

MARINE BIOLOGY

Program Description Fall Quarter 1979

Group Contract - Fall, 1979. Dave Milne, Niels Skov, Peter Taylor, Faculty. Animals and plants of the open sea and coastal waters were surveyed, with emphasis on marine invertebrates. Marine algae and vertebrates were considered briefly. Physical and chemical properties of the sea, and their relation to marine life, were discussed, and the adaptations of organisms to oceanic life were also studied. This program included lectures, films, reading, seminars, laboratory studies, and field experience.

Lectures and Films. Topics of lectures by the faculty were: ocean habitats, plankton, history of marine science, cnidarians, formation of earth and ocean basins, worms, the relationship of weather to the sea, arthropods, ocean circulation, marine plants, waves and tides, molluscs, sediments, echinoderms, biological productivity of the oceans, fishes, pollution of the marine environment, and Puget Sound oceanography. A lecture on surf diatoms (J. Lewin) was also attended. Films shown were: The Restless Sea (oceanography), Signals for Survival and The Mussel Specialist (sea bird behavior), and Ecology of a Tidal Slough.

Texts. (1) Barnes, R. D. 1974. Invertebrate Zoology. (2) Kozloff, E. N. 1973. Seashore Life of Puget Sound, the Strait of Georgia, and the San Juan Archipelago. (3) Kozloff, E. N. 1974. Keys to the Marine Invertebrates of Puget Sound, the San Juan Archipelago, and Adjacent Regions. (4) Sumich, J. L. 1976. Introduction to the Biology of Marine Life. (5) Carefoot, Thomas. 1977. Pacific Seashores: A Guide to Intertidal Ecology. (6) (optional). Davis, R. A. Principles of Oceanography.

Seminars and Study Questions. Weekly sessions were held during the first half of the quarter to review and discuss assigned reading. Study questions based on the reading were assigned for written responses and discussion.

Field Trips. Field trips were conducted to the Seattle Aquarium, a southern Puget Sound beach, and a salt marsh. On San Juan Island, the class visited the Whale Museum, a rocky shore (Cattle Point), marina floats (Friday Harbor), and viewed coastal land forms. A boat trip was scheduled on the 55-foot Hydah for dredging and bottom trawling among the San Juan Islands, for some students.

Laboratories. At TESC, scheduled lab sessions were held on plankton, marine algae, decapod and molluscan anatomy, use of taxonomic keys, arthropods, annelid worms, and epifaunal invertebrates. Field activities were scheduled in conjunction with some lab sessions to collect the organisms and to demonstrate techniques of plankton sampling and beach seining. Nine days were spent at the Friday Harbor labs (University of Washington), San Juan Island. Unscheduled laboratory time was available there for "species accounts" studies (see below) and a 24-hour plankton sampling exercise was conducted.

Journals and Species Accounts. Strong emphasis was given to the development of effective detailed records of observations in laboratory and field journals. In addition, each participant was expected to compile accounts of the biology of 20 different species, drawing information from the laboratory and field journals and from published references.

Vertical Migration Project. Certain students conducted a detailed review of the literature of the plankton vertical migration phenomenon. These persons wrote chapters of a comprehensive essay on this phenomenon, and presented their findings orally to the class. These participants were students with previous exposure to oceanography.