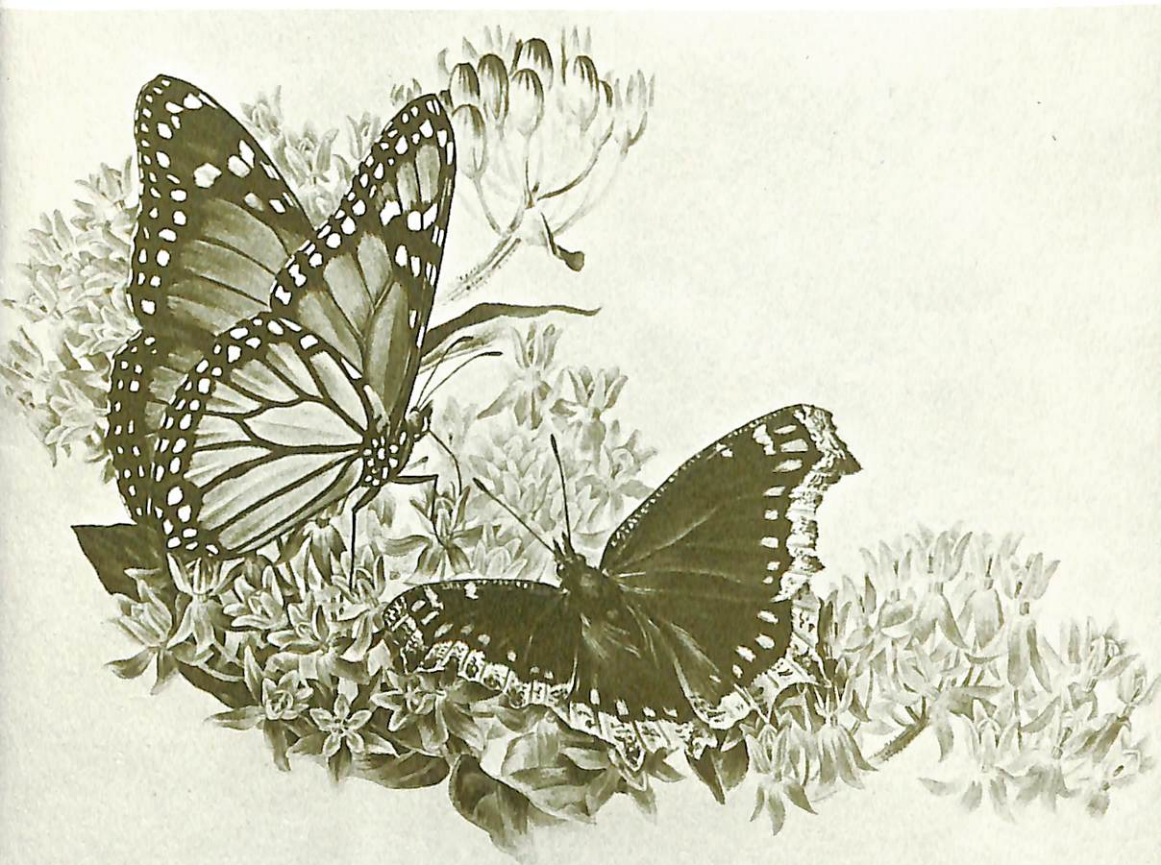


Botanical Illustrations

by

Anne Ophelia Todd Dowden

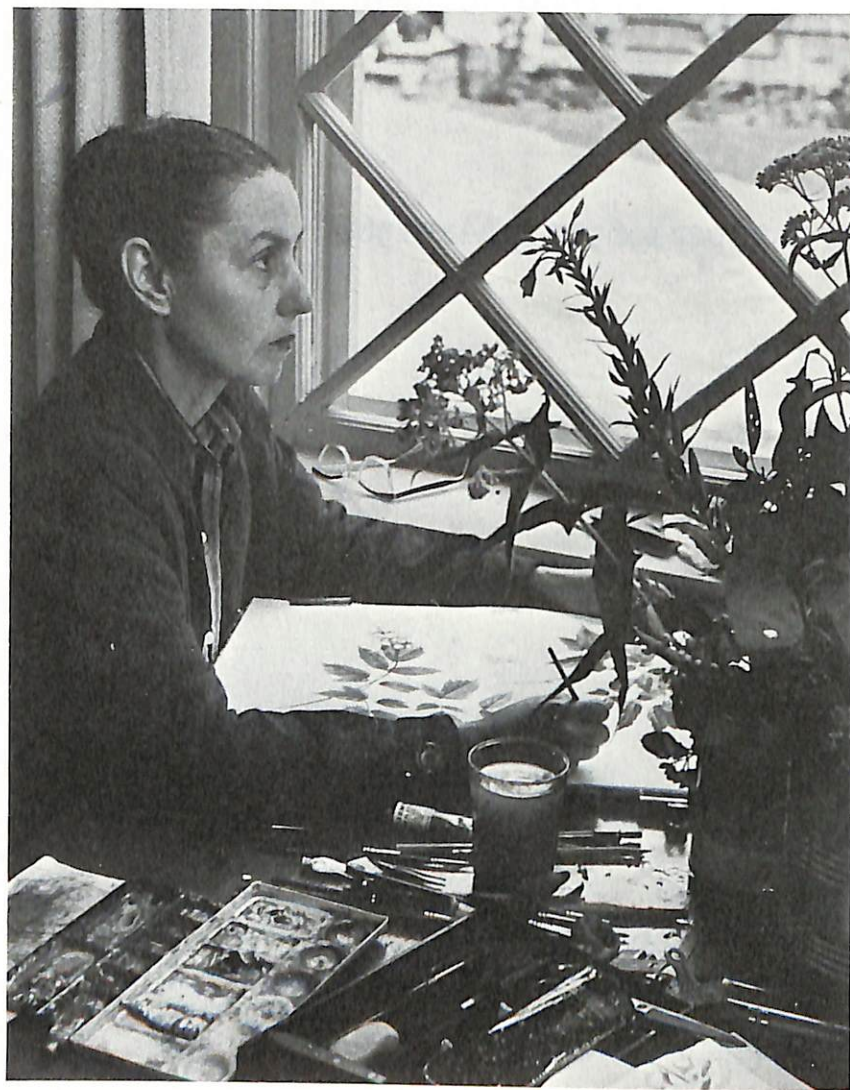


An Exhibition of
Botanical Illustrations by
Anne Ophelia Todd Dowden

17 October 1965 to 15 May 1966

THE HUNT BOTANICAL LIBRARY
CARNEGIE INSTITUTE OF TECHNOLOGY
PITTSBURGH, PENNSYLVANIA

1965



Foreword

THIS IS THE FIRST exhibition staged by the Hunt Botanical Library that brings to Carnegie Institute of Technology the work of a graduate of the College of Fine Arts. Her illustrations have appeared, under the name Anne Ophelia Todd, in full color in the pages of *House Beautiful*, *Life*, *Natural History*, and in both technical and popular books. The appearance, in 1963, of *Look at a flower* of which she was both author and illustrator, was the occasion for the change in her signature from Todd to Dowden. Her husband, Raymond B. Dowden, also a Carnegie Tech graduate, is head of the Department of Art and Architecture, Cooper Union, in New York City.

In the field of botanical illustration, which continues to resist the incursions of photography, Anne Ophelia Dowden has a background of circumstance and training that places her firmly and comfortably within the long tradition of botanical artists. She was born at Boulder, Colorado, where her father was head of the Department of Clinical Pathology of the University of Colorado. A childhood passion for collecting insects and plants found a theatre ready-at-hand in the foothills of the Rocky Mountains. The pursuit received encouragement and expert guidance from a close friend and neighbor, the late Theodore D. A. Cockerell, professor of zoology at the University. Both he and his wife, also a naturalist, assisted Anne Ophelia with her identification and drawing of specimens. From that time on, the habit of collecting and studying plants has persisted with Mrs. Dowden, to the extent that, without formal training beyond general courses in biology, she has taught herself enough botany to qualify as a research-illustrator, and is author of her own texts.

Art training and early career activities contributed substantially to Mrs. Dowden's ultimate profession as a botanical illustrator. At Carnegie Tech (Class of 1930) she specialized in illustration

and in New York, at the Art Students League and the Beaux Arts Institute of Design, continued her studies. In 1929-30, and in 1932, she was a Tiffany Foundation Fellow, working with plant motifs in design applications. Concurrent with teaching duties as instructor in drawing at Pratt Institute in Brooklyn (1930-1933) and as head of the art department at Manhattanville College in Purchase, New York (1932-1953), she was a free-lance textile designer and a member of the American Design Group. Here, too, she used flower forms as design motifs and moved towards a career in botanical illustration. By the early 1950's Mrs. Dowden turned increasingly in this direction, and began to accept commissions for botanical illustrations for magazines.

