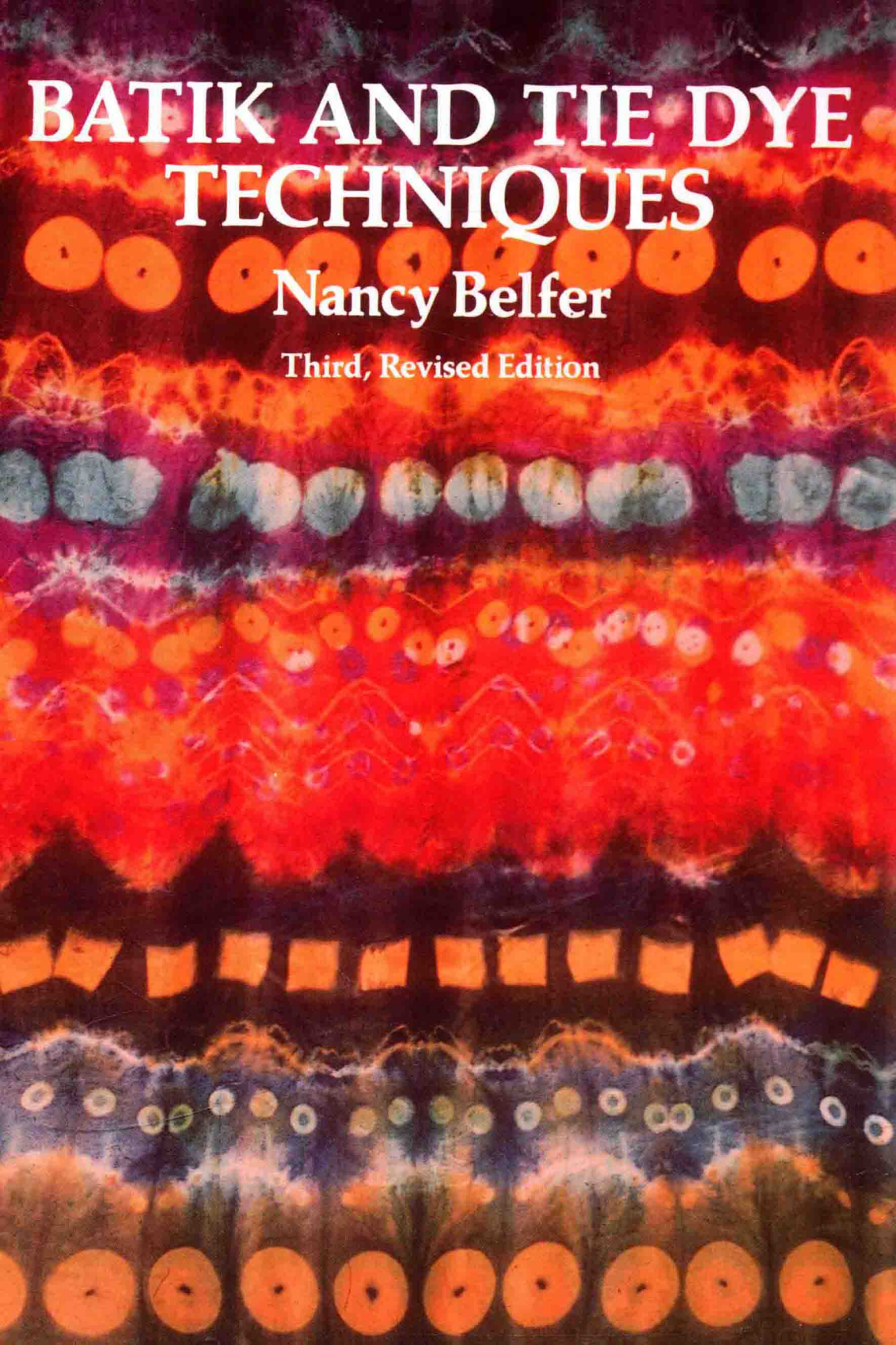
BATIK AND TIE DYE TECHNIQUES

Nancy Belfer

Third, Revised Edition



Batik and Tie Dye Techniques

NANCY BELFER

Third, Revised Edition

DOVER PUBLICATIONS, INC., New York

Bibliographical Note

Batik and Tie Dye Techniques, first published by Dover Publications, Inc., in 1992, is a further revised edition of the 1977 Prentice-Hall, Inc., revised paper edition of *Designing in Batik and Tie Dye*, first published by Davis Publications, Inc. in 1972. An index has been added for the Dover edition.

