

PUBLICATIONS  
July 1, 1978 to December 31, 1979

- Ally, R.J.R., and S.A. Keck. 1978. A biochemical-genetic population structure study of market squid, *Loligo opalescens*, along the California coast. Calif. Dept. Fish Game, Fish. Bull., (149):113-121.
- Alvarino, A. 1976. Predation on coelenterates: Siphonophoræ and Chondrophoræ. Abstracts III. Intern. Symp. Biol. of Coelenterates, B.C. Canada.
- \_\_\_\_\_. 1976. Distribución batimétrica de *Pleuroncodes planipes* Stimpson (Crustacea, Galatheidae). Mem. Simp. Biol. Dinamica de Poblaciones de Camarones. Guaymas, Mexico, p. 266-285.
- \_\_\_\_\_. 1976. El zooplancton y la pesca. Mem. Simp. sobre recursos pesqueros masivos de México, Ensenada, B.C. 28-30 Sept. 1976, p. 279-293.
- \_\_\_\_\_. 1977. Depredación en el plancton y las pesquerías. Mem. II. Simp. Latinoamericano Oceanogr. Biol., Caracas, Venezuela, p. 139-160.
- \_\_\_\_\_. 1977. Indicadores planktonicas: La distribución batimétrica de algunas medusas. Mem. II Simp. Latinoamericano Oceanogr. Biol., Caracas, Venezuela, p. 161-190.
- \_\_\_\_\_. 1978. *Spadella gaetanoi*, a new benthic chaetognath from Hawaii. Proc. Biol. Soc., Wash. 91(3):652-657.
- Azam, F., J.R. Beers, L. Campbell, A.F. Carlucci, O. Holm-Hansen, F.M.H. Reid, and D.M. Karl. 1979. Occurrence and metabolic activity of organisms under the Ross Ice Shelf, Antarctica at Station J-9. Science 203: 451-453.
- Benson, A.A. 1978. Nature's starvation insurance. Calypso Log 5(1):4.
- \_\_\_\_\_. 1979. 'This Week's Citation Classic' The path of carbon in photosynthesis. V. Paper chromatography and radioautography of the products. Current Contents 10(31):16.
- \_\_\_\_\_. 1979. The ocean has its bexoar, too. (Paraphrased by Rosa Besser, TCS Editor, as "Emperors, Goats & Algae.") Calypso Log 6(2):5, 21.
- Benson, A.A., J.S. Patton, and S. Abraham. 1978. Energy exchange in coral reef ecosystems. Atoll Res. Bull. 220:33-53.
- Bernstein, B.B., R.R. Hessler, R. Smith, and P.A. Jumars. 1978. Spatial dispersion of benthic foraminifera in the abyssal central North Pacific. Limnol. Oceanogr. 23:401-416.
- Blanquet, R.S., J.C. Nevensel, and A.A. Benson. 1979. Acetate incorporation into the lipids of the anemone *Anthopleura elegantissima* and its associated zooxanthellae. Mar. Biol. 54:185-194.
- Bostik, F.X., C.S. Cox, and E.C. Field, Jr. 1978. Land-to-sea floor electromagnetic transmissions in the 0.1-15 Hz band. Radio Science 13(4): 701-708.
- Brewer, G.D. 1978. Reproduction and spawning of the northern anchovy, *Engraulis mordax*, in San Pedro Bay, California. Calif. Fish Game, 64(3):175-184.
- Brinton, E. 1979. Parameters relating to the distributions of planktonic organisms, especially euphausiids in the eastern tropical Pacific. Prog. Oceanogr. 8(3):125-189.
- Brown, D.E. 1979. The electric Bongo net. Institution of Marine Resources Marine Technician's Handbook, IMR TR 63, 16 p.
- \_\_\_\_\_. 1979. The manta net: quantitative neuston sampler. Institute of Marine Resources Marine Technicians' Handbook, IMR TR 64, 15 p.
- Cailliet, G.M., K.A. Karpov, and D.A. Ambrose. 1979. Pelagic assemblages as determined from purse seine and large midwater trawl catches in Monterey Bay and their affinities with market squid, *Loligo opalescens*. Calif. Coop. Oceanic Fish. Invest. Rep. 20:21-30.
- Carlucci, A.F., and P.M. Williams. 1978. Simulated in situ growth rates of pelagic marine bacteria. Naturwissenschaften 65:541-542.
- Cheng, L. 1978. The marine midge *Pontomyia* (Diptera: Chironomidae) with a description of females of *P. oceana* Tokunaga. Syst. Entomol. 3:189-196.