The requirements of botanical illustration are more exacting than may be apparent to the casual view; the field has its special problems. For example, the hues of many flowers are too brilliant and textures too delicate, to be captured by artists' pigments or printers' inks. Too often a plant will not remain static for the period of prolonged study required; petals or fragile stems can curl or bend within minutes, reflexed stamens may suddenly change position, or a closed seed-pod pop open! When the artist insists, as Mrs. Dowden does, on working exclusively from living plants, and when time is a limiting factor, he races frantically against the changing season: flowers of many kinds open and are gone before their portraits can be completed. Under these circumstances, familiar indeed to Anne Ophelia Dowden, sharp perception, retentive memory, a quick touch, and cultivation of "grace under pressure" are prime requisites for success.

Apart from such problems, good plant portraiture demands something more than botanical knowledge and technical facility. These attributes can be counted on to produce a rendering which, though accurate and precise in detail, may yet lack the essential ingredient of life. What is demanded is that the artist have a passion for flowers, that he feel for them sympathetically, that he be able to call intuitively upon science and art in unprescribable proportions. Mrs. Dowden's flower portraits, displayed in this exhibition, attest to her success in meeting these demands. Witness, for example, the presentations of the four plants repro-

duced in *The little hill* (nos. 38-41). The distinctive character, the feel, the very gesture, as it were, of each plant is captured with a simplicity that is only apparently artless, and in a way that photography cannot match.

For most of her illustrations Mrs. Dowden relies on the medium of transparent water color with body color—a medium that is eminently well-suited to the delicacy of the subject matter, and that she handles with a sensitivity and assurance that recalls the work of French masters of the early nineteenth century. In this, as in other respects, Anne Ophelia Dowden honors tradition, but it cannot be said that tradition has had a confining effect. In the three volumes published under her own authorship, the artist has carried her activities well beyond those customary with the natural history illustrator. In collaboration with publishers' designers she planned and composed her page layouts and details, and to a considerable extent was the designer of these books.

This exhibition makes no pretense to be a comprehensive one-man show, for it omits important aspects of Mrs. Dowden's career that are not related to botanical illustration, particularly her work in the field of textile-design. These works have been exhibited elsewhere, as has some of her botanical art. Moreover, some of her published botanical illustrations are omitted, such as those for "The best U.S. evergreens" (*Life*, 5 December 1955); for "Salad herbs" (*House Beautiful*, August 1958); for "Spring flowers" (cover, *House Beautiful*, May 1960); and for *The plants* (New York, Time Inc., 1963). This exhibition is, however, the most comprehensive of any yet staged to represent Anne Ophelia Dowden's career as a botanical illustrator.

The exhibition emphasizes Mrs. Dowden's published illustrations. It includes preliminary art work, original paintings, production proofs, and page openings. In addition, there is a selection of her research plates which serves as reference material. Thus, this display is closely related to the function of the Hunt Botanical Library as a research center for the study of plant literature. The inclusion of progressive proofs and other materials related to the printing of the books will be of interest to artists, students, and others who are interested in book production

processes. The display of originals in company with the printed counterparts invites comparison, not to deprecate the latter but to show the differences to be expected. It should be remembered that, when a popular book is published for mass consumption at a very modest price, highest quality in reproduction must not be demanded. Each of the two Odyssey Press books included, for example, sells for less than one dollar. Each admirably fulfills the purpose for which it was intended—to present technical subjects vividly, compactly, at a nominal price.

It is hoped that through the display of these illustrations and some of the preparatory work necessary to, but not visible in the final product, this exhibition may give the observer some idea of the planning and effort required of the illustrator, and of the work involved in the production of even a small book printed in color.

This exhibition has been made possible only because of the personal interest of Mrs. Dowden, who provided most of the original paintings and sketches, who made arrangements with her publishers for the contribution of related materials, and who furnished much of the background information used in the preparation of this catalogue. The officers of the Western Publishing Company, and its subsidiary The Odyssey Press, have not only made available the art work for its two books, *The secret life of the flowers*, and *Roses*, they have also supplied progressive proofs, layouts, and dummies that are a part of the production of Mrs. Dowden's most recent volume, *Roses*. To all of these persons, and to my assistants and those of this library's staff who have contributed to the staging of this exhibition, I express my sincere thanks. The cover illustrations of Butterfly-Weed and of cherries and almonds are from Mrs. Dowden's *The secret life of the flowers* (1964) and *Roses* (1965) respectively, and reproduced with permission of The Odyssey Press, New York.

