Introduction

Whether quarried, mined, harvested, or manufactured, all materials are expressions of the forces of nature. The artist encounters these forces in his work, as do architects, road builders, and scientists. Both the artist and the scientist are aware that the difference separating the hard, sharp, and distinct from the soft, blurred, and fuzzy, is a matter of viewing distance, rather than a difference between organic and inorganic. The embryo begins life with a pattern of organization like a galaxy. Crystals under the microscope seem to multiply like organisms. The understanding of all materials as "living" gives us, on the one hand, a sense of the continuity of nature, and, on the other hand, makes us aware of the great variety of ways in which materials assert their character. In this book I try to show how this assertiveness of materials interacts with the will of the artist in the complex process called "making a sculpture."

Some familiarity with the concepts underlying contemporary artistic and technological forms is essential to anyone who wishes to venture into sculpture today. In other words, *what to make* is inextricably bound up with *how to make it.* Somehow the idea still persists that one learns methods from one kind of book, and the aesthetics of art from another. In this book I have attempted to provide a unified approach by showing how processes are actually employed by contemporary sculptors to achieve their creative objectives. I hope that the illustrations and their captions will help to show how processes affect the way sculptures look.

I have been as down-to-earth as possible in describing ways and means. Much of the information a sculptor needs today is to be found only in scientific or industrial literature, where the presentation is likely to be technical and complex. Furthermore, the results obtained by industrial processes are not always those desired by the sculptor. What the sculptor really needs is engineering principles translated into rules of thumb. Over the past few years a body of knowledge has been brought into being by a number of imaginative contemporary sculptors who have, with great ingenuity, learned to adapt the tools of industry to the needs of sculpture. We are also seeing a renewed interest in methods of the near and ancient past.

This manual, in keeping with the American tradition of the kitchen-laboratory and the backyard-

studio, draws on many household methods of doing things, especially when they have proved to be the most widely used and efficient. I hope some of these practices will recommend themselves to students and artists of moderate means. As well as drawing inspiration from the kitchen cupboard, the book also makes use of the practices of the garage, the machine shop, the factory, and the scientific laboratory. Many of the fascinating and elaborate craft practices of former times have been eliminated, not without a twinge of nostalgia, in favor of more practical methods. I have explained some ancient trade secrets in everyday terms and shown why they became secrets in the first place. Some aspects of the interactions of materials are, however, still mysteries, and are likely to remain so for a long time.

A final chapter on planning and equipping the studio will, I hope, bring into focus an overall view of the various methods described earlier. Proper disposition of equipment and space are crucial in ensuring that the functions of the studio contribute harmoniously to the total rhythm of work.