

## GENERAL SCIENCE

# Nobelist Linus Pauling

Chemist, honored for his work on the forces that hold matter together, may have passport difficulties. Two German physicists awarded 1954 Nobel Prize in physics.

## See Front Cover

► **FORCES THAT** hold all matter together, ranging from forces inside the atom to those that build protein molecules into flesh, hair and blood, are better understood because of the work of Dr. Linus Pauling, chairman of the division of chemistry and chemical engineering at the California Institute of Technology, who was awarded the Nobel Prize in chemistry for 1954.

Structure of the atom as revealed by light emitted by heated materials was one of the fields first explored by Dr. Pauling. This led him to discovery of laws of chemical combination, explained by him in his classic work, "The Nature of the Chemical Bond."

Determination of spiral structure, like the strands of a twisted rope, which make up skin, hair and many other structures of living tissue have won Dr. Pauling recent honors.

He is shown on the cover of this week's SCIENCE NEWS LETTER demonstrating with rope strands how molecules are twisted into the structure of protein.

His recent discovery that some types of anemia are due to defective blood hemoglobin structure opens a new method of attack on diseases like cancer whose causes are now obscure.

## Passport Difficulties

► **A PASSPORT** may not be issued to Dr. Linus Pauling, America's newest chemistry Nobel, when he applies for the permission of the Department of State to go to Stockholm Dec. 10 to receive the world's highest scientific honor.

So effective was the smear of McCarthy upon Pauling in 1952 that only with great difficulty did Pauling get a geographically limited passport to attend scientific meetings in England and France that year. Last year, it is understood, Dr. Pauling was invited to India but could not get a passport for travel in a part of the world that the State Department considered "hotter and more sensitive" than Europe.

With an impressive list of scientific honors, including medals from here and abroad and the past-presidency of the American Chemical Society, Dr. Pauling's researches on the forces that hold matter together, particularly the chemical bond and the structure of protein, rate him as one of the world's great scientists.

If the United States government keeps him at home and he can not travel to Sweden to receive the Nobel prize, it will join with Hitler in using restrictions to try

to punish or force into line political dissenters. Hitler did not allow some of the great German Nobelists to accept their prizes. Mussolini, another dictator, also made it difficult for Dr. Enrico Fermi, then an Italian, to receive his Nobel award.

Shortly before Dr. Pauling had trouble getting a passport in 1952, a concept of molecular structure, called the theory of resonance, which he originated, was denounced by resolution at a Soviet chemical conference. Thus, Dr. Pauling found himself under fire from both the U. S. Department of State and the official upholders of the Communist line of scientific thought.

Dr. Pauling's application for a passport, if denied by the Secretary of State, could go before a passport appeals board, a procedure that Dr. Pauling did not use when his permission to travel to India was denied. Since only about a month's time elapses between the announcement of Nobel prizes and their presentation, any delay in passport issuance might effectively keep Dr. Pauling at home.

Evidently the appeals procedure is so burdensome that it has never been used, so far as is known. The State Department considers passport matters confidential.

Dr. Pauling was born in Portland, Ore., in 1901 and since 1922 has been associated with the California Institute of Technology where he is chairman of the chemistry and chemical engineering division. Among many honors he received the Presidential Medal for Merit for scientific services to the government during World War II.

When Dr. Pauling attempted a second time to get a passport in 1952, he said that "refusal of a passport to me would consti-

tute the unjustified interference by the government not only with the freedom of a citizen, but also with the progress of science." At that time he was informed that his "anti-communist statements have not been sufficiently strong." He has denied that he had ever been a communist.

If a passport for Dr. Pauling is not forthcoming, vigorous protests may be expected from scientists, whether liberals or conservatives. It will play into the hands of enemies of America abroad.

But the State Department may be more afraid of the reaction of McCarthy and others in Congress than they are of scientists and overseas opinion.

The granting of a passport is at the discretion of the Secretary of State and is not controlled by the McCarran-Walter Act that has made it so difficult for so many foreign scientists to get visas for visits to the United States.

Many of the difficulties of American scientists in getting passports and foreign scientists in getting U. S. visas do not come to public attention.

Some of the meetings and conferences held in the United States are making a practice of attempting to "clear" the foreign scientists with the State Department before inviting them to be sure that they will be allowed in the country.

Even then almost every meeting with any considerable number of foreigners will have a "no-show" whose visa has not come through for some reason or other. It does not help to have delays laid to the slowness of a clerk in one of our consulates abroad, even when that is the explanation.

Some international meetings were moved out of the United States, in some cases to Canada.

The practice of making it hard for liberals or anyone who has been red-baited is a kind of anti-intellectualism that has shown itself in the Oppenheimer and Condon cases as well (and this applies equally well for either Condon).

If some other government were doing it, Americans would be horrified.

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# Two Atomic Pioneers

► **TWO PIONEERS** in the conversion of solid matter into invisible energy and vice versa have been jointly awarded the 1954 Nobel Prize in physics.

They are German-born Max Born, 72, a naturalized British citizen now living in Heidelberg, West Germany, and Walter Bothe, 63, of Heidelberg University.

In 1931, Dr. Bothe and Dr. H. Becker tapped the energy of the atomic nucleus. They bombarded a beryllium target with alpha particles, causing the beryllium to emit X-rays of considerably more power than the bombarding particles.

Commenting on these experiments, Prof. Arthur H. Compton foresaw the possibility

of getting useful energy from the atom, now a reality.

Prof. Born was one of the first physicists to attempt to reconcile classical physics with quantum mechanics, in order to explain the structure of the atom, work basic to today's atomic piles and hydrogen bombs.

Prof. Born was cited for his fundamental research in quantum mechanics, particularly his statistical interpretation of the wave function.

Prof. Bothe was honored for the discoveries resulting from his method of coincidence counting. By this technique, two Geiger-Muller tubes are connected in series,