John V. Brindle
Curator of Prints and Exhibits

24 September 1965

Research Paintings

Twenty-one selections are presented, from a group of more than 200 reference plates executed in water color, and direct from living plants, by Mrs. Dowden. This provides her with an all-seasons' collection, a primary reference source available when preparing illustrations. Examples of plant figures derived from this source are to be seen throughout this exhibition. The plates show the habit of the plant natural size, developmental stages of growth, and dissections of diagnostic features of flowers, fruits, and seed—often enlarged: A few plates show the roots of the plant—a feature much more in evidence in the 16th century herbal figures than in later plant illustration. Although these paintings are utilitarian in purpose, they may truly be called portraits in the sense traditionally expressed by the term 'icones' (from the Greek ikon, meaning image) as used in titles of botanical books of earlier times—such as *icones plantarum* meaning illustrations of plants. Indeed, many of these paintings may appear familiar to anyone acquainted with botanical plate-books of recent centuries. Without stretching the point too much, they might almost be taken for originals by such men as Ehret, Jacquin, or Weiditz.

Mat openings for the water colors in this group are approximately 18" × 12".

- 1 Jack-in-the-pulpit (*Arisaema triphyllum*)
- 2 Castor-bean-plant (*Ricinus communis*)
- 3 English Hawthorn (*Crataegus monogyna*)
- 4 Goldenseal (*Hydrastis canadensis*)
- 5 Wild Cranesbill (*Geranium maculatum*)
- 6 Motherwort (*Leonurus cardiaca*)
- 7 Purple Loosestrife (*Lythrum salicaria*)

- 8 Soapweed (*Yucca glauca*)
- 9 Mountain-Laurel (*Kalmia latifolia*)
- 10 Panic Grasses (*Panicum oligosanthes* var. *scribnerianum* and *P. clandestinum*)
- 11 Autumn-Crocus (*Colchicum autumnale*)
- 12 Black Walnut (*Juglans nigra*)
- 13 Pomegranate (*Punica granatum*)
- 14 White Hellebore (*Veratrum viride*)
- 15 Butterfly-Weed (*Asclepias tuberosa*)
- 16 Pasture Rose (*Rosa carolina*)
- 17 Black Snakeroot (*Cimicifuga racemosa*)
- 18 Indian Paintbrush (*Castilleja californica*)
- 19 Bloodroot (*Sanguinaria canadensis*)
- 20 Common Milkweed (*Asclepias syriaca*)
- 21 Common Burdock (*Arctium minus*)



No. 12 Black Walnut

Edible Wild Plants

Reproduced by 4-color offset in *Life*, 26 May 1952. These paintings of plants eaten by the American Indian were produced originally for a work that would require simple direct-color separations, such as a silk-screen process. They demonstrate the effectiveness of flat, opaque base-colors, overlaid with black crayon shading. Mat openings are approximately 18" x 13".

- 22 Common Burdock (*Arctium minus*)
- 23 Common Milkweed (*Asclepias syriaca*)
- 24 Carrion-Flower (*Smilax herbacea*)
- 25 Jerusalem Artichoke (*Helianthus tuberosus*)



No. 22 Common Burdock

Flowering Shrubs

A 7-page 4-color spread alliteratively entitled "Beautiful Blooming Bushes" in the issue of Life for 11 April 1955 featured 13 opaque water colors by Mrs. Dowden. Three of these are shown here.

- 26 Scarlet Woolly Buckeye (*Aesculus discolor* 'Mollis'). 9" × 7 $\frac{1}{4}$ "
27 Purple Lily Magnolia (*Magnolia liliflora* 'Nigra'). 8 $\frac{1}{2}$ " × 12 $\frac{1}{2}$ "
28 Service-Berry (*Amelanchier sanguinea*). 8 $\frac{3}{4}$ " × 7 $\frac{1}{4}$ "

Wildflowers for Gardens

A 7-page spread in Life for 27 May 1957, featured 50 wildflowers representative of the six floristic regions of the United States. Most of the paintings of the species represented were adapted from her collection of reference plates. Four of the six original water colors are displayed here. Mat openings are approximately 19" × 13".

29 Pacific Coast Wildflowers

Top to bottom, left to right: (A) Common Monkey-Flower (*Mimulus guttatus*); (B) Leopard Lily (*Lilium pardalinum*); (C) Golden Iris (*Iris douglasiana*); (D) Royal Larkspur (*Delphinium variegatum*); (E) Common Camass (*Camassia quamash*); (F) Pacific Bleeding Heart (*Dicentra formosa*); (G) California-Poppy (*Eschscholzia californica*).

30 Great Plains Wildflowers

Top to bottom, left to right: (A) Large-flowered Beardtongue (*Penstemon grandiflorus*); (B) Evening-Primrose (*Oenothera missouriensis*); (C) Prairie-Clover (*Petalostemum purpureum*); (D) Maximilian's Sunflower (*Helianthus maximiliani*); (E) Red False-Mallow (*Sphaeralcea coccinea*); (F) Soapweed (*Yucca glauca*); (G) Goldenrod (*Solidago rigida*).

