

THE DOMESTICATION AND CULTIVATION OF CALIFORNIAN MACROALGAE

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Introduction

In order to devise a cultivation strategy that would allow one to plant, cultivate and harvest a macroalgal crop, one must define the plant requirements for light, space and nutrients and ensure that they are met. In attempting to do this at Santa Barbara, we have taken an ecological approach, by first studying the natural habitats where macroalgae occur, and paying particular attention to the patterns of plant distribution that occur in the sea. We have made diving surveys of kelp forests along the U. S. West coast, and have studied their macroscopic and microscopic features. We have grown plants in dish and tank culture in the laboratory. Recently we have experimentally planted in the sea (1). Our goal is to use ecological information as a basis for developing a new "maricultural ecology" that will be a basis for effective marine farming.

Studies of Algal Habitats

The Macrocystis forests of California were first explored by diving in the early 1950's, when scuba equipment became available. At that time it was my privilege to work with W. J. North, and to have the aid and guidance of the late E. Y. Dawson. Each new forest that we explored seemed to be unique and different from all others (2). Our preliminary reconnaissance and floristic work was augmented by the use of line transects, which provided quantitative and diagrammatic views of the habitats being studied