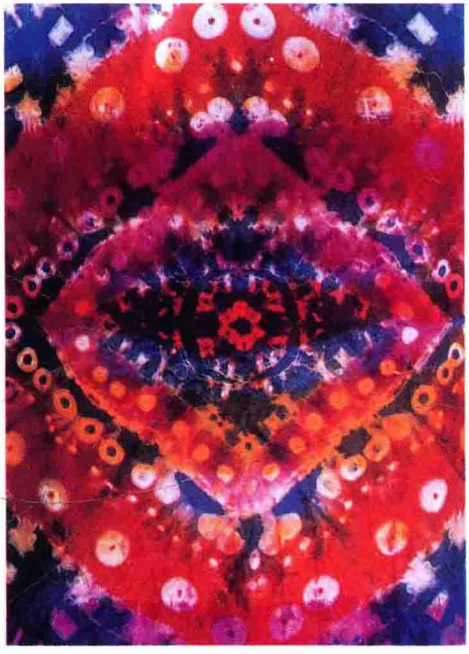
Library of Congress Cataloging-in-Publication Data

Belfer, Nancy.
Batik and tie dye techniques / Nancy Belfer.
p. cm.
Rev. ed. of: Designing in batik and tie dye. 1977.
Includes bibliographical references and index.
ISBN-13: 978-0-486-27131-6
ISBN-10: 0-486-27131-5
1. Batik. 2. Tie-dyeing. I. Belfer, Nancy. Designing in batik and tie dye. II. Title.
TT852.5.B43 1992
746.6'6—dc20 91-48035
CIP

Manufactured in the United States by Courier Corporation
27131509
www.doverpublications.com

Milagro, reversible coat by Kymberly Henson. Gutta-resist with dye and pigment applications on raw silk; hand-quilted and beaded.

Cézanne's Table (68″ × 44″) by the author. Wax-resist batik on cotton.

