

NUCLEAR PHYSICS

25 Nations May Join Club

France now holds fourth place in the atomic weapons club. Many scientists fear that 25 other nations will start to develop their own atomic bombs.

TWENTY-FIVE NATIONS may scramble for fifth place in the atomic weapons club.

Fourth place goes to France, who follows the Big Three, Great Britain, Russia and the U. S. The scramble could be sparked by the recent detonation of an atomic weapon by the French.

For this atomic explosion brings to reality one long-dreaded nightmare embedded in the minds of experts, the predicted possession of nuclear weapons by other than the three great powers.

Since shortly after World War II, many experts have thought and talked of this problem as the "N'th country problem." The "N" represents an unknown large number.

Three scientists, Dr. William C. Davidon, a physicist at Argonne National Laboratory, Dr. Marvin I. Kalkstein, nuclear chemist at the Air Force Cambridge Research Center, and Christoph Hohenemser, a graduate student in the physics department at Washington University, studied this problem for the National Planning Association.

Among their conclusions were these arguments: Besides France, 11 nations have the scientists, money and technology to begin

a nuclear weapons program soon. They are West Germany, East Germany, Japan, Italy, India, Sweden, Switzerland, Canada, Belgium, China and Czechoslovakia.

Yugoslavia, Poland, Hungary, Finland, Austria, Australia, Denmark and the Netherlands also have the money and the technology but have limited sources of top scientific manpower. Six countries—Argentina, Brazil, Mexico, Norway, Spain and the Union of South Africa—are economically capable but limited in other ways. Nothing can be expected from them for at least five years.

Of course, other nations could join the "club" by obtaining the weapons from present members.

The problem of enemy nations possessing atomic weapons is readily apparent. But friendly nations' possession of the bombs causes problems too because, usually, development of the bomb drains resources otherwise used for military developments useful in limited wars.

Because the United States has put such faith in deterrent power, it is important that America's allies retain limited capabilities, observers believe.

France's possession of the bomb also poses problems. Will it make the USSR even more insistent on maintaining European satellites as a buffer? Will it make control of testing impossible?

Competent experts have criticized French expenditures to develop the bomb—especially since France seems to have no heavy aircraft capable of delivering the bomb.

But the prestige of bomb possession is important in world affairs and may tempt other countries besides France.

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MILITARY SCIENCE

Human Spies for Russia Cheaper Than Satellites

IT WOULD be cheaper for Russia to spy on the U. S. through normal channels than by putting a reconnaissance satellite into orbit.

A Pentagon official said, however, that a U. S. reconnaissance satellite could be highly valuable to America, because Russia does not publish in its daily newspapers the kind of information useful to military intelligence.

On the other hand, Russian agents in the U. S. can glean vast amounts of solid information merely by reading several major metropolitan daily newspapers and by gathering filling station maps, Government documents and trade statistics that are readily available to the public.

The Department of Defense thus takes the attitude that the object recently found circling the earth in a polar orbit probably was the last stage of Russia's Lunik III and not a reconnaissance satellite.

But the possibility that Russia some day might launch a spy-type satellite seems to be taken seriously by those whose duties will be to camouflage secrets on U. S. soil.

Spy satellites, when perfected, probably will be able to gather information by watching or by listening. They can watch by using either photographic or infrared equipment. They can listen with sensitive radios.

Another official said information from a spy satellite watching the U. S. would be useful to the Russians because it would enable the Soviets to verify reports from agents here. For the same reason, a spy satellite belonging to the U. S. would be valuable because information from some foreign sources often is inaccurate.

If a satellite with infrared equipment, which detects heat, spots a moving hot object, the interpretation could be "train." A large warm spot could be "city." An intense pinpoint could be "missile launching." A less-intense pinpoint could be "factory."

Infrared spy-systems, which work as well by night as by day, obviously pose a challenge to camouflage experts. They mean that ways must be found to hide the heat given off by such things as steel mills and ship piers. It is believed the U. S. is working on counter-infrared techniques that are designed to confuse.

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MEDICINE

Sandbox Set Gets Ulcers

YOUNGSTERS AS SMALL as those in the sandbox league can develop ulcers. Others can develop ulcers that remain undetected until adulthood.

Ulcers are not rare in youngsters, three Chicago physicians report in the American Medical Association Journal of Diseases of Children, Feb., 1960.

The true incidence of peptic ulcer in children cannot be evaluated on the basis of the recorded cases, since these undoubtedly represent a small fraction of the total number of children with the disease. In many cases, the youngster exhibits no symptoms, and the condition is identified only at operation or autopsy, Drs. Alberto Ramirez Ramos, Joseph B. Kirsner and Walter L. Palmer of the University of Chicago report.

Studies have revealed that of 1,000 adult patients with duodenal ulcer, 26 had symptoms traceable to as early as four years of age. Of 1,000 gastric ulcer patients, 16 had symptoms that dated from childhood.

From their own experience with 32 cases of peptic ulcer in children up to age 15, they conclude that chronic peptic ulcer in children occurs in boys more frequently than girls. Peptic ulcers occur on the mucous membrane of the esophagus, stom-

ach or duodenum as the result of the action of the acid of gastric juices.

They also found that the symptoms of peptic ulcer in children are vague until puberty when the ulcers begin to resemble those of adults and that children suffer from more duodenal than gastric ulcers. Medical management, which includes avoiding foods and medicines that irritate the gastrointestinal tract, frequent antacids and sedation, works effectively in the majority of children.

As in an adult, the doctors say surgery may be necessary in childhood peptic ulcer complicated by hemorrhage or perforation.

Just what causes peptic ulcer in children remains as undetermined as its cause in adults, they note. However, in four cases of acute peptic ulceration among the 32 children, cerebral damage and certain drugs may have been implicated as causative factors. Two patients, aged six and seven, developed acute peptic ulceration following a month's treatment with corticotropin, salicylates, and aspirin for rheumatic fever.

It could not be determined whether the drugs produced the ulcers, or irritated a susceptibility to ulcers, or whether rheumatic fever predisposed to peptic ulceration.

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