31 Rocky Mountain Wildflowers

Top to bottom, left to right: (A) Scarlet Beardtongue (*Penstemon barbatus*); (B) Poppy-Mallow (*Callirhoë involucrata*); (C) Lewis' Monkey Flower (*Mimulus lewisii*); (D) Blue Flax (*Linum lewisii*); (E) Pasqueflower (*Pulsatilla ludoviciana*); (F) Stonecrop (*Sedum stenopetalum*); (G) Colorado Columbine (*Aquilegia caerulea*); (H) Shooting-Star (*Dodecatheon pulchellum*).

32 Southwest Wildflowers

Top to bottom, left to right: (A) Four-o'clock (*Mirabilis multiflora*); (B) Skyrocket (*Gilia aggregata*); (C) Desert Zinnia (*Zinnia grandiflora*); (D) Prickle-Poppy (*Argemone platyceras*); (E) Segoe-Lily (*Calochortus nuttallii*); (F) Western Wallflower (*Erysimum asperum*); (G) Golden-Pea (*Thermopsis montana*).

- 33 The Red Prairie Sunflower (*Helianthus annuus*). Water color
 This painting, reproduced in full color in *Natural History* (vol. 68, facing p. 422, 1959), is of varieties produced from a wild mutant by the late Theodore D. A. Cockerell, a well-known onetime Colorado geneticist, neighbor, and a close friend of Mrs. Dowden.



No. 33 Red Prairie Sunflower

Plants of the Bible

Four water colors of biblical plants (reproduced in full color in *Natural History*, vol. 70, pp. 30-39, 1961), illustrate the article "Speak to the Earth."

- 34 Field Flowers (magazine cover)

Clockwise, from top: (A) Yellow Flag (*Iris pseudacorus*); (B) Polyanthus Narcissus (*Narcissus tazetta*); (C) Dandelion (*Taraxacum officinale*); (D) Saffron Crocus (*Crocus sativus*); (E) Tulip (*Tulipa maximowiczii*); (F) Hyacinth (*Hyacinthus orientalis*); (G) Ornithogalum (*Ornithogalum arabicum*); (H, in center) Poppy Anemone (*Anemone coronaria*). Mat opening: 17" x 11¼".

- 35 A Garden of Herbs (page 33)

Clockwise, from top: (A) Wormwood (*Artemisia absinthum*); (B) Balm-of-Gilead (*Balsamodendron opobalsamum*); (C) Castor-bean-plant (*Ricinus communis*); (D) Watercress (*Nasturtium officinale*); (E) Coriander (*Coriandrum sativum*); (F, in center) Chicory (*Cichorium intybus*). Mat opening: 17" x 12".



No. 34 Field Flowers

36 Plants for the Temple (page 36)

Clockwise, from top: (A) Willow (*Salix babylonica*); (B) Frankincense (*Boswellia carteri?*); (C) Myrrh (*Myrrhis odorata*); (D) Cassia (identity unknown); (E) Myrtle (*Myrtus communis*); (F) Sweet Storax (*Styrax officinale*); (G) Citron (*Citrus medica*). Mat opening: 17" × 12".

37 "Food for Life" (left) and "Fruits of the Land" (right) for a double-page spread (pages 34-35)

Top to bottom, left to right: (A) Broad Bean (*Vicia faba*); (B) Lentil (*Lens esculenta*); (C) Cucumber (*Cucumis sativa*); (D) Barley (*Hordeum vulgare*); (E) Black Walnut (*Juglans nigra*); (F) Onion (*Allium cepa*); (G) Fig (*Ficus carica*); (H) Pomegranate (*Punica granatum*); (I) Date (*Phoenix dactylifera*); (J) Grape (*Vitis vinifera*); (K) Apricot (*Prunus armeniaca*); (L) Olive (*Olea europaea*). Mat opening: 17" × 24½".

Books

The little hill. Text and illustrations by Anne Ophelia Todd. New York, Cooper Union School of Art and Architecture, 1961

Known as CUAS 8, this is the eighth annual volume produced under faculty supervision by Cooper Union students of the book arts. *The Little Hills* is "a chronicle of the flora on a half acre at Green Camp," the New Jersey summer campus of Cooper Union. Over a period of years, Mrs. Dowden studied this flora intensely, collected and identified more than 170 kinds of plants, and made more than 100 drawings and paintings of them. From this collection four water colors were reproduced in 6-color offset. The text is letterpress. Mat openings are approximately 20" × 13".

