

The Ortho Personalized Plant Selector

**Ortho Version 1.0
For Apple IIc and Apple IIe**

**ORTHO INFORMATION SERVICES
575 Market Street
San Francisco, California 94105**

Program designed by Ortho Information Services

Program executed by Virtual Combinatics

User's Guide written by Rex Wolf, COMPAGE

To run this program, you need:

an Apple IIc or IIe computer equipped with

- at least 64K of memory
- 80 col card

The Plant Selector supports this optional equipment:

- a printer
- an Apple Mouse

Ortho Information Services warrants the diskette on which the program is furnished to be free from defects in materials and workmanship under normal use for a period of ninety days (90) from the date of acquisition by you as evidenced by your receipt.

The book *Gardening Techniques* included in this software product is a reference work covering basic garden tasks and troubleshooting gardening problems. *Ortho's Personalized Plant Selector* software program is a computerized aid to your gardening planning and does not incorporate the material covered in *Gardening Techniques*. Use the program and the book as complementary sources of information.

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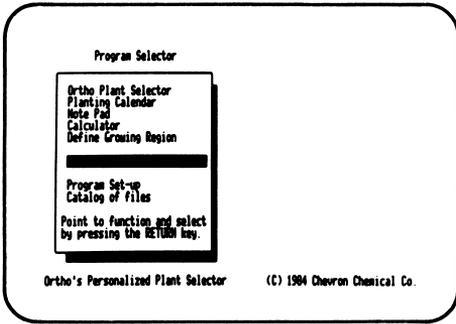
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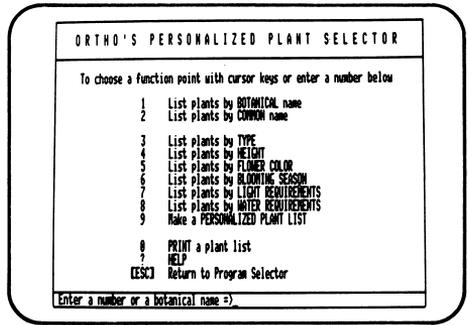
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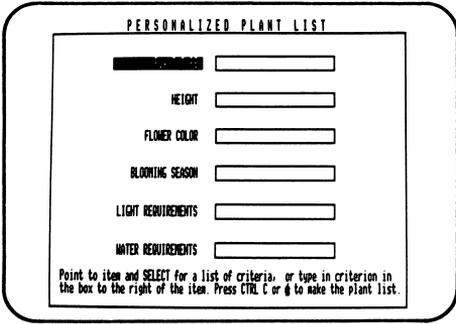
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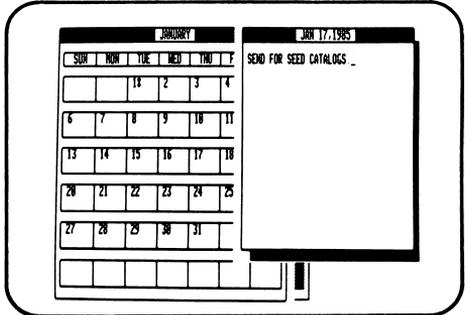
Program Selector



Main Menu



Personalized Plant List Menu



Calendar

Photographic examples taken directly from Ortho Plant Selector screens on the Apple IIc.

The Ortho Personalized Plant Selector

Ortho's Computerized Gardening program provides you with a wealth of information on over 700 different plants, from groundcovers to trees, houseplants to vines. More importantly, the Personalized Plant Selector program gives you the tools to manipulate and select from this horticultural information exactly those plants that suit your specific needs and desires. The program is easy to use and allows you to print any information that appears on the screen.

The Plant Selector

The Plant Selector is the heart of the program. With it, you can create a number of different plant lists to aid you in your garden planning. You can generate alphabetical lists of plants by their botanical names or by their common names. Or you can create more specific plant lists by plant type (warm- or cool-season annuals, bulbs, evergreen trees, and so forth), plant height, flower color, blooming season, or light or water requirements. These specialized plant lists are particularly useful when you are planning your garden—if you wanted to create a bed of plants with only white flowers, for example, or if you had a difficult spot in your garden that was fully shaded all year round. You can see a complete description of any plant on a list simply by pressing a few keys.

A Personalized Growing Region

Not all plants grow equally well in all parts of the United States; the summers may be too hot, or the winters too cold, among many other factors. The Plant Selector allows you to define your growing region by entering a postal zip code into the program. After you have done so, the Plant Selector will list only plants that thrive in the area defined by the zip code. You can redefine the growing region at any time or set it to include all plants that meet the criteria you specify.

