power at 5 mills per kilowatt-hour, this would be $0.90 per 1,000 gallons, or $293 per acre foot of water porduced, for power alone. This method would require a water waste of four times the recovery, so 5,000 gallons of water would have to be pumped for each 1,000 gallons of potable water produced. The power required to produce 1,000,000 acre feet of potable water per year by this method would be 58,650,000,000 kilowatt-hours, or 12 times the power output from Hoover Dam.

Several people, in discussing the reclamation of sea water, have pointed out the potential recovery of chemicals from the concentrated salt solutions which would be produced. In attempting to evaluate the profit from the recovery of such chemicals, it would be well to consider the effect that the production of 50 tons of salts from each acre foot of fresh water recovered would have on the present price quotations for those chemicals. Their market value would probably exceed but slightly, if at all, the considerable cost of precipitating such chemicals from the reject brine.

Recently a method was suggested for producing fresh water by freezing sea water. Fresh water can be obtained by this procedure, but again the costs are prohibitive. It is estimated that it would cost at least $1.25 per 1,000 gallons, or $400 per acre foot, to produce water by this method.

From an engineering standpoint there is no question that fresh water can be and is being produced from sea water. But within the forseeable future there appears to be no possibility that it will be economically feasible to turn to the ocean as the source of domestic, agricultural, or industrial water along either coast of the United States. Considerable sums could be spent beneficially in developing existing local supplies by conserving more flood waters, by treating sewage and industrial wastes, and by continuing to develop and protect existing supplies before turning to the ocean as a source of fresh water. Under emergency conditions where relatively small quantities of water are needed, aboard ship, or in such places as the oil fields of Saudi Arabia, the cost of the water produced may not be the determining factor. Sea water reclamation could then be used very satisfactorily.

Some further references:

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"Fresh Water from the Sea", by C. A. Hampl. Chemical and Engineering News, July 1948, p. 1982.

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Institute to receive Dupont grant

CALTECH HAS BEEN NAMED one of the ten U. S. educational institutions—and the only one west of the Mississippi—to receive a $10,000 grant-in-aid from the DuPont Company for unrestricted use in basic chemical research.

The purpose of the program is to increase the amount of such research, and to insure a steady flow of fundamental knowledge to industry and to the country at large. The first grant will be made for the academic year 1949-50, and if the program proves successful, will be continued for a five-year period.

Other recipients of the DuPont grant are Cornell, Harvard, M.I.T., Ohio State, Princeton, Yale, Illinois, Minnesota, and Wisconsin. The institutions will select the research projects in which the funds will be used, the only stipulation being that they be free from any commercial implications at the time the research work is started.

In announcing the gifts, Crawford H. Greenewalt, president of DuPont, said: "It is well recognized that applied research in industry has been dependent in a large measure upon the fundamental knowledge resulting from the work carried out in the past in universities. Today, however, we see a situation in which such work is at low ebb in European universities, and in which American universities have to some degree turned to remunerative applied research at the expense of the fundamental research which they are so well equipped to carry forward.

"It is the DuPont Company's belief that industry can, both for its own and for the national interest, take a constructive part in making it possible for our institutions of higher learning to reverse this trend away from fundamental research. . . . . The company hopes in this way to contribute something to enable our universities to make further progress in the stockpiling of basic knowledge, which has been recognized as one of the paramount needs of the country for future industrial development and for national health and defense."

In addition, the DuPont Company has renewed its post-graduate fellowship in chemistry at the Institute, and has initiated a corresponding fellowship in physics, available for the first time in the coming academic year.