38 False Solomon's-Seal (*Smilacina racemosa*)

39 Blackberry (*Rubus allegheniensis*)

40 Queen Anne's-Lace (*Daucus carota*)

41 Common Mullein (left: *Verbascum thapsus*; right: *V. phlomoides*)

Look at a flower. Text and illustrations by Anne Ophelia T. Dowden. New York, Thomas Y. Crowell Co., and London, Constable and Co., 1963.

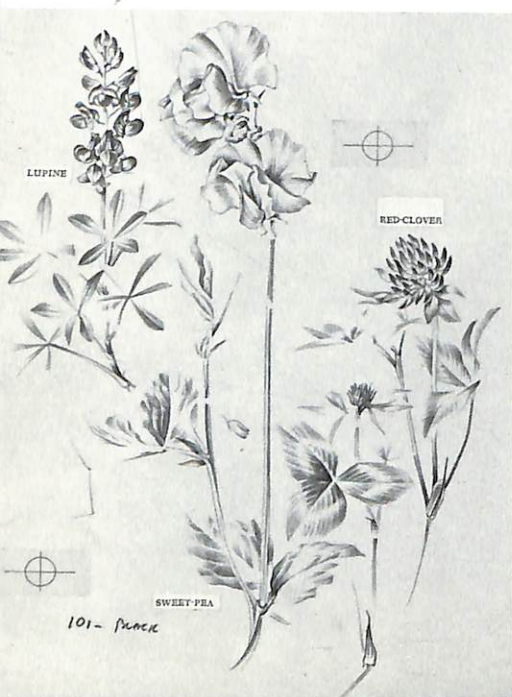
This is the first commercially-produced book of which Mrs. Dowden is both author and illustrator, and to a considerable extent also the designer. The printing of both text and illustrations by offset made it feasible for her to locate illustrations adjacent to related text, eliminating the need for general captions and requiring only identifying labels for the subjects illustrated. The two-color scheme is economical; the added color serves only for emphasis and decorative effect. The artwork is painted in opaque water color and wash on transparent paper to permit the matching of shading to the underlying flat color areas.

42 Jacket (top to bottom): (A) Design sketch; (B) Separation drawing for black; (C) Separation drawing for white and yellow; (D) Separation for chartreuse

Note: The calligraphy is by Jeanyee Wong.

43 Title-page (top to bottom): (A) Design sketch; (B) Separation drawing for black; (C) Separation drawing for color

44 Pea Family. Left to right: (A) Artist's dummy; (B) Separation drawing for black; (C) Separation drawing for chartreuse. Pages 100-101



No. 44 Pea Family
(Separation drawing for black)

The secret life of the flowers. Text and illustrations by Anne Ophelia Dowden. New York, The Odyssey Press, 1964. (Published also in England, and, in translation, in France and Italy.)

The Odyssey Library series is one of modestly priced picture-books that treat vividly, with full-color illustrations and in compact form, subjects drawn from the arts, the sciences, and literature.

The secret life of the flowers is almost wholly an Anne Ophelia Dowden production. In close and active collaboration with her editors, she planned and designed the general layout, made her own dummies, produced the illustrations, and wrote the text. A full year was required to plan and produce the book. This exhibition includes a few examples of her preliminary art work in addition to the final painted compositions. The inevitable revisions of plan and format occurred: at one point it was decided to add 12 pages to the book, thus requiring expansion of several designs and the reposition of some illustrations. The artist's insistence on working from the plants involved a laborious and time-consuming search for the specimens that served as models. With two exceptions, every subject in the book was drawn from nature, and the pollination processes described were directly observed in action; an action that became lively indeed when a swarm of fig-wasps hatched in her studio.

In the following account of individual items, page numbers cited are those of the book itself.

45 Wild strawberries and pollinating bee (cover design). Water color

46 Endpaper designs. (A, front endpaper) Pollinating agents and their flowers; (B, back endpaper) Protective adaptations and inhibitors. Water colors

