Thallus with soralia. .....

2. Soralia with yellow or pinkish tinge, P, K, KC+ red, C+ red, UV± glaucous or pale yellow. Containing Schizopeltic acid and satellites, or gyrophoric acid and trace of lecanoric acid, or both, unidentified xanthone. Thallus brownish or yellowish brown overall; soralia numerous, punctiform. On humid, often ± vertical or overhanging, neutral or acid rock faces, especially in old woodlands; scarce on deciduous or conifer bark. Queen Charlotte Islands and Nova Scotia. Probably belongs in Lecanactis. ..... "Opegrapha" gyrocarpa Flot.

2. Soralia dark brown to ± lilacwhite, pale when abraded, P, K, KC, C, UV, rarely UV± deep blue. Containing confluentic, 2'Omethylmicrophyllinic and 2'Omethylperlatolic acids. Thallus thin to rather thick, smooth, even, or finely cracked, superficial, dark chocolate brown with ± distinct lilac tinge, often delimited by black prothalline line; soralia punctiform, rarely confluent, (0.2)0.51(1.5) mm diam., Pycnospores 56 x 0.5 um, straight. On steep, deeply shaded, overhanging, siliceous rocks in humid situations, rarely on shaded, smooth, deciduous bark. Nova Scotia. ..... (Enterographa zonata)

1. Thallus pulvinate, C+ red, not radiating, various shades of brown, often (?) gray or bluegray pruinose, often blackened by fungal parasite, developed from stems which branch from rootlike, finally flattened stipes, black below; forming small irregular clumps 815(25) mm or more across, to 1015 mm tall when well developed, with domelike or irregularly rounded surface, or ± flattened; on closer examination the surface is seen to be madde up of a great number of small to minute, closely appressed, and highly irregular, plicate, or even imbricate, lobulate squamules. Thallus continuous, probably determinate, sublobate to subareolate, at the margin thin, 0.5 mm, thicker toward center; aroeles (0.5)11.5 mm broad, 0,40.6 mm thick not including the stipe, very irregular in shape and size, with rounded edges, often with a ± deep partly furrowlike cut into the areole, therefore sublobate or intestiniform, on the whole plane, smooth. Upper cortex (30)5065(80) um thick; cells 1.72(2.5) um. Algal layer continuous, 100(150) um thick. Pycnospores 22.5 x 11.5 um, broadly ellipsoid. California. (A. thermophila, which is pale and color and composed of short, branched stipes would also key out here, if it is C+ red) ..... Acarospora thamnina

1. Thallus not pulvinate. Squamules scattered to contiguous, not stipitate, lobulate or imbricate. 2

2. Thallus K+ red. Spores not developed. Thallus 310 mm wide; areoles 11.5 mm wide, plane, irregular, black below, C. Apothecia ± abundant, 316 per areole, 0.2 mm diameter. Cortex 2530 um, the cells 34 um diameter.
Mexico. ..... Acarospora cratericola

2. Thallus K. 3

3. Cortex C+ red. Parasitic on other lichens. Areoles plane, dark below, dark brown above, thin, partly dispersed, 0.50.8 mm across, 0.30.4 mm thick, variable in shape, mostly angular, plane, distinctly and rather narrowly peltate. Cortex thin, 1522 um; cells 23 um. On lichens (Dimelaena) on siliceous rock. New Mexico. .....Acarospora succedens

3. Thallus C. Cortical cells 34.5 um. Thallus delimited, the areoles plane, castaneous brown. Thallus forming continuous, ± distinctly limited areas to at least 4 cm braod, or groups only a few mm wide, or areoles ± scattered among and upon other lichens, 0.50.7 mm across, 0.30.5 mm thick, dark (or in shade very pale), in open situations ± shiny, smooth, plane, angular, separated by very thin cracks, closely adnate, nongomphate, pale below. On sandstone, New Mexico. .....Acarospora applanata

1. Thallus C (but apothecia in section and pycnidia C+ red, with gyrophoric acid), beige (pale fawn), yellowgray, pale yellowish or ochre, granularverrucose, sometimes secondarily cracked, Pycnidia ca. 5080 um diam., often numerous, immersed in thalline warts; conidia 56 x 0.7 um, bacilliform. On sheltered, ± metalrich, siliceous rocks, especially basalts and pebbles in moorlands. ..... Trapelia mooreana

1. Thallus usually C+ red (gyrophoric acid). 2

2. Thallus sorediose, often sterile, thin to thickish, cracked or areolate. 3

2. Thallus not sorediose. 4

3. Thallus conspicuous, forming small, ± delimited patches or an extensive crust to 15 cm across, white or pinktinged, matt; edge usually with discrete, ± effigurate, flat or ± convex areoles 0.20.4(0.6) mm diam., giving the thallus a placodioid appearance, towards center areoles coalesce, the thallus then becoming secondarily cracked. Soralia 0.20.3 mm diam., numerous, pale greenish or yellowish white, rarely ochraceous, usually developing from sides of areoles or cracks in thallus; soredia 2030 um diam., farinose. On hard siliceous rocks, minespoil heaps and walls. Apparently pollution tolerant (does well in the Bronx, New York City). Common in Michigan and New York, and probably elsewhere in eastern U.S. ..... Trapelia placodioides

3. Thallus inconspicuous, uneven, of ± scattered, often convex areoles or squamules, dark gray, olivaceous, pale green ± suffused ochraceous brown, pinkbrown to brownish; margin diffuse; soralia excavate to slightly convex, 0.20.4 mm diam. Apothecia often present. On siliceous rocks, stones, or more rarely plant debris. .....Trapelia obtegens

4. Thallus areolate, effigurate or subsquamulose, marginally crenate to lobed, often lumpysquamulose, smooth or minutely rugose, mostly beige, gray or brownish whitish; areoles ± convex, often ± overlapping; marginal squamules 0.20.4 mm wdie and 0.040.15(0.12) mm thick, contorted, sometimes in irregular, knotted clusters. On siliceous rocks. ..... Trapelia involuta

4. Thallus effuse and continuous to cracked or areolate, never distinctly effigurate at edge; areoles mostly contiguous but sometimes dispersed and ± squamulose at margins, smooth to ± rugose, thin, not marginally crenate to lobed, whitish to gray, greenwhite or brownish often tinged pinkish, K, P; prothallus ± present, white. On siliceous rocks and stones, brickwork,

occasionally on consolidated caly soil. Very variable; distinguished by the even, smooth to areolate, noneffiugrate thallus. Immature apothecia may appear as scattered, starkly white, punctiform dots. ..... Trapelia coarctata