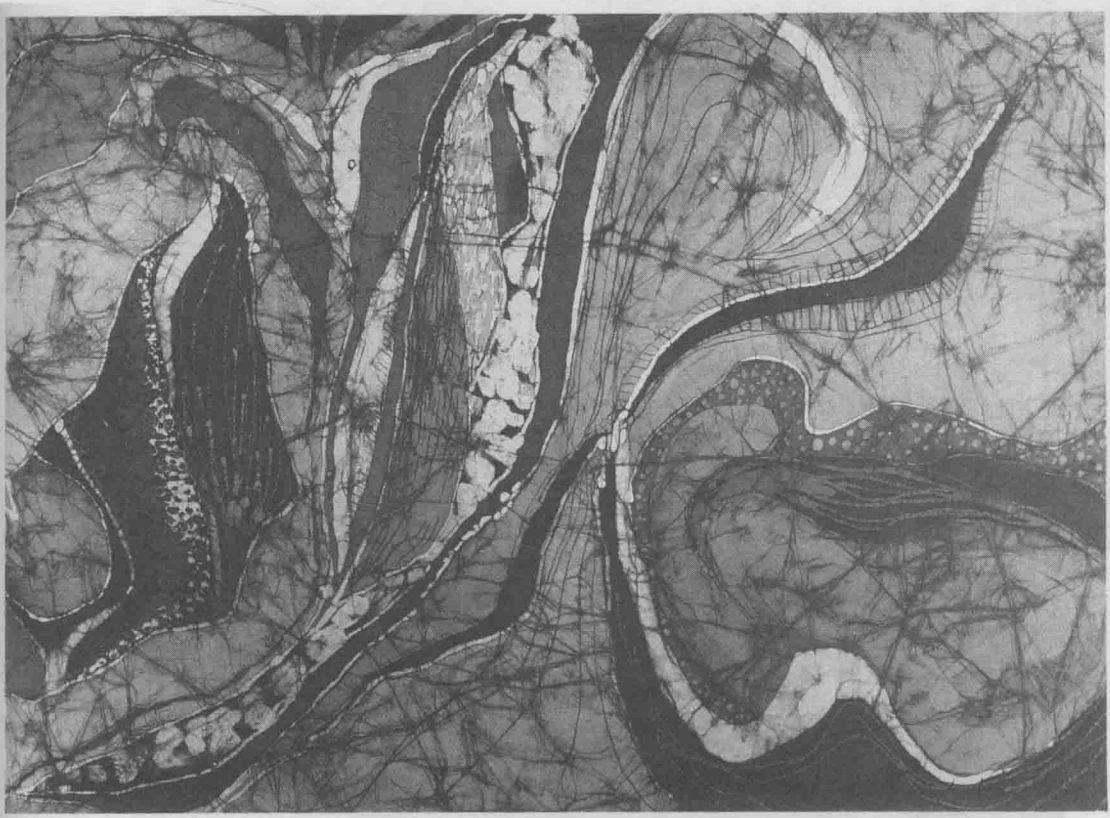


Wall panel (detail) by the author. Pleating and clamped resists on silk.

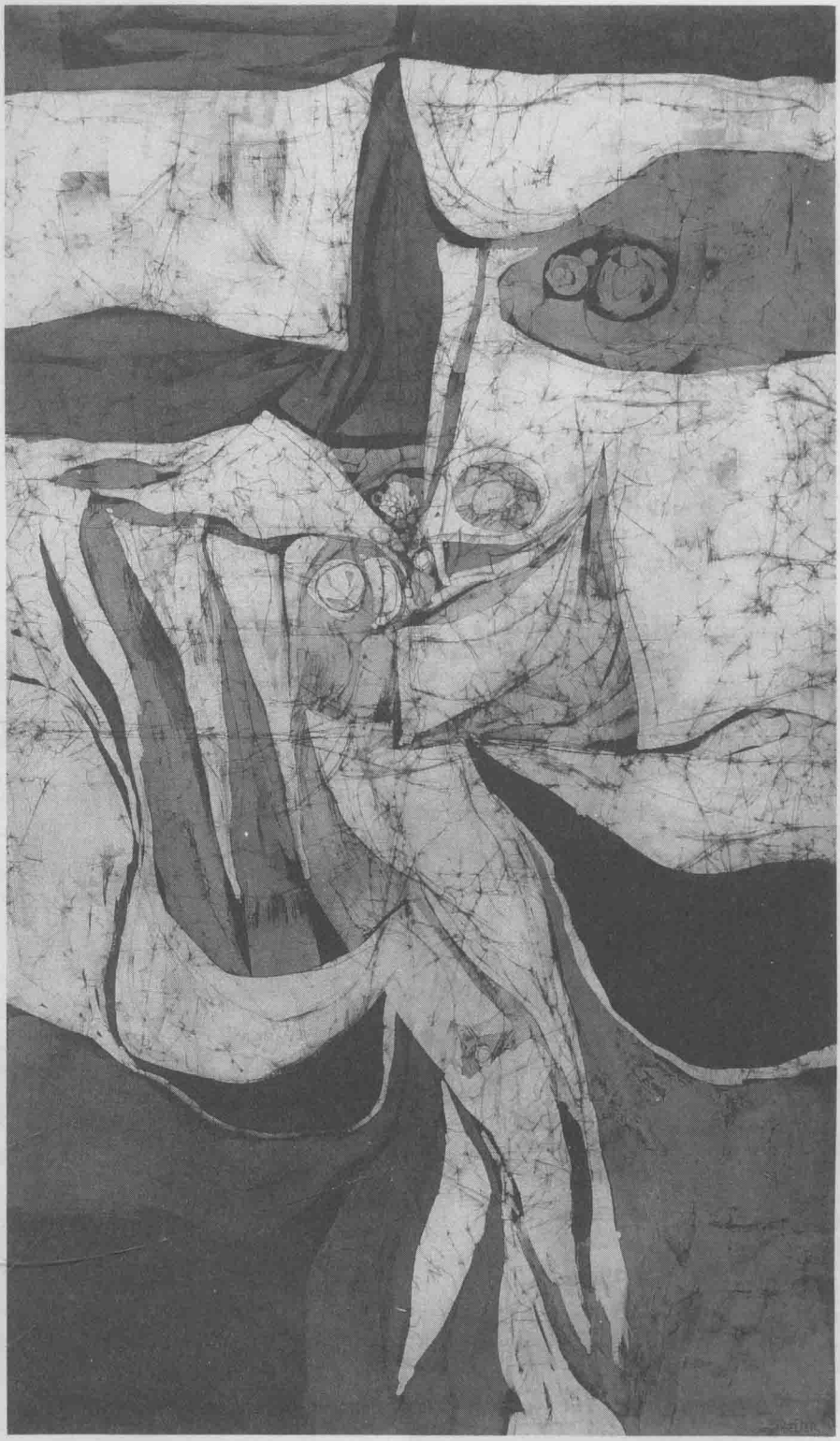
Wall panel (64″ × 42″) by the author. Pleating and tied resists on silk.