47 Pollinators and their environment. Pages 6, 7. Water color



No. 45 Wild Strawberry

- 48 Sketch of same, for the preliminary dummy. Pencil and crayon
- 49 Schematic study of a flower. Page 9. Water color
 (The depiction of the pollen-tube as a continuous structure is a deliberate distortion to show its connection between pollen-grain and ovule. In nature, the tube is short and the back end degenerates as the male gamete-bearing tip grows toward the ovule.)
- 50 Three proposed but discarded schematic studies of pollination (replaced by no. 49). Water color and pencil
- 51 Nature's "devices" against self-pollination. Pages 10, 11. Water color
 Plant subjects (left to right): Apricot, Sassafras, Castor-bean-plant.
- 52 Sketch of same for second dummy. Water color
- 53 Self-pollination barriers in long-tube corollas. Page 13. Water color
 Plant subjects (left to right): Scabiosa, Clerodendrum, Primrose.
- 54 (A) Violet plant, with cleistogamous flowers below (bud-like, much enlarged). Page 14. Water color
 (B) Nectaries. Left, sectional view of flower; right, face view. Water color
 Subjects, top to bottom: Violet, Jewel-Weed (*Impatiens biflora*), Ground-Ivy (*Glechoma hederacea*).
- 55 Wild rose, a bee-pollinated flower. Page 17. Water color
- 56 (A) Pollinating bee, with detail of leg showing pollen-basket, preliminary sketch in pencil and water color
 (B) Wild rose, preliminary water color
 (C) A variant water color design, discarded in favor of "B"

- 57 Bee pollination. Water colors
 (A) Flower of Sage (*Salvia sclarea*) adapted for cross-pollination by bees. Page 18. (B) Adaptation in an Iris flower for honey-bee pollination (left and lower right); same in flower of Mountain-Laurel (upper right). Page 19. (C) Adaptation for Bumblebee pollination in (left to right) Bottle Gentian (*Gentiana clausa*), Stoneroot (*Collinsonia canadensis*), Turtlehead (*Chelone glabra*). Page 20.
- 58 Milkweed flower. Page 26. Water color
 Details show highly developed floral anatomy for bee pollination.
- 59 Midge pollination in the flowers of Arum or Cuckoo-Pint (*Arum maculatum*). Page 21. Water color
 Note: in the three floral details at left, pistillate flowers (white) are at the bottom, and staminate flowers (bluish) are above.
- 60 Moth pollination. Pages 22-23. Water color
 A and B, Hawkmoth pollinating the flowers of Bouncing-Bet (*Saponaria officinalis*).
- 61 Monarch butterfly and Mourning Cloak on Butterfly-Weed (left), single flower and pollinating details (right). Pages 24-25. Water color
- 62 (A) Preliminary pencil sketches for no. 60
 (B) (left): Monarch butterfly and Butterfly-Weed (*Asclepias tuberosa*); (right): Hawkmoth and Bouncing-Bet (*Saponaria officinalis*) preliminary sketches, later abandoned; Pencil and crayon
- 63 Cymbidium orchid flower. Page 27. Water color
- 64 Orchid pollination. Pages 28, 29. Water colors
 (A) Moth-pollinated Purple Fringed Orchid
 Note: the details show the nectary at end of spur (brownish), the pollen-containing pollinium (greenish) sticking to insect's proboscis.
 (B) Bee-pollinated Coryanthes orchid flower, side view and in section

- 65 Preliminary sketches for no. 64. Third dummy, final arrangement. Pencil
- 66 Smyrna Fig, pollinated by the fig-wasp. Page 30. Water color
- 67 Variant design of no. 66, showing Smyrna Fig in section pollinated by the fig-wasp. Prepared for second dummy. Rejected. Water color
- 68 Capri Fig, showing internal arrangement of its minute flowers, and pollinating wasps. Pages 32, 33. Water color
- 69 Moth pollination of Soapweed or Yucca (*Yucca glauca*). Page 34. Water color
- 70 Flowers of Cottonwood tree (*Polypus* sp.) wind-pollinated. Pages 36, 37. Water color
- 71 Wind and water-pollination. Pages 38, 39. Water colors
(A) Cat-tail (*Typha latifolia*), wind-pollinated. (B) Fresh-water Eel-Grass (*Vallisneria spiralis*), water-pollinated
- 72 Bird pollination in Indian Paint-Brush (*Castilleja californica*). Page 40. Water color
- 73 Bird pollination in Bird-of-Paradise flower (*Strelitzia reginae*). Pages 42, 43. Water color
- 74 Sketch of no. 73, prepared for second dummy. Water color