A Personalized Plant List

You can also use the Plant Selector to create a list of plants that meet the criteria of two or more particular attributes. Suppose, for example, you wished to plant a border of white, pink, and lavender flowering plants that would bloom from spring into the fall. You could have the Plant Selector make lists of flowering plants that bloom in the color you want at the

times you want. You could also create lists of plants that would be lower at the front of the border and higher at the back. In this way, you can narrow down the choices available to you for a particular landscaping scheme and then pick the plants that you like best.

The Gardening Calendar and Note Pad

A garden diary will become a valuable reference in your garden planning over the years. You can record planting dates, yields of vegetables, dates of the last and first frosts, varieties of bulbs planted, and so forth. In later years you can look back to discover which vegetable varieties performed well, which plants were killed by an unexpected late frost, or whether you ordered that brilliant orange day lily you spotted in a catalog.

The Calendar and Note Pad functions of Ortho's Personalized Plant Selector program can help you easily keep track of all your garden records, as well as post reminders to yourself to perform those garden chores that must be done regularly. Each year's data can be contained on a single disk (or side of a disk), so that you have quick and easy access to the information you have compiled.

The Calculator

The program also includes a calculator function that allows you to perform arithmetic calculations necessary to your garden planning or even to balance your checkbook. You'll find it a handy tool when you have to figure such things as the number of cubic feet of mulch needed for a layer 6 inches thick on a 20 x 30 foot rose bed.

How This Guide Is Organized

The next chapter, "Mechanics of the Program", covers the basics of using the program: starting the program, control keys you use on the keyboard, on-screen devices that show you where you are in the program, using two disk drives, and printing information shown on the screen. Take a few minutes to go through the chapter to familiarize yourself with the program; you can come back to it later for more detailed study if you get stuck in parts of the program.

The third and fourth chapters explore in detail how to use the Personalized Plant Selector and how to define your growing region. By reading these chapters and experimenting with the program, you should become quite adept at creating plant lists.

The fifth chapter tells you all you need to know to create a Personalized Plant List according to the criteria you choose.

The sixth chapter takes you step-by-step through the operations of using the Calendar, Note Pad, and Calculator.

An appendix gives you information on tailoring the program to give commands to your printer, and adjusting the cursor and mouse.

Mechanics of the Program

This chapter will introduce you to the nuts and bolts of using the Ortho Personalized Plant Selector. You'll be introduced to the ways of moving around the program and learn to recognize the on-screen indicators that mark your place in the program. In addition to the disk that comes with Ortho's Computerized Gardening package, you'll need a blank disk formatted with ProDOS® to record data entered in the Calendar and Note Pad parts of the program.

Your Ortho Computerized Gardening package comes with a 5 1/4-inch floppy disk that contains the program and the data necessary to run the Personalized Plant Selector. One side of the disk is labeled SIDE 1 PROGRAM, and the other side is labeled SIDE 2 DATA.

Starting the Program

To start the program, follow the steps listed below.

1. Remove the disk from its protective envelope.
2. With SIDE 1 PROGRAM up, hold the disk by the label and insert it into your computer's disk drive 1. If your computer has a built-in disk drive, that is drive 1. If your computer has only external disk drives, and you're unsure which is drive 1, try each one in turn to see which works.
3. Close the disk drive door.
4. Turn the computer and video monitor on.

If your computer was already on, you can either turn it off, wait a few seconds, and then turn it on again, or follow the instructions in your computer's user's manual for starting a program with the computer on.

The disk drive will whirl and click for a few seconds, and then the Apple copyright notice will appear on your screen, quickly followed by the Program Selector, the starting point for the Personalized Plant Selector.

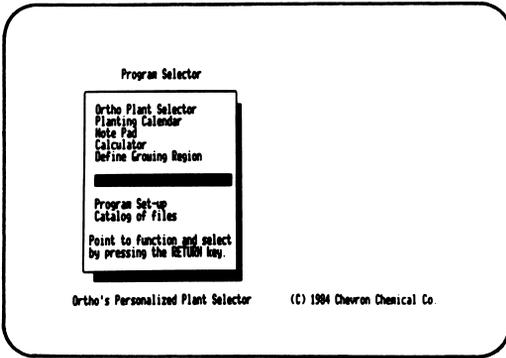
Using the Personalized Plant Selector Disk

The side of the program disk labeled SIDE 2 DATA contains information on the more than 700 plants that make the Plant Selector such a valuable adjunct to your garden planning. At various times while you are using the program, prompts will appear on your screen asking you to do something with the disk. When the prompt "Please insert the ORTHO SOFTWARE disk in the drive..." appears, open the disk drive door, remove the disk, flip it over so that the SIDE 1 PROGRAM is up, insert the disk back into the drive, close the door, and press any key. If you are prompted to "Please insert PLANT DATA DISK in drive...", open the disk drive door, remove

the disk, flip it over so that SIDE 2 DATA is facing up, reinsert the disk, close the drive door, and press any key.