Plant Study (36″ × 40″) by the author. Wax-resist batik on viscose rayon.

City with Sun and Moon (45″ × 74″) by the author. Wax-resist batik on cotton.



Garden Fragment (35″ × 45″) by Maribeth Frey. Wax-resist batik on cotton.



Earth Forms (62″ × 36″) by the author. Wax-resist batik on cotton.

Preface

There are a few links with the ancient past that have not been completely rejected by our immersion in the daily marvels of a mechanized age. These links seem worth caring about and continuing. In different times and in different parts of the world, ideas evolved about using coloring agents. These, together with various other materials, were applied in a manner that formed a protection or "resist" on the cloth. The sections of the cloth so protected would not be colored by the dye; when the resist material was removed, the image emerged.

The hand embellishment of textiles with natural colorants, or dyes, was known to the most primitive of peoples. The resist techniques, requiring the methods of tying, folding, binding of the cloth, as well as the application of penetrating starch pastes or hot wax solutions, were known before the beginnings of recorded history. The uses of dyes and mastery of dye technology are considered by some scholars to be among the more significant achievements of civilized man. In some areas, these skills developed with astonishing sophistication; and then, as religious, political,

economic or cultural changes occurred, long-used knowledge became lost.

Many of these processes have been kept alive and today are revitalized by contemporary attitudes about expressive values in art. The traditional examples illustrated in this book give eloquent testimony to the careful complexity of the design motifs as well as the richness of the dye coloration. These pieces are not meant to serve as models to be imitated. They are presented as utilitarian design solutions coming from a particular culture at a particular time, with the symbolic patterning and imagery reflecting very specialized needs and values. We can learn much by studying these pieces, with the realization that today fine skills are most relevant when they allow the artist to pursue his own inventive spirit.

This book describes the historical applications of batik and tie dye resist techniques, as well as a wide range of contemporary approaches and innovations. It is a book for those who wish to learn skills, which are certainly necessary and important. But it is also for those who wish to encourage their ability to see beyond the obvious, to struggle beyond the common-place. Work in these resist-dye textile processes can offer a fascinating challenge, a creative experience of deep pleasure and accomplishment.

ACKNOWLEDGMENTS

A note of thanks is due to my students, colleagues, and friends who helped in many ways.

The traditional batik cloths, dating before World War I, are from the extensive private collection of Mrs. Henry J. Post. Dr. Anna P. Burrell, Harun Arrasjid, and Walter Wells loaned the more recent examples of batik and tie dye from Java and India.

Most of the black and white photography is the work of Stephen Mangione, with special contributions by Paul Pasquarello, Gail Krakauer, Nancy Dayton, and H. Joseph Trapper.

The professional textile artists who graciously loaned examples of their personal creative work for inclusion are Morag Benepe, Marian Bode, June Bonner, Marian Clayden, Carol Parzen, Carter Smith, and for this new edition, Dorothy Caldwell, Kymberly Hensen, and Yukie Orenstein.

Many students from Buffalo State College kindly allowed their work to be used as examples of the various techniques described. Each is individually credited.

Contents

1 *Early Uses of Dyes*

Dyes are a kind of magic, a delight to the eye and a joy to use. Even a brief inquiry into the early discoveries and uses of these coloring agents conveys a sense of mystery and glamor. Primitive people in many different parts of the world discovered that certain root, leaf, or bark material could be treated to produce color in a fluid form. Its application was both religious and functional—the embellishment of body, clothing, and utensils.