- \_\_\_\_\_. 1978. Biting midges (Diptera: Ceratopogonidae) and other insects of Isla San Jose. Trans. CIBCASIO Ann. Meet., 3:1-16.
- \_\_\_\_\_. 1978. Seabirds, seaskaters, and cadmium. Pacific Seabird Group Bull. 5(2):70 (abstract).
- Cooney, R.V., R.O. Mumma, and A.A. Benson. 1978. Arsoniumphospholipid in algae. Proc. Nat. Acad. Sci. 75:4262-4264.
- Eppley, R.W. 1978. Nitrate reductase in marine phytoplankton. In J.A. Hellebust and J.S. Craigie (eds.), Handbook of phycolgical methods. Physiological and Biochemical Methods. Cambridge Univ. Press, p. 218-223.
- \_\_\_\_\_. 1978. Nitrate uptake. In J.A. Hellebust and J.S. Craigie (eds.), Handbook of phycolgical methods. Physiological and biochemical Methods. Cambridge Univ. Press, p. 402-409.
- Eppley, R.W., P. Koeller, and G.T. Wallace Jr. 1978. Stirring influences the phytoplankton species composition within enclosed columns of coastal seawater. J. Exp. Mar. Biol. Ecol. 32:219-239.
- Eppley, R.W., E.H. Renger, and W.G. Harrison. 1979. Nitrate and phytoplankton production in southern California coastal waters. Limnol. Oceanogr. 24(3):483-494.
- Eppley, R.W., C. Sapienza, and E.H. Renger. 1978. Gradients in phytoplankton stocks and nutrients off southern California in 1974-76. Estuar. Coast. Mar. Sci. 7:291-301.
- Eppley, R.W., and C.S. Weiler. 1979. The dominance of nanoplankton as an indicator of marine pollution: a critique. Oceanologica Acta 2(2):241-245.
- Fine, R.A., J.L. Reid, and H.G. Östlund. 1978. Penetration of tritium into the Pacific thermocline. EOS, Trans. Amer. Geophys. Un., 59(12):1105.
- Fleminger, A. 1979. *Labidocera* (Copepoda, Calanoida): New and poorly known Caribbean species with a key to species in the western Atlantic. Bull. Mar. Sci. 29(2): 170-190
- Frey, H.W., and C.W. Recksiek. 1978. Summary of squid research program. Calif. Dept. Fish Game, Fish Bull. (149):171-172.
- Galapagos Biology Expedition Participants. 1979. Galapagos '79: Initial findings of a deep-sea biological quest. Oceanus 22:2-10.
- Hardwick, J.E., and J.D. Spratt. 1979. Indices of availability of market squid, *Loligo opalescens*, to the Monterey Bay fishery. Calif. Coop. Oceanic Fish. Invest. Rep. 20:35-39.
- Haugsness, J.A., and R.R. Hessler. (in press) A revision of the subfamily Syneurycopinae (Isopoda, Asellota, Eurycopidae) with a new species (*Bellabos buzzwilsoni*). Trans. San Diego Nat. Hist. Soc.
- Haury, L.R., M.G. Briscoe, and M.H. Orr. 1979. Tidally generated internal wave packets in Massachusetts Bay. Nature 278(5702):312-317.
- Hemingway, G.T. 1979. A description of the California Current ecosystem by factor analysis. Calif. Coop. Oceanic Fish. Invest. Rep. 20:164-183.
- Hessler, R.R., C.L. Ingram, A.A. Yananos, and B.R. Burnett. 1978. Scavenging amphipods from the floor of the Philippine Trench. Deep-Sea Res. 25:1029-1047.
- Hessler, R.R., and P.A. Jumars. 1979. The relation of benthic communities to radioactive waste disposal in the deep sea. Ambio Spec. Rep. 6:93-96.

## PUBLICATIONS

CalCOFI Rep., Vol. XXI, 1980

- Hessler, R.R., G.D. Wilson, and D. Thistle. 1979. The deep-sea isopods: A biogeographic and phylogenetic overview. *Sarsia* 64: 67-75.
- Holm-Hansen, O., F. Azam, L. Campbell, A.F. Carlucci, and D.M. Karl. 1978. Microbial life beneath the Ross Ice Shelf. *Antarctic J., U.S.* 13(4):129-130.
- Hunter, J.R., J.H. Taylor, and H.G. Moser. 1979. Effect of ultraviolet irradiation on eggs and larvae of the northern anchovy, *Engraulis mordax*, and the Pacific mackerel, *Scomber japonicus*, during the embryonic stage. *Photochem. Photobiol.* 29:325-338.
