.

GEN. XXXI. ENDOCARPON Hedw.

Spores simple and colorless.

1. *E. miniatum compliatum* Nyl. Rocks, San Bernardino (*S. B. Partsh*).
2. *E. rufescens* Ach. On earth; common, San Bernardino (*S. B. Parish*).
3. *E. hepaticum* Ach. On earth; common.
4. *E. lepidallum* Nyl. On earth. Thallus peltate, small, round-lobate, whitish, with a dark border; spores oblong-ellipsoid, 0.016 long, 0.017 broad. Near Soldiers' Home.
5. *E. tephroides* (Ach.) Nyl. Thallus radiately lobed, lobes undulate, brown; spores simple, ellipsoid, granular, 0.020-26 long, 0.008-10 broad. San Gabriel Mts.
Spores 2 in thecae, muriform, faintly brown.
6. *E. pallidum* Ach. On earth; common in Santa Monica Range.
7. *E. subnitescens* Nyl. Spores 0.048-64 long, 0.020 broad. On earth, near Santa Monica.
8. *E. adnatum* Nyl. Thallus of light brown squamae, apothecia innate, the black perithecium slightly prominent; spores muriform, decolorate 0.048-50 long, 0.018-20 broad. On disintegrated granite, near Santa Monica Range ("Barton's Peak").

GEN. XXXII. VERRUCARIA Pers.

Spores 8, colorless or decolorate, muriform; paraphyses none.

1. *V. intercedens* Nyl. Frequent on various rocks, near Santa Monica.
2. *V. verrucaria athioboloides* Nyl. With the type.
3. *V. submuralis* Nyl. Granite; San Gabriel Mts. at 1,200 meters.
Spores 8, colorless, muriform; paraphyses present.
4. *V. inductula* Nyl. On slate and other rocks in Santa Monica Range. Bull. Torr. Bot. Club, Vol. 24, No. 9.
5. *V. subcorallina* Nyl. On oak in the San Gabriel Mts.
Spores 8, colorless simple; paraphyses none.
6. *V. viridula* Ach. On calcareous rocks, near Santa Monica; Elsinore.
7. *V. nigrescens* Pers. Common on rocks.

8. *V. maura* Wahlenb. Calcareous rocks, San Pedro; Elsinore; Catalina Island (*Blanche Trask*.)
9. *V. rupestris* Schrad. Common on rocks.
10. *V. margacea* Wahlenb. On slate rock, Santa Monica.
11. *V. aethiobola* Wahlenb. Rocks, Santa Monica.
12. *V. integra* Nyl. On a calcareous pebble, Santa Monica.
13. *V. muralis* Ach. Rocks; common.
14. *V. aquilella* Nyl. On slate rocks, Santa Monica Range.
15. *V. squamælla* Nyl. Earth among moss, Santa Monica Range. Bull. Torr. Bot. Club, Vol. 24, No. 9
16. *V. calciseda* DC. Calcareous rocks in Santa Monica Range.
17. *V. plumbea* Acn. On sandstone, near Santa Monica and Elsinore.
Spores 8, colorless, simple; paraphyses present, slender.
18. *V. epigea* Ach. On clay near Soldiers' Home.
Spores 8, colorless, 3 septate; paraphyses present, slender.
19. *V. fallax* Nyl. On bark of poplar and sycamore.
20. *V. carpineæ plumbaria* (Stiz.) Nyl. Frequent on various barks near Santa Monica.
21. *V. salweii* Light. On calcareous pebble, near Soldiers' Home.
Spores 8, colorless, mostly fusiform and pluriseptate; paraphyses distinct.
22. *V. chlorotica* Ach. On calcareous rocks in Santa Monica Range.
Spore 8, brown, muriform.
23. *V. thelomorpha* (Tuck.) Common on bark of *Juglans californica* near Santa Monica.

ADDENDA.

- Roccella fuciformis** (L.) Ach. Catalina Island (*Blanche Trask*).
- Physcia** (**Theloschistes**) **aparietina** Schaer. **forma virescens** Nyl. Rocks Santa Monica Mts.
- Lecidea admiscens** Nyl. n. sp. Thallus of convex, light gray, lobate, squamules. The lobules entire or crenulate. Apothecia dark brown to black, with a lighter colored, persistent, sinuate margin. Hypothecium pale, fulvous. Spores simple, oblong-ellipsoid, 0.008 long and 0.0045 broad. "Prope *L. flexuosam* Fr. disponenda." On earth, San Bernardino Mts. (*S. B. Parish*).
- Lecidea atrolutescens** Nyl. n. sp. Thallus of thickish, cartilaginous squamules, distinct, rounded, with undulate or lobulate margins, or the squamules contiguous and then angular, buff or light brown color with a white margin. Apothecia middling to large, convex, black, pruinose with a lighter colored permanent, and very sinuate margin. Sp. simple, colorless; 0.010-12 m. millim, long. 0.005 thick. On granite, San Gabriel Mts. at 1,500 meters alt. Original locality at "Martin's Camp," Mt. Wilson.
- Lecidea fuscato atra** Nyl. n. sp. Thallus squamulose, the squamules small, round or sinuate, thin, separate or contiguous, flesh color. Apothecia larger than squamules, flat or slightly convex, discolored blueish black, pruinose with a thick, prominent, permanent, sinuate margin. Sp. colorless, 0.0010-12 m. millim long, and 0.003-4 thick. Simple or falsely one septate. On granite, San Gabriel Mts. at 1,800 meters alt. Original locality, "Martin's Camp," Mt. Wilson.
- Arthonia galactitella** Nyl. Pyr. or. Pag. 89. On bark of Oleander and Apricot, Soldiers' Home. Sp. 1 to 3 septate.
- Mycoporum epistigmallum** Nyl. n. sp. "in epithecio *Lacanora festiva* parasitula." Near Soldiers' Home.
- Verrucaria integrella** Nyl. f. terrestris Nyl. Near Soldiers' Home.
- V. bacillosa** Nyl. n. sp. "Facile proprii generis novi. *Gonidimia parvula* Sporae bacilliformis." Sp. simple linear oblong, 0.040 m. millim. long, 0.002 thick. Fo. paraphyses. On soft sandstone, Santa Monica Mts.
- Lecidea atroalbula** Nyl. (*Lichenes des environs de Paris*, p. 99.)

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