

GENERAL SCIENCE

Advisers to Candidates

➤ BOTH PRESIDENTIAL CANDIDATES are independently seeking and getting expert advice from leading scientists on nuclear testing, defense, space, and health and medical care.

Sen. John F. Kennedy has chosen Dr. Jerome B. Wiesner, a member of President Eisenhower's Science Advisory Committee, as his top adviser on nuclear disarmament and test suspension. Dr. Wiesner, currently director of Research Laboratory Electronics at the Massachusetts Institute of Technology, has worked extensively in radiation research.

A spokesman for Sen. Kennedy said that the Senator did not consider his selection of Dr. Wiesner unusual.

"The Senator believes," said Pierre Salinger, Kennedy's press officer, "that politics or political considerations have no legitimate role in considering problems as universal as those of scientific scope."

Vice President Richard M. Nixon consults with Dr. George B. Kistiakowsky, chairman of the President's Science Advisory Committee and head of the department of chemistry at Harvard University. The physical chemist is one of the many science experts both in and out of Administration circles with whom the Vice President consults.

Herbert Klein, Nixon's press officer, said, "The political leanings of these men certainly play no part in his choice. What he wants is the necessary background essential to intelligent decision."

In the area of space and on matters of international exchange, Mr. Nixon has con-

sulted Dr. Joseph Kaplan, former U.S. chairman for the International Geophysical Year and head of the department of physics at the University of California, Los Angeles.

Mr. Nixon finds Dr. Kaplan a man with an "extremely practical viewpoint," according to Mr. Klein.

Sen. Kennedy's expert on space is Dr. Bruno Rossi, an authority on cosmic rays and a world-famous physicist at Massachusetts Institute of Technology.

Dr. David Frisch, a nuclear physicist also at M.I.T., is the authority for Sen. Kennedy on defense and disarmament.

Vice President Nixon benefits from information on space from Dr. Keith Glennan, National Aeronautics and Space Administrator.

On scientific questions of defense and disarmament, the Republican presidential hopeful listens to Dr. Edward Teller, associate director of the Lawrence Radiation Laboratory at Berkeley, Calif. He has also discussed these problems with Thomas E. Murray, former member of the Atomic Energy Commission, appointed by President Truman.

On matters of health and medical welfare, the Vice President is continuously advised by Arthur S. Flemming, the Secretary of Health, Education and Welfare, and his staff.

Sen. Kennedy takes his medical advice in politics from Dr. Dean Alexander Clark, head of Massachusetts General Hospital in Boston and professor of preventive medicine at Harvard Medical School.

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MEDICINE

Saved by Hole in Head

➤ A SMALL, EXTRA HOLE in the head may mean the difference between survival and death for patients about to be operated on for tumors or blood clots in the brain.

Dr. Richard Ford, assistant professor of legal medicine at Harvard Medical School, and Dr. Edward L. Spatz, professor of neurosurgery at Boston University School of Medicine, report that increased pressure inside the skull, caused by space-consuming tumors or clots, pushes the brain out of shape.

In some cases, they believe, the aqueduct of Sylvius—a canal that connects two of the brain's ventricles or natural hollow spaces—becomes obstructed. Cerebrospinal fluid becomes trapped in one of the ventricles and takes up more space and causes even more pressure.

When an incision is made for tumor removal, the brain may bubble out through the opening. This, in effect, is like clamping off or strangling the protruding portion of the brain, which may suffer from lack of oxygen.

Under these conditions—with the brain straining against the skull—it is difficult for

the surgeon to get the space "desperately needed for proper exploration and definitive treatment."

When and if he does succeed in removing the lesion, brain swelling "allows cerebral ischemia (oxygen shortage) to continue, leading to more swelling—an often fatal cycle."

The doctors believe that relieving the pressure by drilling an extra hole in the skull and draining out the excess fluid or "water on the brain" before the operation starts "may be most profitable."

The technique is to cut a slit about one and one-half inches long in the top of the head, back of the hairline. A tiny hole is drilled through the skull and a thin rubber tube is passed down through the brain, into the ventricle on the side opposite the tumor or clot.

To keep the trapped fluid from squirting out, the doctors clamp down on the tube and let it drain out slowly. In some cases they have removed about one-fourth cup of fluid.

Almost immediately, the brain volume is reduced and the usual incision can be made

to remove the tumor. To relieve post-operative swelling, the tube or catheter is stitched to the scalp and left in place for about three days, the doctors report in the New England Journal of Medicine, 263:263, 1960.

This draining of the ventricle is technically known as ventriculostomy. In a case report, the doctors say the procedure was carried out under local-infiltration anesthesia, and the patient awakened on the operating table. Despite full clinical recovery, X-rays showed there was still some brain displacement in this patient two weeks after operation.

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ROCKETS & MISSILES

U. S. Recovers Capsule From Discoverer XIII

➤ DISCOVERER XIII was fired into a polar orbit from Vandenberg Air Force Base in California. A 300-pound capsule was scheduled to spin back to earth from the 1,700-pound capsule on its 17th pass over the poles.

U. S. officials hoped that this satellite would be successful. Only six of its predecessors had got into orbit. None of the bell-shaped capsules had been recovered.

The Air Force said the Discoverer, at its farthest point, was 436 miles from the earth. At its closest approach, it was 161 miles away.

Precise instruments inside the capsule were designed to let ground observers keep track of what was going on in the satellite at the time of ejection 200 miles over the North Pole. The capsule was to begin its looping fall then and drop down south of Hawaii.

The ejection went as scheduled on Aug. 11, a day after the Discoverer went into orbit. Its path from outer space was almost exactly that planned on. Dropping into the ocean, the capsule sent out radio and light signals.

Three hours later, helicopters arrived to pick up the undamaged capsule. Observers saw in the recovery—the first made of any man-made object from orbit—an important "first" in the space race.

But more than that, the success meant the United States now has a proved method of getting men from outer space.

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ROCKETS & MISSILES

Presidential Message Bounced From Echo I

➤ A 100-FOOT-DIAMETER inflatable "balloon" satellite, Echo I, was launched into orbit Aug. 12 and then used to bounce President Eisenhower's voice from coast to coast to prove its value as a "radio mirror." The satellite was a sphere of plastic, coated with aluminum.

Eisenhower's message proclaiming "one more significant step" in space research was transmitted from the Jet Propulsion Laboratory Station at Goldstone Lake, Calif., via Echo, to the Bell Telephone Laboratory at Holmdel, N. J.

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