- Huppert, D.D. 1978. Economic constraints on food production from the sea. In P.N. Kaul and C.J. Sinderman (eds.), *Drugs and food from the sea: myth or reality?* Univ. Oklahoma Press, Norman.
- Isaacs, J.D., G.L. Wick, and W.R. Schmitt. 1978. Utilization of the energy from ocean waves. Presented at ERDA Wave and Salinity-Gradient Energy Conversion Workshop, May 1976, Univ. Delaware (Proc. published as ERDA Rep. No. C00-2946-1, Conf. 760564: R. Cohen and E. McCormick, eds.). Also Univ. Calif. Inst. Mar. Res., IMR Ref. No. 78-3, 37 p. (revision of 76-10).
- Johnson, M.W. 1978. On scyllarid lobster larvae of the South China Sea (Decapoda, Scyllaridae). *Crustaceana* 34(3):269-274.
- \_\_\_\_\_. 1979. On a North Pacific *Scyllarus* phyllosoma larva with a forked telson (Decapoda, Scyllaridae). *Bull. Mar. Sci.* 29(4): 592-597.
- Karpov, K., and G.M. Cailliet. 1978. Feeding dynamics of *Loligo opalescens*. *Calif. Dept. Fish Game, Fish Bull.* (149):45-65.
- \_\_\_\_\_. 1979. Prey composition of the market squid, *Loligo opalescens* Berry, in relation to depth and location of capture, size of squid, and sex of spawning squid. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:51-57.
- Kashiwada, J., C. Recksiek, and K. Karpov. 1979. Beaks of the market squid, *Loligo opalescens*, as tools for predator studies. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:65-69.
- Klingbeil, R.A. 1979. Review of the pelagic wet fisheries for 1976 with notes on the history of these fisheries. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:6-9.
- \_\_\_\_\_. 1979. Review of the pelagic wet fisheries in 1977. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:10-12.
- Lasker, R. 1978. The relation between oceanographic conditions and larval anchovy food in the California Current: Identification of factors contributing to recruitment failure. *Rapp. P.-v. Reun. Cons. int. Explor. Mer* 173:212-230.
- \_\_\_\_\_. 1978. Ocean variability and its biological effects—regional review—northeast Pacific. *Rapp. P.-v. Reun. Cons. int. Explor. Mer* 173:168-181.
- \_\_\_\_\_. 1979. The effect of weather and other environmental variables upon larval fish survival leading to recruitment of the northern anchovy. *Climate and Fisheries. Proc. Workshop Influence of Environmental Factors on Fish. Problems. Univ. Rhode Island*, p. 127-129.
- Lasker, R., and J.R. Zwiemel. 1978. Growth and survival of first feeding northern anchovy larvae (*Engraulis mordax*) in patches containing different proportions of large and small prey. In J.H. Steele (ed.), *Spatial pattern in planktonic communities*. Plenum Press, New York, p. 329-354.
- Loeb, S., M.R. Bloch, and J.D. Isaacs. 1978. Salinity power, potential and processes, especially membrane processes. In H. Charnock and G. Deacon (eds.), *Advances in oceanography*. (Presented general Symposia at the Joint Oceanographic Assembly, 13-24 Sept., 1976, Edinburgh, Scotland.) Plenum Press, New York, p. 267-288.
- MacCall, A.D. 1978. A note on production modeling of populations with discontinuous reproduction. *Calif. Fish Game* 64(3):225-227.
- \_\_\_\_\_. 1979. Population estimates for the waning years of the Pacific sardine fishery. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:72-82.
- Mais, K.F. 1978. California Department of Fish and Game Assessment of commercial fisheries resources cruises, 1977. *Calif. Coop. Oceanic Fish. Invest. Data Rep.*, (27):1-119.
- \_\_\_\_\_. 1979. California Department of Fish and Game assessment of commercial fisheries resources cruises, 1978. *Calif. Coop. Oceanic Fish. Invest. Data Rep.* (28):1-52.
- Maruo, B., A.A. Benson, I. Shibuya and T. Akazawa. 1979. Aspirations for international exchange in science [in Japanese]. *Chem. and Biol. (KASESS)*, 17(10):642-659.
- Matsui, T., and R.H. Rosenblatt. 1979. Two new searsid fishes of the genera *Maulisa* and *Searsia* (Pisces: Salmoniformes). *Bull. Mar. Sci.* 29(1):62-78.
