

Consequently scientific resources went heavily into atomic energy research and reactor and weapons development.

Within the last 2 or 3 years concern has grown about American influences on the French economy through investment or control of licenses and patents. In particular, an incident with both diplomatic and economic implications (high-performance American computers were for a time denied France by U.S.-government policy on grounds that they contributed to development of French nuclear weapons) did perhaps more than anything else to spur French action on the technology gap.

The activist era in French science policy is usually dated from the beginning of the de Gaulle regime in 1958. During the recent election campaign, in which science policy was discussed but by no means became a flaming issue, the incumbent science minister Alain Peyrefitte stressed the sharp rise in the science budget under de Gaulle. He pointed out that the financial effort in R & D in both public and private sectors had risen from 0.97 percent of the gross national product in 1958 to 1.63 percent in 1963 and 2.06 percent in 1965. He acknowledged that the French effort still lags behind that of the British for whom the corresponding figure was 2.3 percent in 1964. The R & D effort for the U.S. was about 3 percent of the gross national product, for a much larger population with GNP per capita double that of the French. The French Fifth Plan for economic and social development calls for an increase in the effort to 2.5 percent.

Awareness at official levels of the importance of science and technology was acute enough, even in the period immediately after the Liberation, to have prompted the establishment of such agencies as the Atomic Energy Commission and the National Office for Aeronautical [now Aerospace] Studies and Research. In fact, concern about an apparent decline in French science between the two wars had led to the creation by the Popular Front government, just before World War II, of the Centre National de la Recherche Scientifique (CNRS), which has a role similar to that of the National Science Foundation in the United States. But the task of reconstructing French industry, after the war, and government preoccupation with rehabilitation of nationalized transport, communications, and utilities services, on the one hand, and financial weakness and political instability on the other made it impossi-

Battery Additives: AID's Chagrin

Battery additives are supposed to make electric batteries last longer, but the evidence is that what they really do is make government officials look ridiculous.

In 1953 there was the celebrated case of AD-X2 (*Science*, 29 December 1961), a top-selling battery additive which the National Bureau of Standards (NBS) had found to be without merit, though numerous customers swore that AD-X2 made their batteries peppier, long-lived, perhaps immortal. The Post Office subsequently moved to bar the product from the mails, and the manufacturer of AD-X2, Jess M. Ritchie, sought the help of various congressmen and of the newly installed, business-minded Eisenhower administration. Sinclair Weeks, Secretary of the Commerce Department, of which NBS is a part, said the NBS finding may have been good science but it was bad business. He demanded and received the resignation of NBS Director Allen V. Astin. A vast row ensued in which the administration was accused of having no respect for the integrity of science. Since no modern government can comfortably endure such a charge, Astin was reinstated shortly before his resignation was to become effective, and AD-X2 still stood condemned. Its market appeal subsequently declined, though at one point the Federal Trade Commission grappled with the placebo problem and arrived at the conclusion that advertising cannot be deemed misleading when the customers voluntarily come forward to proclaim their satisfaction.

In any case, little or nothing has been heard of battery additives in recent years until just last week when the Agency for International Development (AID) admitted that it had shelled out some \$260,000 for a product known as "Higgins 10-Year Battery Life," named after its manufacturer, Thomas Edison Higgins, of Treasure Island, Florida. Standing defenseless as the Senate Permanent Subcommittee on Investigations pummeled from one side and the House Subcommittee on Foreign Operations and Government Information worked from the other, AID officials acknowledged the following tale.

Last year, the government of South Vietnam issued to Higgins 27 licenses for the importation of "10-Year Battery Life." AID, as part of its program of assistance to South Vietnam, issued to Higgins various letters of credit which he cashed in at American banks in payment for shipments sent to Saigon. Altogether, some 240,000 3-ounce packets, with a retail price of \$1.60 each, were shipped, but, as it turned out, no market developed in Vietnam.

With the case generating an unpleasant aroma, both the House committee and AID asked the National Bureau of Standards to test "10-Year Battery Life." NBS acknowledged some experience with such products and replied that the latest entry was without merit. (Each \$1.60 packet was found to contain about 4½ cents worth of magnesium sulfate and ammonium sulfate.) Higgins subsequently had his licenses amended to cover a "rust inhibitor" called "White Magic," which drew another \$100,000 out of AID. NBS concluded that this product not only was ineffective but "might possibly be dangerous." Meanwhile, AID officials discovered that, in violation of currency regulations, Higgins' sales agent in Saigon was salting away large sums in Swiss and New York banks. On 20 December, they testified, they turned the case over to the Justice Department.

This being so, asked Senator Karl E. Mundt (R-S. Dak.), why was Higgins able to cash in a \$9810 letter of credit on 6 March? A lawyer for AID said that could easily be explained. Once issued, he said, an AID letter of credit is an inexorable instrument, beyond the power of man or government. But, he said, Higgins has no more letters of credit and no more will be issued to him.

Such is the latest installment in the relationship between battery additives and government. Further episodes will be reported as they occur.

—D.S.G.