SEARCH FOR VIABLE ORGANISMS IN LUNAR SAMPLES: FURTHER BIOLOGICAL STUDIES ON APOLLO 11 CORE, 12 BULK, AND 12 CORE SAMPLES

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Abstract. No discernible growth of organisms was obtained from lunar samples either sprinkled directly upon petri dishes containing media or from membrane filters containing fine samples obtained from a gas flotation technique. Colored zones similar in appearance to those from earlier Apollo 11 bulk fines appeared in agar culture media around some of the particles. Results of tests of $^{14}CO_2$ evolution from labelled organics and $^{14}CO_2$ fixation did not indicate biological activity. Although there was production of H_2 when medium was added to lunar sample, the rate and amount of gas produced contraindicated biological processes. Lunar samples did not inhibit the growth of selected terrestrial microorganisms, but diffusion of material from the lunar sample enhanced the production of the pigment prodigiosin from Serratia marcescens and inhibited the production of fluorescent pigment by Pseudomonas aeruginosa. The pigment responses were evoked also by additions of ferric and ferrous salts.