

PRESENTATION OF THE ROEBLING MEDAL OF
THE MINERALOGICAL SOCIETY OF AMERICA
TO PAUL NIGGLI*

EDWARD H. KRAUS,
University of Michigan, Ann Arbor, Michigan.

Ten years ago at the meeting of this Society in Washington the first Roebling Medal was presented to Charles Palache, the Dean of American Mineralogists and for many years a close friend of Colonel Washington A. Roebling. Since then four other mineralogists from the United States and one from Great Britain have been recipients of the medal. Meeting today in Ottawa, the capital of the Dominion of Canada with its many close ties to the Old World, it is indeed fitting that a European should be selected to receive the award on this occasion. It is also very appropriate that the recipient should be a native and resident of Switzerland, the country which for centuries has been noted for the industry, efficiency, and integrity of its citizens and has always stood as a mighty bulwark for science, democracy, and international good will.

Paul Niggli was born at Zofingen, Switzerland, on June 26, 1888. His early education was obtained in the city of his birth and at near-by Aarau. In 1907 he entered the Eidgenössische Technische Hochschule in Zürich, from which he was graduated as an engineer in 1912. He then studied for a short period at the Technische Hochschule in Karlsruhe, Germany, and on his return to Switzerland passed the examinations at the University of Zürich for the degree of Doctor of Philosophy.

At the institutions in Zürich and Karlsruhe he was privileged to study with many eminent scientists. These included the mineralogist and petrographer Ulrich Grubenmann, the geologist Albert Heim, the chemists Richard Willstätter, G. Bredig, and E. Baur, and the physicists Pierre Weiss and Albert Einstein. Having devoted much time to physics and physical chemistry, it was quite natural that he should wish to spend some time at the then recently organized Geophysical Laboratory in Washington, where in 1912-13, as one of the first Europeans to do so, he engaged in research. On his return to Zürich, frequently called the Athens of Switzerland, he qualified as a Privat-dozent at the University. From 1915 to 1920 he held appointments at the German universities in Leipzig and Tübingen. He then became professor of mineralogy and petrography in Zürich, as the successor to his distinguished teacher, Professor Grubenmann. It should be stated that in Zürich the Technische Hochschule and

* Presented at the annual luncheon meeting of the Society which was held on December 20, 1947, Ottawa, Canada.

the University are very closely integrated, and some staff members serve both institutions, as does Professor Niggli.

In 1920, when Dr. Niggli was appointed professor, Zürich was widely recognized as a leading center for the study of the earth sciences. This was due in large measure to the many important and enduring contributions made by his distinguished predecessors and teachers, notably Kenngott, Grubenmann, and Heim. To maintain this high reputation and, if possible, to increase the prestige of the institutions in Zürich was no small task that devolved upon Professor Niggli. Possessed of an apparently limitless store of energy and industry and with an excellent preparation and experience in the newer phases of science as related to mineralogy and petrography, he soon demonstrated that he was equal to this task.

Professor Niggli's bibliography includes nearly two hundred papers and about fifteen books. In these publications, he clearly reveals his comprehensive grasp not only of the earth sciences, but also of cognate fields. This is amply illustrated by his studies dealing with fundamental crystallographic and theoretical structural concepts, stereochemistry as applied to crystals and minerals, ore deposits, the constituents and products of the magma, igneous and metamorphic rocks, paragenesis of minerals, the minerals of the Swiss Alps, and the science of snow and avalanches, to mention some of the general subjects. By applying the newer methods and viewpoints as developed by physical chemistry and modern physics to crystallographic, mineralogic, and petrographic problems, he has in many of his publications opened new avenues of approach and has thus influenced scientific thinking and interpretation.

Along with this unusual scientific activity, Professor Niggli served from 1921 to 1940 as editor of the *Zeitschrift für Krystallographie und Mineralogie* founded by Paul Groth at Strasbourg in 1877. Because of the shift in emphasis which had taken place in crystallographic and mineralogic research, the name of the journal was changed to the *Zeitschrift für Krystallographie* with the sub-title *Krystallogometrie, Krystalphysik, Krystalchemie*. Beginning with the sixtieth volume in 1924, the distinguished physicists Max von Laue and P. P. Ewald, and the well-known physical chemist K. Fajans were associated with him as editors. During Dr. Niggli's incumbency as editor, forty-six volumes of the *Zeitschrift* were published.

Professor Niggli has not only achieved an eminent international reputation as a scientist and editor, but he has also demonstrated exceptional ability as an administrator. This is evidenced by the fact that he has served as rector of the Technische Hochschule for three years (1929-32) and of the University of Zürich for two years (1940-42). Last year

he was chairman of the commission on arrangements for the two hundredth anniversary of the founding of the Naturforschende Gesellschaft of Zürich, which was held in September, 1946, and as president of that organization he presided at the sessions. Moreover, he is president of the Geotechnical Commission and a member of the Geological Commission of Switzerland. Service on important educational committees of the University and of the Canton of Zürich must also be mentioned.

Professor Niggli's achievements have been recognized by the conferring of honorary degrees upon him by the Universities of Geneva, Budapest, and Sofia, and the Technische Hochschule in Stuttgart. In addition, he has been elected a fellow or corresponding member of approximately twenty of the world's leading learned and scientific societies, including the Mineralogical and Geological Societies of America. He is indeed a citizen of the world.

We all rejoice that Professor Niggli could be present at this meeting, which is truly of an international character. His attendance was made possible by a substantial grant from the American-Swiss Foundation for Scientific Exchange, Inc.

Paul Niggli.—In recognition of the many significant and abiding contributions which you, as teacher, investigator, author, and editor, have made to the advancement of the various branches of science represented by this society, it is indeed a great privilege and honor, on behalf of the Mineralogical Society of America, to present to you the Washington A. Roebling Medal.