

The conquest of cancer

Steps to create a new agency to wage an all-out war on cancer raise both hopes and questions



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A panel of scientists and laymen ask the Senate for a new cancer effort.

During World War II the United States Government decided to build an atomic bomb, established the now famous Manhattan Project and efficiently accomplished its mission.

In the 1960's, landing a man on the moon was designated as the national scientific priority, one that was realized on schedule through the concerted efforts of the scientists and engineers of the Apollo program.

The decade of the seventies, according to a Senate panel, should be dedicated to the conquest of cancer. If the United States were to set the conquest of cancer as a national priority, the panel holds, and if it were to attack cancer with the same resolve and commitment displayed in the Manhattan and Apollo programs, victory could be had for a price.

The 26-man panel, commissioned in April at the urging of Sen. Ralph Yarborough (D-Tex.), delivered its report to the Senate this month. Composed of 13 prominent laymen, including Elmer Bobst, President Nixon's close friend, and 13 leading scientists, the group declared that \$6 billion would have to be poured into cancer research in this decade alone. It asked Congress to appropriate \$400 million for fiscal 1972.

That the panel, whose chairman was Benno Schmidt, managing partner of J. H. Whitney & Co., a New York investment firm, called for vastly increased Federal outlays—nearly double present annual expenditures—was no surprise, though there is no guarantee the money will be forthcoming. What

was surprising, and what is expected to raise considerable debate during coming months, was the suggestion that responsibility for funding and conducting cancer research be lifted from the National Cancer Institute and transferred to a new, independent agency to be called the National Cancer Authority. As envisioned by the panel, the NCA would be headed by a scientist appointed by and directly responsible to the President.

While commending the existing National Cancer Institute for its "excellent" work, the panel says "the overall research effort is fragmented and, for the most part, uncoordinated." Thus, motivated by a desire to see cancer research come in for special attention and prompted by the belief that a massive assault against cancer will require a special and flexible administrative organization, the panel wants to see cancer research freed from the bureaucratic mire of the National Institutes of Health that is parent to the NCI and that is, in turn, part of the Department of Health, Education and Welfare.

The response to these proposals of the National Panel of Consultants on the Conquest of Cancer has been varied, generally low-keyed and off the record, as scientists at NIH and elsewhere wait to see what will happen next.

Yarborough, a lame-duck Senator at this point, has introduced a bill to implement the panel's recommendations, but it will surely die with the 91st Congress. Sen. Edward M. Kennedy

(D-Mass.) has promised to reintroduce the bill, or one like it, when the 92nd Congress convenes in January.

Then, eventually, the matter will be the subject of public hearings. But according to a spokesman for the Committee on Labor and Public Welfare, it could easily be late 1971 before such hearings are actually scheduled. Meanwhile, debate will remain within the confines of the scientific community.

To begin with, there is no general agreement that cancer can, in fact, be handled by an Apollo-type program. Doubters rightly point out that when the Apollo effort got under way, all the knowledge was in hand and the job to be done was essentially technical. This is not the case with man's understanding of the cancer process.

Then there is a question about the wisdom of separating cancer research and researchers from other scientific disciplines. NIH director Dr. Robert Q. Marston says, "Cancer research profits from an interplay with other research in the diseases of men," and separating it too dramatically could hinder cross-fertilization among disciplines. When it comes time to testify publicly, NIH is also expected to show reluctance to lose one of its largest and most important institutes. Nevertheless, officials within NCI itself, which stands to gain so much should it become a separate and very wealthy independent enterprise, are quietly in favor of the Senate panel's ideas.

What effect an independent cancer authority would have on other areas of research is also a matter in need of

consideration. Cancer kills 320,000 a year in the United States, but heart disease claims the lives of 735,000 individuals annually and investigators in that field might well demand a separate institute of their own. And in fact they are asking for a crash program in heart research (see p. 461).

And finally, there is the question of the money itself, of whether the Government would pour new funds into

cancer research or merely transfer resources that would otherwise be channeled among other fields.

None of these issues will be resolved easily or soon, but as one spokesman for cancer research said: "Cancer research is never going to be the same again. The mere fact of the report has lifted it out of the pack and, whatever happens, should encourage special sympathy from Congress." □

OCEAN DRILLING

Probing the Atlantic's past

According to current reconstructions of the pattern of continental drift, the east coast of North America was once joined to the northwestern bulge of Africa. About 200 million years ago, the theory goes, the two continents broke apart and sea-floor spreading opened up the Atlantic Ocean between them. It follows from this that the ocean crust on both sides of the Atlantic would be the same age.

But scientists on Leg 14 of the Deep Sea Drilling Project, led by Drs. Dennis E. Hayes of Columbia University's Lamont-Doherty Geological Observatory and Anthony C. Pimm of the Scripps Institution of Oceanography, have found evidence that the eastern coast of the Atlantic is much younger than the western coast.