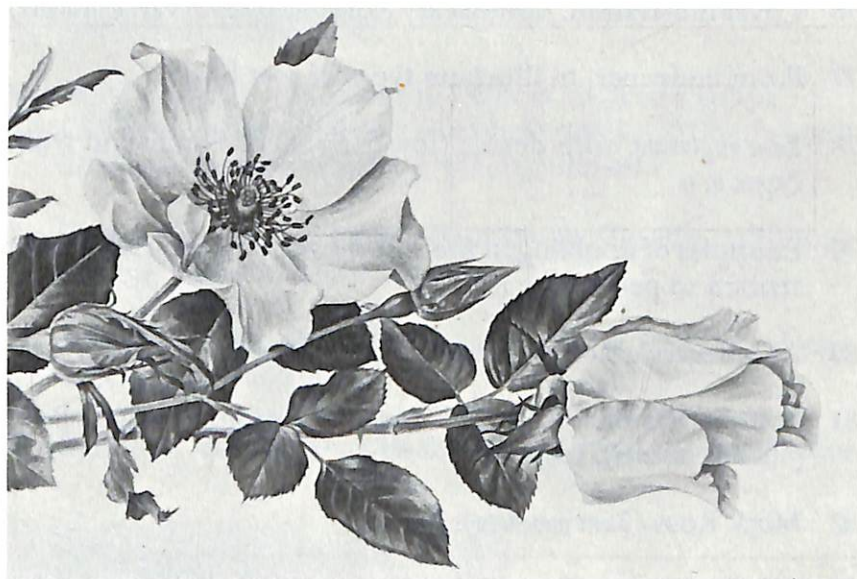
No. 60 Moth pollinating
Bouncing-Bet

Roses. Text by Anne Ophelia Dowden and Richard Thomson; illustrations by Anne Ophelia Dowden. New York, The Odyssey Press, 1965. (Published also in England, and, in translation, in France, and Italy.)

As explained above for *The secret life of the flowers*, this book is also a product of Mrs. Dowden's versatility in planning, layout design, illustration, and writing. Although a few of the illustrations are photographically reproduced from historical sources (paintings, miniatures, tapestry); the paintings of roses are from fresh studies made by her for this book. All are executed in natural size, and except for the rose on the cover (reproduced full scale), all appear in the book at 4/5 natural size. This uniformity of scale provides consistent size relationships of flowers, leaves, and fruits. All are executed in water color. Below each numbered painting is shown also the artist's preliminary pencil sketch and color proof for the page or pages concerned.

- 75 Preliminary layout of the book *Roses*. Colored pencil
- 76 Cover illustration. Apothecary Rose (*Rosa gallica* var. *officinalis*)
- 77 Front endpaper, to illustrate types of rose hips
- 78 *Rosa virginiana*, with details (lower right) of flower and fruit. Pages 8, 9
- 79 Examples of doubling in the rose flower, and transition from stamen to petal. Page 10
- 80 Apothecary's Rose (*Rosa gallica* var. *officinalis*). Pages 12, 13
- 81 Summer Damask Rose 'Celsiana' and Autumn Damask Rose (*Rosa damascena*). Pages 16, 17
- 82 Musk Rose (*Rosa moschata*). Page 20
- 83 (A) York Rose (*Rosa alba*). (B) Rosa Mundi (a vernacular name for *Rosa gallica* var. *versicolor*)
- 84 Cabbage and Moss Roses (*Rosa centifolia* and *R. centifolia* var. *muscosa*). Pages 26, 27

- 85 China Rose (*Rosa chinensis*) and Rugosa Rose (*R. rugosa*). Page 29
- 86 Austrian Brier, yellow (*Rosa foetida*), Turkestan Rose, white (*R. fedtschenkoana*), and Sweetbrier, pink (*R. eglanteria*). Pages 30, 31
- 87 Hybrid Perpetual class of roses; (A) Rose 'Mme. Pierre Oger'; (B) Rose 'Ulrich Brunner.' Pages 32, 33
- 88 Hybrid Tea class of roses. Rose 'Duquessa di Penaranda', double salmon; Rose 'Dainty Bess', single pink; and Rose 'Arlene Francis', double yellow. Pages 34, 35



No. 88 Hybrid Tea Roses

- 89 (A) Polyantha class of roses, Rose 'Margo Koster'; (B) Floribunda class roses, Rose 'Fire King.' Pages 36, 37
- 90 Examples of rose family (Rosaceae): (A) Bridal-Wreath Spiraea (*Spiraea prunifolia*); (B) Blackberry (*Rubus* sp.); Strawberry (*Fragaria chiloensis*). Pages 38, 39
- 91 Examples of rose subfamilies
 (A) the rose subfamily, Burnet (*Sanquisorba canadensis*) page 44; (B) the stone-fruit subfamily, (left) Sweet Cherry (*Prunus avium*) white flowers with fruit, (right) Almond (*Prunus amygdalus*) pink flowers with fruit. Page 41.
- 92 Examples of the pome-fruit subfamily. Pages 42-43
 (A) Apple (*Malus pumila*), (B) Quince (*Cydonia oblonga*), and (C) Glastonbury Thorn (*Crataegus monogyna* var. *biflora*).
- 93 Back endpaper, illustrating single leaves of different rose species

