

## Pauling comes in from the cold

PRESIDENT Ford last week invited 13 scientists to the White House to receive the National Medal of Science, the most prestigious scientific prize offered by the federal government. For one of the recipients, Linus Pauling, the event had added significance, for it marked the end of a long and bitter period during which Pauling had been virtually ostracised by the White House for his outspoken political opinions and his opposition to nuclear weapons.

Although he has received almost every possible scientific accolade, including two Nobel Prizes, Pauling has suffered a number of direct reprisals for his political views, and he has repeatedly been ignored when the National Medals of Science have been handed out. The latest such rebuffs came during the Nixon Administration when Nixon, who was not known for honouring his enemies, twice overruled Pauling's nomination for the prize.

Pauling's political troubles began in the early 1950s, during the anti-communist witch hunts which culminated in the rampagings of Senator Joe McCarthy. Accused of being a Communist sympathiser, he was denied a passport in 1952 to travel to Britain for a meeting of the Royal Society, and he was again refused a passport a year later. He was also refused a government research grant in the early 1950s for political reasons.

Such overt reprisals lessened a little after he was awarded the Nobel Prize for chemistry in 1954, in recognition of his pioneering work in unravelling the nature of the chemical bond. He was, at least, granted a passport. But Pauling continued to needle successive Administrations by attacking nuclear weapons testing, foreign policy and, in the 1960s, the Vietnam war. Although his actions brought rebuffs at home, Pauling's political activities brought him the Nobel Peace Prize in 1963 and the International Lenin Peace Prize in 1971.

There was, however, one occasion on which the White House temporarily suspended hostilities against Pauling. Soon after he was elected, President Kennedy invited Pauling, along with every other American Nobel Prize-winner, to a White House dinner. Pauling accepted, but before attending the event, he led a protest demonstration outside the White House gates against nuclear weapons testing.

The citation which accompanied his National Medal of Science states that the award is "For the extraordinary scope and power of his imagination, which has led to basic contributions in such diverse fields as structural chem-

istry and the nature of chemical bonding, molecular biology, immunology, and the nature of genetic diseases". Pauling, who is now 74, accepted the prize with a broad grin, accompanied by the clicking of a multitude of cameras.

Other recipients of the award were Britton Chance (University of Pennsylvania), Erwin Chargaff (Columbia University), James Neel (University of Michigan), James Shannon (former Director of the National Institutes of Health), Rudolf Kompfer (Stanford University), Ralph Peck (University of Illinois), Abel Wolman (Johns Hopkins University, now retired), Kurt Godel (Institute for Advanced Study), Nicolaas Bloembergen (Harvard University), Paul Flory (Stanford University), William Fowler (California Institute of Technology) and Kenneth Pitzer (University of California, Berkeley).

● At the annual International Astronautics Federation congress this week in Lisbon, the Guggenheim International Astronautics Prize, awarded by the International Astronautics Academy, goes to Oleg G. Gazenko, now Director of the Institute of Biomedical Problems in Moscow. More than anyone else in either the US or Soviet space programmes, he has made a concerted attack on the daunting problems of placing and maintaining man in space—and it is now hard to remember that before 1957 many

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physiologists were convinced that such a venture would only prove a costly catastrophe. The line of development conceived and carried through by Gazenko and his colleagues can be considered to have culminated in the effective compromise of the Apollo-Soyuz joint test project, in which the Soviet life support philosophy and that of NASA were blended rather than unilaterally bent.

Oleg Gazenko's involvement with the physiological problems of space flight and life support for long manned space-flights goes back beyond 1957, to the time when the first Soviet physiological experiment was carried out in space—involving the dog Laika in the second *Sputnik*. The choice of the dog as the test animal for pioneering *in vivo* experiments in space may be attributed to Gazenko, although it conformed equally with classical Pavlovian behaviourism favoured by the Soviet medical establishment.

Since the mid-1960s Gazenko has been in the thick of the project (finally agreed in principle in 1964) for joint publication of US and Soviet space medical and biological experience (*Foundations of Space Biology and Medicine*). Recently, American research and competence in space biology and medicine has more than caught up and it has assumed for a year or two that Gazenko had lost status. This award should set the record straight. □

Pauling at the White House with a friend (pic: Washington Post).