- McGowan, J.A., and P.W. Walker. 1979. Structure in the copepod community of the North Pacific central gyre. *Ecol. Monogr.* 49(2): 195-225.
- McLain, P.R., F. Favorite, and R.J. Lynn. 1979. Marine environmental conditions off the Pacific coast of the United States, Jan. 1977-Mar. 1978. *Mar. Fish. Rev.* 41(5-6):48-69.
- Methot, R.D., Jr., and D. Kramer. 1979. Growth of northern anchovy, *Engraulis mordax*, larvae in the sea. *Fish. Bull., U.S.* 77(2):413-423.
- Moffat, N.M., and D.A. Thomson. 1978. Reciprocal hybridization between the California and Gulf of California grunions, *Leuresthes tenuis* and *Leuresthes sardina* (Atherinidae). *Fish. Bull., U.S.* 76(2): 476-480.
- Olson, R.J., B.M. Tebo, E. Moussalli, A.F. Carlucci, F. Azam, and O. Holm-Hansen. 1978. Microbial investigations in the Ross Sea. *Antarctic J., U.S.* 13(4):130-131.
- Olsson, M., G.L. Wick, and J.D. Isaacs. 1979. Salinity gradient power: Utilizing vapor pressure differences. *Science* 206:452-454.
- Radovich, J., and A.D. MacCall. 1979. A management model for the central stock of the northern anchovy, *Engraulis mordax*. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:83-88.
- Recksiek, C.W., and H.W. Frey (eds.). 1978. Biological, oceanographic, and acoustic aspects of the market squid, *Loligo opalescens* Berry. *Calif. Dept. Fish Game, Fish Bull.* (169):1-185.
- \_\_\_\_\_. 1978. Background of market squid research program, basic life history, and the California fishery. *Calif. Dept. Fish Game, Fish Bull.* (149):7-9.
- Reid, F.M.H., E. Stewart, R.W. Eppley, and D. Goodman. 1978. Spatial distribution of phytoplankton species in chlorophyll maximum layers off southern California. *Limnol. Oceanogr.* 23(2):219-226.
- Reid, J.L. 1978. On the middepth circulation and salinity field in the North Atlantic Ocean. *J. Geophys. Res.* 83(C10):5063-5067.
- \_\_\_\_\_. 1978. On the middepth circulation and the north Pacific Ocean. *J. Phys. Oceanogr.* 8(6):946-951.
- Reid, J.L., and J.B. Graham. 1979. Effect of swimming speed on the excess temperatures and activities of heart and red and white muscles in the mackerel, *Scomber japonicus*. *Fish. Bull., U.S.* 76(4):861-867.
- Reid, J.R., and A.W. Mantyla. 1979. On the deep circulation of the Pacific Ocean. *EOS, Trans. Amer. Geophys. Un.* 60(46):859.
- Rossi, S.S., G.W. Rommel, and A.A. Benson. 1978. Hydrocarbons in sand crabs (*Emerita analoga*) from southern California (U.S.A.). *Chemosphere* 2:131-141.

## PUBLICATIONS

CalCOFI Rep., Vol. XXI, 1980

- \_\_\_\_\_. 1978. Hydrocarbons of *Macrocystis pyrifera* blades. *Phytochem.* 17:1431-1432.
- Schmitt, W. 1979. Utilization of wave energy. *Iowa Science Teachers J.* 16(1):33-36.
- Schulz-Baldes, M., and L. Cheng. 1979. Uptake and loss of radioactive cadmium by the sea-skater *Halobates robustus* (Heteroptera: Gerridae). *Mar. Bio.* 52:253-258.
- Shanks, A.L., and J.D. Trent. 1979. Marine snow: microscale nutrient patches. *Limnol. Oceanogr.* 24(5):850-854.
- Simpson, J.J., and C.A. Paulson. 1979. Mid-ocean observations of atmospheric radiation. *Quart. J. Roy. Meteor. Soc.* 105:487-502.
- \_\_\_\_\_. 1979. Observations of upper ocean temperature and salinity structure during the POLE Experiment. *J. Phys. Oceanogr.* 9(5):869-884.
- Smith, P.E. 1978. Biological effects of ocean variability: time and space scales of biological response. *Rapp. P.-v. Réun. Cons. int. Explor. Mer* 173:117-127.
- Smith, P.E., and R. Lasker. 1978. Position of larval fish in an ecosystem. *Rapp. P.-v. Réun. Cons. int. Explor. Mer* 173:77-84.