Ancient Chinese writings, 2500 B.C., mention the use of dyes on cloth. The Peruvians, during a time corresponding to the first centuries of the Christian era, worked with well over a hundred distinct hues in their textiles. The superb mastery of dyeing skills, which developed in India, was praised throughout the Roman world; excavated cloth fragments indicate a tradition going back some 5,000 years.

In Greek antiquity, myths often allude to dye colorings. Of intriguing interest is one of the few truly fast dyes in use at this time: purpura, extracted from gland secretions of mollusks along the Greek coastline. It was known to the Phoenicians and has been traced back

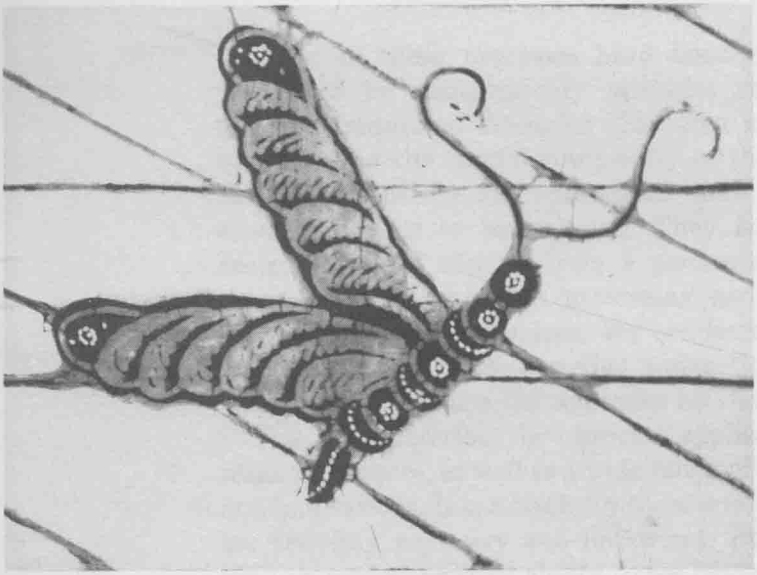


Figure 1 A close look at a fanciful insect: one of many on a traditional Javanese batik sarong.

to Minoan Crete. The term "purple" was applied to the range of red to blue violets made from these shellfish secretions, a colorless liquid that oxidized when it was exposed to air. Hills of crushed shells today identify the remains of extensive dye works. The color was difficult to process and was used only to dye the finest garments, robes, and cloaks worn throughout the Mediterranean world as a distinctive mark of luxury.

Purple has since become a symbol of aristocratic pomp and celebrity, the color of royalty. Strangely enough, knowledge of this color, known as Tyrian purple, became lost during the Dark Ages. It was rediscovered by a French scholar in the middle of the nineteenth century, about the same time chemically made dyes were first introduced in England.

Numerous plants, certain insects and shellfish, as well as some minerals, have been found to be sources of colorants. Knowledge of the preparation and usage of natural dyes evolved slowly over centuries of trial and error experimentation. The formulas and recipes were often carefully protected secrets, subject to cloak and dagger intrigues and trade conflicts among rival countries. In India, where resist dyeing probably originated, the complex technology involved in the formulation of dyes and mordants was mastered to an unparalleled degree of perfection. Indian textiles have been known and prized by Europeans since the sixteenth century.

In the resist-dye techniques, the dyeing of the cloth cannot be thought of as the application of pigment to surface; there must be a chemical reaction between the coloring agent and the fiber so that

Early Uses of Dyes

the color becomes a permanent, integral part of the fabric. In order to achieve this affinity between dye and cloth, and also to insure fastness and color control, the use of a mordant became necessary.

Mordants are chemical solutions that can be used before, during, or after the dye bath; they prepare the fiber for receiving the color and also control the actual hue obtained. The same dye used with different mordants will produce different colors. Some commonly used mordant substances are organic acids (acetic, tartar, tannic), inorganic acids (sulphuric), and salts (alum, tartar emetic, Glaubers salt). If a certain color is to be duplicated, the preparation of the dye solution as well as the mordant must be exactly the same.

