

ENGINEERING

Water for the Negev

By BENITA TALL
From Tel Aviv, Israel

► THE PIONEER FRONTIER town of Eilat where, so the story, goes King Solomon met the Queen of Sheba, recently was the site of another international meeting, between American and Israeli engineering.

If the meeting is as successful as James G. Scott, geologist and mining engineer from the United States, expects it to be, a desert may be opened to agriculture and industrial development.

Mr. Scott is in Eilat as a technical adviser, or "trouble shooter" as he calls it, overseeing the drilling of a well that could bring in some 300 gallons of water per minute 24 hours a day to thirsty Eilat.

Drilling several hundred feet through granite, porphyry, basalt and similar rock, the engineers have already reached some water. However, they will continue to drill until they reach the expected fracture in the earth's crust that will yield the 300-gallon goal.

It is this fracture, found in rock or mountainous areas, that can hold important quantities of water, geological evidence shows. Going through solid granite, for example, is a relatively recent method of drilling for water and is in contrast to the

usual "lenticular method." Instead of drilling for water from a flat, widespread area, engineers take advantage of open underground fractures in the earth's crust caused millions of years ago in the growing-pains stage of the young planet.

The method, developed by Stephan Riess of Santa Barbara, Calif., has been successful in several places in the United States. One well in Santiago County, Calif., Mr. Scott said, was drilled some 850 feet into solid granite. It has been producing 300 gallons a minute, 24 hours a day, for three years.

Depending on the drilling and the structure of the soil and rock, Mr. Scott said, this method can provide wells that produce more than 1,000 gallons a minute.

As yet, obtaining fresh water by desalination, the "obvious" way for a seaport such as Eilat, is still too expensive and impractical.

Since much of the Negev area, some 4,716 square miles in area or one half of all Israel, is a wilderness of rock and sandy soil, the drilling is being watched carefully by the Israeli Government and several other countries with water problems. The success of the well at Eilat, situated at one end of this desert region, could mean a new life for millions in the deserts of the world.

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NATURAL RESOURCES

Food Crisis Growing

► RESEARCH ON A SCALE comparable to that of the current missile and satellite programs is needed to head off a foreseeable crisis in the world's food supply.

Dr. Archibald T. McPherson, associate director for engineering at the National Bureau of Standards, told the Washington Academy of Sciences that one hope for meeting this crisis lies with the synthetic chemist.

Discoveries by these scientists already have led to synthesis of vitamins, amino acids, flavors and food colorings from such abundant raw materials as coal, limestone, petroleum, atmospheric nitrogen and water.

Other syntheses also are freeing farmland for purely food crops. For instance, the land required to grow the rubber now produced synthetically would be enough cropland to feed 13,000,000 people, he said. Even so, 12% of present farm crops are not intended for food uses.

If all the waste paper in the U. S. were preserved in good condition, it could be converted chemically into enough sugar to feed the nation, he said. Although not now economical, this is the sort of project that could help relieve the population explosion in such countries as Africa, India and China.

"There is every indication that a new era of civilization is emerging in which man will produce an increasing proportion of

his food by direct manufacture instead of depending on less efficient production by plants and animals," he said.

Persons on China's mainland take in about 1,820 calories a day in food. Those in India take in about 2,000 calories a day. The average American has a daily caloric intake of about 3,070. Even so, American hogs are eating better than their owners, since they are fed commercially profitable dietary food supplements resulting from synthetic chemists' work.

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PHARMACOLOGY

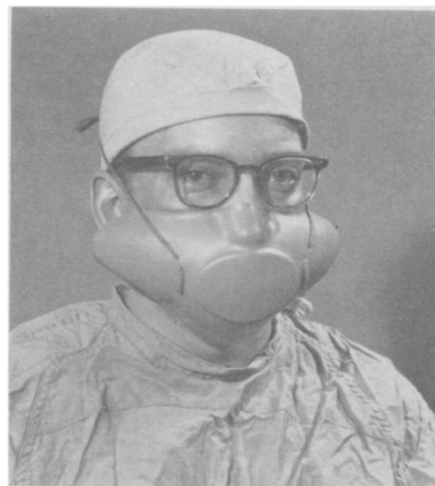
Some Inhalers Sold Only on Prescription

► SOME NASAL inhalers can now be purchased at the drug counter by prescription only.

The Food and Drug Administration has clamped down on the freely accessible inhalers that contain amphetamine. Some persons were found to be purchasing inhalers to get at the amphetamine inside. Amphetamine is a known narcotic, and amphetamine tablets are sold on prescription only.

Nasal inhalers containing other drugs are not affected by this ruling.

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MASK FOR SURGERY—This durable plastic mask is washable and reusable its developers, Drs. Claude R. Hitchcock and Joseph Kiser of the Minneapolis General Hospital Research Foundation, Inc., said. (See SNL, Dec. 27, 1958, p. 410.)

DENTISTRY

Dental Kit Makes Dentist's Visit Possible

► NEW EQUIPMENT is being manufactured that will make a home visit by the dentist entirely possible. The U. S. Public Health Service will unveil a portable dental kit at a state and territorial dental directors conference in Washington, in April.

At that time, more than 60 dentists will be shown the sample unit. It consists of two 45-pound cases. One kit contains an electric drill that will work on ordinary household current. The dentist will also have a 16-sectioned tray for tools, three levels of drawers, compressed air and a hand-operated water pump.

One unit will serve as a worktable and instrument case while the other will serve as a compressor water tank assembly. The sample kit is being manufactured by Ritter Company, Inc., Rochester, N. Y.

The main demand for such a kit is expected to come from nursing homes, hospitals, homes for the aged, state and local health departments and voluntary health organizations. But it is entirely possible that private dentists will invest in such equipment and begin making house calls in the same manner that the doctor occasionally makes a house call with his little black bag.

Rough estimates of the cost of this new dental kit range from \$1,000 to \$1,500.

There is a severe lack of dental services to many patients in nursing homes and homes for the aged. This is also true of many tuberculosis, chronic disease and long-term hospitals where it is very difficult to transport patients to the dentist's office.

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