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Very deep water coralline algae from the Island of Hawaii

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Living coralline algae occur from 150 to 207 m depth around the Island of Hawaii. Samples of these algae were collected during geological surveys of the sea floor using the *Makalii* and *Pisces* submarines between Kealakekua Bay and Keawekaheka (west side of Hawaii) and Ka Lee (South Point), in the 80's, and ROV dives (*Tiburon*) off Kawaihae and Kealakekua Bay at the western side of the island in 2001. Video records complete the information on the sampling sites. Corallines form thin, pink veneers covering the surface of outcrops of volcanic rocks or drowned ancient coral reefs. Coralline plants are small (millimetres to a few centimetres wide) and very thin (less than 0.25 mm in thickness) encrusting thalli. Almost all collected plants lack reproductive structures and thus their identification is difficult. Two morphological groups can be recognised under the electron microscope in the algal assemblages. Very thin plants (less than 100 microns thick) with abundant cell fusions and flared epithallial cells probably belong to the melobesiod genus *Lithothamnion*. The other group includes thicker plants (up to 250 microns) with both cell fusions and secondary pits. The occurrence in one example of sporangial chambers grouped in a sorus suggests that these plants correspond to sporolithaceans.