



GENERAL SCIENCE

Scientists on U. S. Jobs

➤ LESS red tape and better administration and management—not more money—are needed to attract more scientists to government service. This is the finding of an informal survey of scientists made by Dr. Eric A. Walker of the Ordnance Research Laboratory of Pennsylvania State College.

He wanted to find out why some scientists seem to feel there is an "inherent stigma" to government service.

Comparing the pay of scientists in the government, industry and colleges, Dr. Walker found that a few scientists in top industry jobs get higher salaries than any government scientists. Government scientists, however, tended to get more money than those in the schools.

He concluded that "salary alone is not the reason that scientists are reluctant to enter government service."

On the other hand, Dr. Walker charges that the "administration and management of some of the civil service laboratories is not all it should be."

Red tape came in for some attack from scientists he talked to. An example was the government scientist who said if he needed a tube not available in his stockroom, it took two days to get it from a supply house only 10 miles away.

Another complaint was the division of authority and responsibility in military laboratories. Under this system, a uniformed officer has the authority, but the responsibility lies with a scientist.

"The system appears to be predicated on the assumption that the scientist, being a queer sort of individual, cannot be trusted with such authority," comments Dr. Walker in his report to the AMERICAN JOURNAL OF PHYSICS (Jan.).

A system where scientists may have authority over uniformed officers has been successfully used in other countries, says Dr. Walker. "There is no reason why it should not be adopted by our Armed Serv-

ices," he declares, adding, "if it were adopted more scientists would be less reluctant to accept government service."

Dr. Walker's investigation found few scientists who objected to security regulations. "However, many have objected to the method in which security matters are enforced."

Charges made against Dr. Edward U. Condon, director of the National Bureau of Standards, did not help the government find scientists, Dr. Walker points out.

"Such things as the recent Condon inquiry can only make scientists reluctant to accept Government service. Up to the present time no disloyal act has been proved against Condon, and most scientists feel that if they had been in Condon's shoes, they would have done exactly as he did," Dr. Walker asserts.

Higher salaries for government scientists may help solve the government's scientific personnel problems by bringing better management, the scientist concludes. The new P-9 rating with a top salary of \$15,000 per year may attract administrators who can cut through red tape, he suggests.

Science News Letter, February 19, 1949

ENGINEERING

Metals Strengthened by Glass Toughening Process

➤ STRENGTH and durability are added to metals used in automobile shafts and levers by a process employing principles similar to those used to make safety glass stronger than ordinary window glass, the Engineers' Club in St. Louis, was told by Robert Schilling of General Motors Research Laboratories.

The toughening process includes the controlled use of so-called trapped or residual stresses within the very texture of the metal itself. Many of these modern processes were used, without benefit of scientific explana-

tion, by swordsmiths, blacksmiths and old time mechanics who improved the life of swords, buggy springs or engine parts by cold hammering them after they had been shaped or fashioned.

In toughening glass, the panes are subjected to a blast of cooling air when they are close to the point of solidification, he said. The outer layer therefore solidifies and cools first, while the core is still soft.

When the interior solidifies and cools later, it contracts and tends to compress the cold outer layers. The finished product is then under compressive or squeezing stresses at the vulnerable outer surface, and under a tension in the interior. These trapped stresses increase the load capacity by several hundred per cent.

Brittle metals, such as through-hardening steels, act in a manner similar to the glass. Some types of heat treating, or mechanical processes such as cold hammering, surface rolling, presetting or shot-peening, can make hard, brittle materials, he said, superior to anything else for severe service by protecting the surfaces with trapped compressive stress.

Science News Letter, February 19, 1949

Get out and look at the Stars!

MAKE THIS AMAZING

Astronomical Telescope

FOR AS LITTLE AS \$6.00

Same Principle as Mt. Palomar Telescope



See the mountains of the Moon, Saturn's rings, Jupiter's moons, nebulae, clusters, the companion of Polaris, and other heavenly wonders.

WITH ALL THE DIFFICULT AND TEDIOUS WORK ELIMINATED you can make a large-size high-powered, reflecting telescope for little money. Two years of intensive research gave us the secret of Machine Processing a reflector to a perfection equalling or better than the average hand-finished mirror of this size. This reflector is absolutely optically centered. The surface is accurate to better than 1/4 wavelength of light as indicated by test against a master plate. Aluminized with Hard aluminum coating of high reflectivity and long life, guaranteed against peeling or blistering for 1 year. Glass is annealed, strain-free. The complete telescope can be built in four hours as described in a recent national scientific magazine. Reprint free with each kit. Reprint alone 10c.

This easily built telescope guarantees success for the beginner. It gives contrasting, sharp, clear images without rainbow effects or fuzz. Material for tube, etc., can be found around every home or purchased for a few cents.

3" REFLECTOR (39 F.L.) A "FLAT" AND 3 EYEPIECE LENSES ALL READY FOR YOU TO ASSEMBLE INTO AN ACHROMATIC (COLOR FREE) DISTORTIONLESS INSTRUMENT—COST\$6.00

For 4" Reflector Kit—56" F.L. send 10.00
For 5" Reflector Kit—67" F.L. send 15.00

For your first telescope make a 3" or 4". Advanced workers 5".

HARRY ROSS

MICROSCOPES—TELESCOPES

Scientific and Laboratory Apparatus

70 West Broadway, Section S, N. Y. 7, N. Y.