Fossils recovered from sediments directly overlying the ocean crust near the continental margin of West Africa indicate that the sediment, and therefore the crust, is only 110 million years old—45 million years younger than the oldest sediment recovered on previous legs of the project from the continental margin of the eastern United States.

To explain this discrepancy, the researchers propose that a narrow proto-Atlantic Ocean once separated the United States and Northwest Africa.

This ancient ocean, they suggest, must have been enlarged to the present ocean by sea-floor spreading along a rift that was closer to Africa than to North America.

"One thing that supports this theory," says Dr. Hayes, "is that the Mid-Atlantic Ridge is not quite 'mid,' but is about 300 or 400 kilometers closer to Africa."

The second puzzle is where the proto-Atlantic came from. There are two possible explanations, says Dr. Hayes. "Either there was an earlier phase of spreading along a zone that has since been obscured, or it was there all along."

At another site, about 400 miles from the West African coast, the researchers drilled into a small conical structure protruding from deep within the sediments to near the sea floor. Similar structures in the Gulf of Mexico had previously been drilled and found to be salt domes, frequently associated with oil and gas. Seismic surveys show many such structures along the coasts on both sides of the Atlantic (SN: 8/15, p. 142), and many people assumed that they were also salt domes and attached high hopes to them as potential sources of oil.

But when the dome off Africa was

drilled, it turned out to be of volcanic origin. There were no signs of salt or hydrocarbons. "We've deflated a balloon," says Dr. Hayes.

Another significant discovery, says Dr. Hayes, was a gap of as much as 60 million years in the age sequence of several sediment cores from the floor of the eastern Atlantic.

Similar gaps had previously been found in cores from other parts of the ocean, says Dr. Hayes, and these new cores show that the phenomenon occurs over a very large geographic area. The ages of the missing sediments also correspond, he points out, to the period of mountain building in Africa and Europe, when the Alps and the Atlas Mountains were forming. Both phenomena, the researchers suggest, may be related to a change in the pattern of continental drift 30 million to 70 million years ago. □

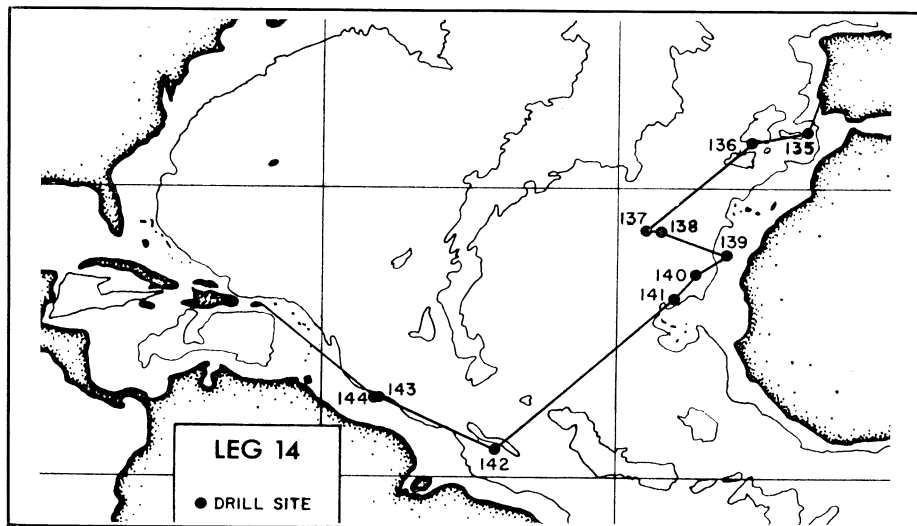
SEABORG ELECTED

In-house politics at AAAS

The annual process of electing a new president of the 135,000-member American Association for the Advancement of Science is usually carried out quietly behind the scenes with the appearance of goodwill and unanimity that scientists like to present as their public face. In past years, the election attracted little outside interest. The AAAS, although large, is diverse and without any strong tradition for activist involvement, as an organization, in public issues of science.

But the AAAS is a changing organization, and this year's electoral process produced sparks. The announcement this week of the election by mail ballot of Dr. Glenn T. Seaborg as president of AAAS climaxes a period of unusual turbulence for the organization. The basic issue centered on the possible conflicts of interest some AAAS Board members felt might arise between Dr. Seaborg's duties as Chairman of the Atomic Energy Commission and as president of the AAAS. But before the electoral process was over, the secondary issue of the appropriateness of a news article discussing opposition to the Seaborg candidacy in AAAS's weekly magazine, *SCIENCE*, had arisen and the magazine's news editor, Daniel S. Greenberg, had resigned.

The whole thing began in June when the AAAS Committee on Nominations and Elections selected Dr. Seaborg and Dr. Richard H. Bolt of the Cambridge, Mass., consulting firm Bolt, Beranek and Newman as candidates for the presidency. The nominations were announced in September, but by November enough internal opposition had surfaced for the AAAS board chairman, Dr. H. Bentley Glass, to describe to



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Leg 14 sites: New light on continental drift patterns and mineral resources.