- Smith, P.E., and S.L. Richardson. 1979. Selected bibliography on pelagic fish egg and larva surveys. *FAO Fish. Circ.*, 706, 97 p.
- Spratt, J.D. 1978. Age and growth of the market squid, *Loligo opalescens* Berry, in Monterey Bay from statoliths. *Calif. Dept. Fish Game, Fish Bull.* (149)35-44.
- \_\_\_\_\_. 1979. Age and growth of the market squid, *Loligo opalescens* Berry, from statoliths. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:58-64.
- Sumida, B.Y., E.H. Ahlstrom, and H.G. Moser. 1979. Early development of seven flatfishes of the eastern North Pacific with heavily pigmented larvae (Pisces, Pleuronectiformes). *Fish. Bull., U.S.* 77(1):105-145.
- Tont, S.A. 1978. Sea level-air temperature correlations near a coastal zone. *Nature* 276(5684):171-172.
- Tont, S.A., and T. Platt. 1979. Fluctuations in the abundance of phytoplankton on the California coast. *In* E. Naylor and R.G. Hartnoll (eds.), *Cyclic phenomena in marine plants and animals*. Pergamon Press, Oxford and New York, p. 11-18.
- Vaughn, D.L. 1978. The target strength of individual market squid, *Loligo opalescens*. *Calif. Dept. Fish Game, Fish Bull.* (149):149-159.
- Vaughn, D.L., and C.W. Recksiek. 1978. An acoustic investigation of market squid, *Loligo opalescens*. *Calif. Dept. Fish Game, Fish Bull.* (149):135-147.
- \_\_\_\_\_. 1979. Detection of market squid, *Loligo opalescens*, with echo sounders. *Calif. Coop. Oceanic Fish. Invest. Rep.* 20:40-50.
- Venrick, E.L. 1978. Sampling strategies. Section 2.1 *In* A. Sournia (ed.), *Phytoplankton manual. Monographs on Oceanographic Methodology*, 6, UNESCO, Paris, p. 7-16.
- \_\_\_\_\_. 1978. Water bottles, Section 3.1, *In* A. Sournia (ed.), *Phytoplankton manual. Monographs on Oceanographic Methodology*, 6, UNESCO, Paris, p. 33-40.
- \_\_\_\_\_. 1978. The implications of subsampling. Section 5.1, *In* A. Sournia (ed.), *Phytoplankton manual. Monographs on Oceanographic Methodology*, 6, UNESCO, Paris, p. 75-87.
- \_\_\_\_\_. 1978. Statistical considerations. Section 8.2, *In* A. Sournia (ed.), *Phytoplankton manual. Monographs on Oceanographic Methodology*, 6, UNESCO, Paris, p. 238-250.
- \_\_\_\_\_. 1979. The lateral extent and characteristics of the North Pacific central environment at 35°N. *Deep-Sea Res.* 26A:1153-1178.
- Weiler, C.S., and R.W. Eppley. 1979. Temporal pattern of division in the dinoflagellate genus *Ceratium* and its application to the determination of growth rate. *J. Exp. Mar. Biol. Ecol.* 39:1-24.
- Wick, G.L., and D. Castel. 1978. The Isaacs wave-energy pump: Field tests off the coast of Kaneohe Bay, Hawaii, Nov. 1976-Mar. 1977. *Ocean. Engng.* 5:235-242.
- Wick, G.L., and J.D. Isaacs. 1978. Utilization of the energy from ocean waves. (Presented ERDA Wave and Salinity Gradient Energy Conversion Workshop, May 1976, Univ. Delaware, Proc. published as ERDA Rep. No. C00-2946-1, Cong. 760564; R. Cohen and M.E. McCormick, eds.) Also. *Univ. Calif. Inst. Mar. Res, IMR Ref. No.* 78-2, 34 p. (revision of 76-9).
- \_\_\_\_\_. 1979. Mineral salt: source of costly energy? *Science* 203:376-377.
- Wiebe, P.H., L.P. Madin, L.R. Haury, G.R. Harbison, and L.M. Philbin. 1979. Diel vertical migration by *Salpa aspera* and its potential for large-scale particulate organic matter transport to the deep sea. *Mar. Biol.* 53:249-255.
- Yayanos, A.A., A.A. Benson, and J.C. Nevenzel. 1978. The pressure-volume-temperature (PVT) properties of a lipid mixture from a marine copepod, *Calanus plumchrus*: Implications for buoyancy and sound scattering. *Deep-Sea Res.* 25:257-268.