If you have a second disk drive connected to your Apple, you can avoid the bother of flipping and reinserting the disk at every prompt. Using the

System Utilities disk that came with your computer, copy the DATA side of your disk on a blank disk formatted with PRO-DOS. After you have made the copy, place the original disk, PROGRAM side up, back in drive 1 and place the copy of the DATA side of the disk in your second disk drive. Your computer



will now automatically search for the data it needs off the copy of the disk in the second disk drive.

The PROGRAM side of the disk cannot be copied. In the event that the disk is damaged, Ortho will supply you with a replacement disk. Send the damaged disk with a note explaining the problem to Ortho Information Services, 575 Market Street, San Francisco, CA 94105. You *must* return the original disk in order to obtain a replacement.

Using the Menu

The Personalized Plant Selector is organized around a system of *menus*—lists of choices that you make to tell the computer what information or procedure you want. Depending on where you are in the program, a choice on one menu will lead either directly to the information you want or to another menu offering a different set of choices that will pinpoint the information you want more specifically.

There are two different ways to select from a menu: (1) positioning the pointer over your selection and pressing RETURN, or (2) typing in the selection number or plant name or the attribute at the flashing cursor.

THE POINTER The *pointer* is a bright rectangle that appears over the items in a menu or plant list to highlight your selection, or make it stand out. If the pointer is not visible when you first see a menu, you can make it appear by pressing the up arrow (↑) or down arrow (↓) directional keys at the lower right side of your keyboard. You also use these keys to position the pointer over the selection you want. Once the pointer is positioned over your choice, you press the RETURN key to activate your choice.

If you have a mouse connected to your Apple, moving the mouse will

move the pointer on the screen. When the pointer is over your selection, click the mouse button firmly once to activate your choice.

THE CURSOR If the pointer is not on the screen, a small blinking line appears at the bottom of the screen. This is the *cursor*, and it indicates that your computer is ready to receive typed instructions from you. At the bottom of the Plant Selector menu, for instance, type in either the number of the menu function you want or the botanical name of the plant on which you want information. After typing your selection, press RETURN to activate your choice. You can also use the cursor instead of the pointer when you want information about a specific plant from a plant list or when you are defining attributes on the Personalized Plant List menu.

The pointer and the cursor will not appear on the screen at the same time. To make the cursor appear, use the arrow keys to move the pointer off the top or bottom of the list or menu. Moving the cursor on screen will cause the pointer to disappear.

THE ESCAPE (ESC) KEY The ESCAPE key, in the upper left corner of your keyboard, will take you back to the previous menu or list.

A few words of caution about using the escape key: Any selections you have made on a menu or entries made on the calculator will be wiped out if you return to the previous menu or function. Any entries you have made in the Calendar or Note Pad will be wiped out unless you have used the SAVE procedure. This can be aggravating if you have spent a good deal of time making selections or creating entries, so be sure you really want to escape before pressing that key!

HELP MENU One selection on the Plant Selector menu, HELP, gives you a quick and easy reference to the procedures and keys you use to make choices from the menu. HELP also provides definitions of the criteria used to group plant attributes, such as blooming season, flower color, and water or light requirements.

To view the list of choices on the Help Selection menu, type ? and then RETURN, or position the pointer over HELP and press RETURN. Once the Help Selection menu appears on the screen, you can choose further by moving the pointer over the desired subject and pressing RETURN. Pressing RETURN or the ESC key will return you to the Help Selection menu, where you can make another selection, or press ESC again to return to the Plant Selector menu.

Printing

The Ortho Personalized Plant Selector works with any printer that is connected to your Apple computer. The program is preset for Image-writer and Scribe serial printers. If you have a parallel printer, you may

need to change the line feed and protocol settings in the program, which determine how the printer responds to directions from the computer. See page 31 for instructions for changing these settings.

PRINTING A PLANT LIST From the Plant Selector menu, you can print a list of the botanical names of all the plants included on the data side of the disk, or smaller lists of names beginning with a certain letter. If you have defined your growing region by entering your zip code, only those plants suitable for growing in your area will be listed.

When you select function 0, PRINT a plant list, the message "Request: Please adjust your printer" appears on your screen. This is only a reminder that you *may* have to change the printer settings; it does not mean that your printer settings are necessarily wrong. It's also a handy reminder to make sure your printer is turned on. You press any key to proceed.