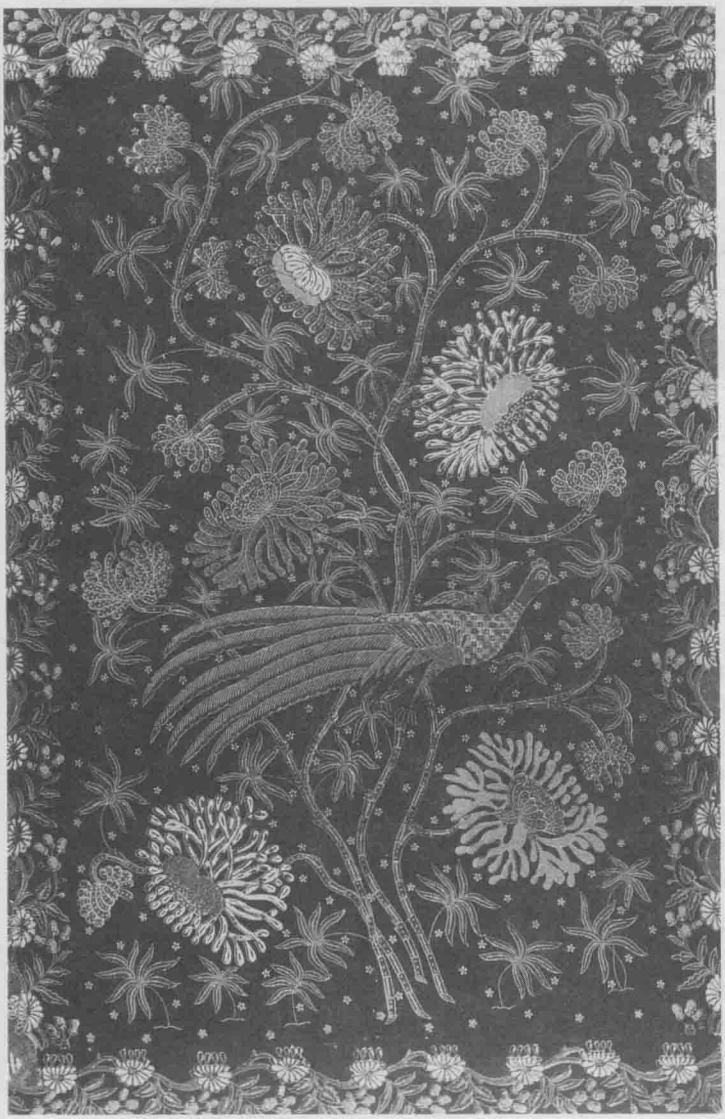


Figure 2 Remarkably detailed, this section of a Javanese batik sarong pictures a proud bird in a garden of freely drawn flowers.

Figure 3 A batik from India, this silk head scarf is in brilliant yellow and red, with stems and leaves in a smoothly flowing surface pattern.

Some of the oldest and most widely known of the natural dyes are:

Indigo—probably first used in India but known throughout East Asia before recorded history. This dye produces the familiar deep blue color so prevalent on Javanese batiks.

Madder—also originated in India; deep, rich reds are produced from powder formed by grinding the roots of the madder plant.

Cochineal—a range of brilliant reds; the grains are prepared from a dried insect, cocus cacti. This dye was first known in South America and Mexico.

From here the list can be greatly expanded to include numerous additional plants as well as certain species of insects, shellfish, minerals, and metals. The ingenious early development of fabric colorants from a variety of natural ingredients paved the way for the complex industrial dye technology we take for granted today. While there is still interest in the preparation of natural dyes, most textile artists prefer working with synthetic dyes in resist-dye applications.

2 The Resist-Dye Processes in Textiles

The various types of resist-dye processes can be best defined according to the type of resist that is used and the manner of its application.

HOT WAX RESIST

Using hot liquid wax, lines and shapes are drawn onto cloth with brushes, special tools, or stamps. The wax penetrates the cloth forming a resist. The unwaxed sections of the fabric are dyed; the sections of the fabric protected by the wax resist remain free of the dye. This process is known as batik throughout Indonesia, India, and the Orient.

In traditional batik, there is a characteristic network of fine, weblike lines scattered over the surface of the cloth, due to the deliberate crushing of the fabric prior to the final dye bath. As traditional methods are simplified and adapted to present-day interpretations, many variations are possible. The fabric can be taken through several overlapping applications of wax and dye, thus increasing the complexity of the design, or the work can be completed with a single application of wax and dye, as in silk painting, eliminating a final crackle-producing dye bath.