

● RADIO

Saturday, March 15, 1952, 3:15-3:30 p.m. EST
 "Adventures in Science," with Watson Davis,
 director of Science Service, over Columbia Broad-
 casting System.

Mr. J. J. Demuth, president of the American
 Society of Tool Engineers and chief of the Tool,
 Dye, Jig, and Fixtures section, National Production
 Authority, on loan from Ehrhardt Tool and
 Machine Co., St. Louis, discusses "The Know-How
 of Production."

TECHNOLOGY

Concrete Durability Hurt By Penetration of Water

► CONCRETE WHICH is to be used in
 structures situated in water must be
 guarded against volume change and water
 seepage, L. H. Tuthill of the Bureau of
 Reclamation in Denver, Colo., reported to
 delegates attending the American Concrete
 Institute in Cincinnati.

Mr. Tuthill said controlling those two
 things meant the concrete would be more
 durable.

Byram W. Steele of Miami, Fla., formerly
 a concrete specialist with the Corps of
 Engineers, said concrete durability must be
 thought of in terms of individual structures.

"In many cases the concrete is good
 enough," he said. "To have spent more
 time and money making better concrete
 would have been economic waste."

However, he pointed out that concrete
 often is not good enough when used in
 structures situated in water. Within a few
 years, many structures show serious signs
 of deterioration because water finds its way
 into, and through, the concrete in many
 places.

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METEOROLOGY

March Will Be Wet In Most of Nation

► THE WEATHER will be colder than
 usual in the month of March over the
 western half of the nation, but about the
 same as usual in the East. This is the pre-
 diction of the U. S. Weather Bureau's Ex-
 tended Forecast Section.

Exceptions to this prediction are the Gulf
 of Mexico coastal regions and the Great
 Lakes area. They can expect a warmer
 March than usual.

Most of the nation will have a rainy or
 snowy March, depending on the location.
 However, the Pacific Northwest will have
 less precipitation than usual, while the Great
 Lakes and Middle Atlantic states and the
 far Southwest can expect less than normal
 precipitation.

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CHEMISTRY

Fresh Water from Ocean

Plastics in sheet or membrane form, combined with
 electric power, now used to dissociate sodium chloride so
 it can be removed from sea water.

► FRESH, DRINKABLE water from
 brackish sea water is a realizable dream
 for the near future through the use of ion
 exchange films or membranes and the ap-
 plication of differences in electrical po-
 tentials.

Whether the costs of such operation can
 be reduced to a level where the process
 can be used to supplement existing water
 supplies for cities is a matter for future
 development.

Several organizations are working on
 this problem, among them Rohm and Haas
 Co. in Philadelphia, Ionics, Inc., of Cam-
 bridge, Mass., Dow Chemical Co. at Mid-
 land, Mich., and the University of Cali-
 fornia at Los Angeles.

Already there are ion exchange resins
 in granule form that can be used to desalt
 water and perform dozens of other ex-
 tractions of chemical substances from
 liquids. But the quantities handled are
 small and the costs high.

The new developments consist of use
 of the plastics or resins in sheet or mem-
 brane form, with electric power to aid the
 process of dissociating the sodium chloride,
 which is salt, in such a way that it can
 be removed.

The federal Reclamation Service in
 Washington has been urging Congress to
 make \$25,000,000 available for develop-
 mental desalting water research, and such
 legislative request has been cut to \$2,000,-
 000 in hearings held recently. If such ap-
 propriations were made, experiments with
 some of the ion exchange methods would
 result.

The latent energy of salt, which is the
 minimum of energy necessary to separate
 its chemical components, is three kilowatt
 hours per thousand gallons of sea water.
 A possible figure of 10 to 20 cents per
 thousand gallons was given by the Cam-
 bridge group of Ionics division of the
 American Research and Development Cor-
 poration, closely associated with Harvard
 and Massachusetts Institute of Technology
 staff members. This is a reasonable figure
 for the future with very cheap electrical
 power available, yet it is a tenth of the
 best possible costs worked out by the most
 promising distillation methods.

Since even water from a river is not
 obtained without cost, these possible costs
 of desalted water bring the process to with-
 in reach of the cost of reclamation and in-
 dustrial water which often costs as much
 as the estimated ion exchange water costs.

To obtain large output of water by the
 ion exchange method might require an

excessive investment in equipment. The
 slower the process the less electrical energy
 is used, yet it may be advantageous to
 waste electricity to reduce the number of
 expensive units installed.

Details of the exact methods used are
 being kept secret due to filing of patents.
 The chemical nature of the resins used is
 also unannounced. If the process seems
 vital to defense activities, it may be kept
 secret by government order.

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TECHNOLOGY

57 Varieties of U. S. License Tags Are Problem

► IMPROVEMENT IN license-plate pro-
 tection and illumination is blocked by a
 frustrating combination of different license
 lengths and different heights, the Auto-
 mobile Manufacturers Association in De-
 troit declares.

The association has counted a conglomera-
 tion of 57 United States varieties plus nine
 Canadian varieties, giving a total of 66
 different sizes.

Until some standards have been set, li-
 cense receptacles cannot be incorporated
 into auto design as fenders have been in-
 corporated.

At present, license sizes can fall within
 certain specified limits, but no standard
 license size is prescribed. That permits a
 combination of the two dimensions in
 many ways. As a result, they have been
 combined "in almost every possible way
 within the range permitted by the law of
 mathematics."

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ENGINEERING

Reversed Washer Used In Air-Cooling System

► A REVERSED washer has been found
 a practical air-conditioning unit where water
 shortages make it desirable to consume as
 little water as possible in cooling systems.

The reversed washer is merely a standard
 air washer which, instead of cooling air,
 cools water and discharges warm air.

A system using such a device has been
 designed and installed in a six-story New
 York bank building. It has enough capacity
 to handle 400 tons of Freon. The system was
 devised by the Guy B. Panero firm of
 engineers.

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