Dr. Manfred Eigen

Dr. Manfred Eigen likes to ski and climb mountains. But his major interest outside the laboratory is music. He plays the piano expertly and especially enjoys chamber music.

His love for music, however, has never seduced him from his laboratory, where he earned the Nobel Prize in Chemistry. Dr. Eigen, with his two fellow Laureates, sought a solution for measuring the rate of fast reactions.

Born in Bochum, Germany, on May 9, 1927, Dr. Eigen studied physics and chemistry in the local gymnasium. He then entered Göttingen University. He received his doctorate in 1951 from the Georg-August University in Göttingen and was an assistant at the Institute for Physical Chemistry at the university from 1951 to 1952. He became research associate at the Max-Planck Institute for Physical Chemistry in 1953, its director in 1964. He is now its chairman.

Winner of many awards, including the Bodenstein Award of the Bunsen Society and the Otto-Hahn Award for Chemistry and Physics, he has also received two awards from the American Chemical Society. On Dec. 2 he will receive the second Pauling Medal of the American Chemical Society's Puget Sound and Oregon Sections.

Nobelist Dr. Linus Pauling was the medal's first winner.

Dr. Eigen has lectured in universities in the United States and has been named honorary doctor of science at Harvard University, Washington University in St. Louis, Mo., and the University of Chicago.

More recently his interests have turned to molecular biology, in which area he is applying the methods he devised in his research on fast reaction. ◈

Dr. Ronald G. W. Norrish

Dr. Ronald G. W. Norrish, although retired in 1963, continues to be active as professor emeritus at the University of Cambridge where he has spent most of his academic life.

Dr. Norrish, who has spent much of physical chemistry and director of the department of physical chemistry for almost 30 years. He did his prize-winning work between 1946 and 1952.

He has received many honors and awards, including an honorary doctorate from the University of Paris and two more honorary doctorates from Leeds University and Sheffield University.

Dr. Norrish, who has spent much of the past two years in traveling in the Soviet Union, Canada and the United States, looks forward to more traveling. ◈

Dr. George Porter

Sailing is the favorite sport of Dr. George Porter whose research with his former teacher (Dr. Norrish) led him to be named one of the winners of the Nobel Prize in Chemistry.

Born in Satainforth, Yorkshire, in 1920, Dr. Porter first studied at the University of Leeds where he received his bachelor of science degree in 1941. He then went on to Cambridge University after service in World War II, obtaining his doctorate in 1949.

Dr. Porter was assistant director of the department of physical chemistry at Cambridge from 1952 to 1954. He then moved to the University of Sheffield as professor of physical chemistry.

He became a fellow of the Royal Society in 1960 and is now director of the Royal Institution in London which devotes itself to furthering scientific knowledge by research and public lectures.

He is the author of the book "Chemistry for the Modern World," published in 1962, and editor of a two-volume study, "Progress in Reaction Kinetics." ◈

LSD

Broken chromosomes: more evidence

Last spring Dr. Maimon Cohen of Buffalo's Children's Hospital supplied ammunition to scientists warning of dangers from LSD when he reported that if the hallucinatory drug is added to cultures of white blood cells, an abnormally high number of chromosomes in the cells break—which could, if common to other cells, fracture heredity. His findings were backed by Oregon researchers who found a high incidence of chromosomal breakage in white cells in the blood of LSD users (SN: 6/3).

To support his in vitro experiments with human trials, Dr. Cohen collaborated with Dr. Kurt Hirschhorn of New York's Mount Sinai Hospital to study the effects of LSD in 18 adult users and four children exposed to LSD before birth. Their results, which are expected to appear within a few weeks in the NEW ENGLAND JOURNAL OF MEDICINE, were reported last month to a New York Academy of Sciences meeting on pharmacogenetics.

Chromosomal breakage in white cells first was measured in 12 drug-free controls who showed an average breakage of 3.8 percent. But the 18 adults who had taken LSD showed an average breakage of 13.2 percent, Dr. Hirschhorn says, with individual ranges between 5.3 and 25.1 percent damage. Of the four children, two, whose mothers had taken only low doses of LSD while pregnant, showed no significant abnormalities but in the other two, whose mothers were heavy LSD-users, breakage was about 13 percent.

Hints from early reports that LSD might cause genetic abnormalities, lead to leukemia or trigger an autoimmune disease in which the body destroys its own tissues, prompted a number of researchers to study LSD. Among them are three California scientists who moved into the field after Dr. Cohen's initial report of in vitro damage and before his most recent work with Dr. Hirschhorn was completed. In the Oct. 27 issue of SCIENCE, in a report that was admittedly hurried and inconclusive, Drs. William D. Loughman, Thornton W. Sargent and David M. Israelstam of the University of California at Berkeley, challenge the relevancy of Dr. Cohen's test tube studies on the basis of their own experiments on eight hippies who were clients of a San Francisco welfare agency. In a study that was run, they say, "quickly because subjects were available," they found no chromosomal abnormalities in white cells of the subjects who had taken large amounts of LSD.

In some cases, among the subjects they studied, the LSD was taken alone; in others it was taken in combination with other drugs, including mescaline and DMT or dimethyltriptamine. Because of the speed with which the work was done, however, some effects might have gone undetected.

In Dr. Cohen's test tubes, they say, pure LSD was applied to dividing white cells and extraneous influences were controlled. Extrapolation of these results to humans is risky because circulating blood cells normally do not undergo cell division and because a variety of unknown quantities, including the effects of other drugs and factors of metabolism, may be at work. So far, they have not seen the results of Drs. Cohen and Hirschhorn's human experiments.

In spite of strong evidence that LSD does cause chromosomal abnormalities, none of the scientists studying the drug is prepared to make any definitive statement about what the chromosomal breakage means. "Even within our group of 18 subjects, there was a wide spectrum of degree of damage," Dr. Cohen says, "because everyone does not react to a drug in the same way." According to Dr. Loughman, "there is enough conflicting evidence to make a thoughtful man cautious about making pronouncements." Carefully controlled animal work and in vivo tests of other types of human cells—perhaps from bone marrow or connective tissue—are needed to positively establish LSD's effects. Such studies have not been done; nor are they known to be planned at this time. ◈