News of Science

The Security Program

The U.S. Supreme Court has ruled that Government employees who hold nonsensitive positions cannot be dismissed under the Federal security program. On 11 June the court handed down a 6-to-3 decision in favor of Kendrick M. Cole, Federal Food and Drug Administration inspector who lost his job in 1954 because his continued employment was "not clearly consistent with the interests of national security."

In a 2-to-1 decision last July [*Science*, **122**, 368 (1955)], the U.S. Court of Appeals had ruled against Cole, as had the U.S. District Court. Cole had been charged with close association with persons reported to be Communists, and also with having belonged to the Nature Friends of America, an organization cited by the Attorney General as subversive. He has publicly denied ever having knowingly associated with Communists and has said that he refused to join the Nature Friends.

However, in his appeal before the Supreme Court he declined to deal with the issues in the charges, commenting that he would not discuss "associations which I carry on as part of my private, informal social life." Instead, he challenged the legality of the action against him, which was based on the Summary Suspension Act that was passed by Congress in 1950.

In that law Congress gave the summary suspension powers to agencies it specified (11 of them) and "such other departments and agencies of the Government as the President may, from time to time, deem necessary in the best interests of national security." In 1953 the President issued an executive order that extended the act to cover all Federal employees.

In handing down the opinion for the majority, Justice John Harlan said:

"In the absence of an immediate threat of harm to the 'national security,' the normal dismissal procedures seem fully adequate and the justification for summary powers disappears. Indeed, in view of the stigma attached to persons dismissed on loyalty grounds, the need for procedural safeguards seems even greater than in other cases, and we will not lightly assume that Congress intended to take away those safeguards in the absence of some overriding necessity, such as exists in the case of employees handling defense secrets."

The dissent, which was written by Justice Tom Clark, said: "The Court's order has stricken down the most effective weapon against subversive activity available to the Government. It is not realistic to say that the Government can be protected merely by applying the Act to sensitive jobs. One never knows just which job is sensitive. The janitor might prove to be in as important a spot security-wise as the top employee in the building."

An editorial in the *Washington (D.C.) Post* described the dissent as "vociferous" and "somewhat frenzied" and went on to point out that "Subversive activity was not alleged, or even suspected, in the Cole case. . . . He had done nothing—and probably was not in a position to do anything—actually to imperil national security.

"Justice is an essential element in the national security of a free people. It cannot be cavalierly set aside without impairing the mutual trust and the faith in free institutions which lie at the heart of national solidarity. By making the national security program somewhat less arbitrary and capricious, the Supreme Court has acted to make the Nation more secure."

Senators James O. Eastland (D-Miss.) and Karl E. Mundt (R-S.D.) and Representative Francis E. Walter (D-Pa.) have proposed new legislation to overturn the effect of the decision by specifically authorizing security dismissals of persons in both sensitive and nonsensitive positions in all government offices.

Metal Whiskers

In recent years crystal growth of fine needles, "whiskers," from metal surfaces has been observed. J. Franks [*Nature* **177**, 984 (26 May)] has obtained evidence that extrusion must be obstructed if whiskers are to form. He compresses a 3-millimeter slab of an alloy containing small particles of tin dispersed in aluminum and thus obtains a profuse growth of whiskers over the whole exposed tin surface; this growth ceases abruptly at a length (usually shorter than 1 millimeter) independent of pressure. If the crop of whiskers is wiped off the plate, a further set will grow.

Frank found that after 12 cycles of growth and removal, only a few sources remained active. Some sources produced as much as a total length of about 1 centimeter; sometimes there was an incubation period before growth recommenced on a source. When the surface sources had been exhausted, grinding away 20 μ from the surface made fresh growth possible. Near the melting point of tin, the growth is more rapid and the individual whiskers are larger (up to 5 millimeters). It is proposed that whiskers are generated by a glide mechanism, but that the frequency with which the whisker generating dislocations operate depends on diffusion.

The existence of whiskers is of practical interest in the study of telephone contacts and relays. It is of theoretical importance because their structure is, to an unusual degree, free from imperfection and thus approaches the theoretically predicted mechanical strength of a metal.—K. L.-H.

Super Permanent Magnet Material

The Westinghouse Electric Corporation reports that it has perfected a magnetic material that promises to yield powerful new permanent magnets. The material is virtually 100-percent pure manganese-bismuth (MnBi) and represents an improvement on a development first started in Europe several years ago. During World War II, the Naval Ordnance Laboratories developed a similar material, which was called Bismanol.

The superlative magnetic properties of pure manganese-bismuth have been predicted for several years, but heretofore the form of MnBi that best exhibits these properties could not be made pure enough to realize its potential abilities. The new method provides, on a laboratory scale, a new, highly magnetic form of manganese-bismuth. The new process produces this new magnetic material directly and in a high state of purity.

Clarence Zener, acting director of Westinghouse research, suggests that perhaps the greatest advantage of MnBi magnets is their unusual resistance to demagnetization. This resistance to demagnetization, which comes from a magnetic property called high coercive force, suggests many advantages of MnBi magnets. According to Zener, such magnets would not be adversely affected by ex-