If you have used the Plant Selector to prepare specialized plant lists by a specific attribute, such as flower color or blooming season, or made a Personalized Plant List combining a number of attributes, you can print the list that appears on your screen simply by holding down the CONTROL key and pressing the P (for print) key.

PRINTING NOTE PAD OR CALENDAR ENTRIES When you are in the Note Pad part of the program, you can also print Note Pad or Calendar entries. This is a particularly convenient way to make up a shopping list as you do your garden planning.

You begin by choosing the Note Pad program from the Program Selector. After you insert the Note Pad/Calendar file disk for the current year into drive 1, the Note Pad/Calendar menu will appear on the screen, with the names of all the Note Pad entries listed. This time, the computer does not remind you to adjust your printer, so be sure it is turned on.

To print a Note Pad entry, you move the pointer along the row of selections at the bottom of the screen until it is over PRINT NOTE. When you press RETURN, the pointer will move to the first name of the Note Pad entries. You then use the directional arrows to move the pointer over the name of the entry you want to print. When you press RETURN, the Note Pad entry you selected is printed.

To print a Calendar entry, you move the pointer along the row of selections at the bottom of the screen until it is over CALENDAR. When you press RETURN, the pointer moves back to the first function, DISPLAY NOTE, and a directory of the calendar entries for the year appears in the boxed area of the screen. Move the pointer again to PRINT NOTE. When you press RETURN, the pointer moves to the first name in the directory of Calendar entries displayed. When you position the pointer over the Calendar entry you want to print and press RETURN, the calendar entry you selected is printed.

Defining Your Growing Region

What Is a Growing Region?

The ability of plants to grow in discrete regions of the United States depends on a combination of many factors. The average minimum winter temperature, which determines the hardiness zones so often referred to in gardening books and catalogs, is only one important factor. Summertime high temperatures, humidity, prevailing winds, indigenous soils, average dates for spring thaw or the onset of winter—all these factors combine to determine whether a particular plant will thrive in a certain area.

Ortho's nationwide panel of experts—gardeners, nursery personnel, horticulturists, and landscape architects—have pooled their knowledge and experience in all areas of the country to determine if a plant will thrive in a specific area. Thus you can be reasonably sure that any plant listed by the Plant Selector for your growing region will grow well in your garden, given the proper care.

There exists in many gardens or geographical areas, however, small areas whose climatic conditions do not match those of surrounding larger areas. These *microclimates* may be caused, for instance, by a particularly advantageous warm southern exposure, an overhead canopy of trees, or a tall hedge that diffuses prevailing winds. The Plant Selector cannot take into account these subtle and small-scale changes in climate.

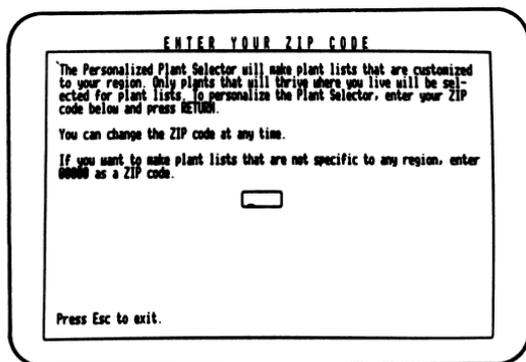
Entering Your Zip Code

Your five-digit zip code determines the growing region in which you live. If you enter your zip code in the program, the master list of plants will automatically be marked with those plants that are suitable for growing in your area. All plant lists you subsequently compile will automatically include only those plants judged suitable for your area, unless you change the growing region.

To define your growing region for the Plant Selector, follow the steps listed below.

1. On the Program Selector menu (the first menu that appears in the program), move the pointer to Define Growing Region.
2. Press RETURN.
3. The screen will go blank for a few moments as the disk drive clicks and whirs, and then a screen titled ENTER YOUR ZIP CODE appears. The cursor will blink in a small rectangle near the bottom of the screen to

show you where to type in your five-digit zip code. Be sure you type in all five digits of the zip code. If you make a mistake entering your zip code,



use the left arrow (←) key to move the cursor back to the incorrect digit, and type the correct digit directly over it.

4. Press RETURN.

5. The disk drive will whirl as the computer searches for the zip code. This process can take anywhere from a few moments to a minute and a half. Then a message appears

asking you to "Please insert PLANT DATA DISK in disk drive."

6. Open the door of the disk drive, take out the disk, and turn it over. With SIDE 2 DATA facing up, reinsert the disk, close the disk drive door, and press any key. If you are using two disk drives, with a copy of the DATA side of the program disk in drive 2 (see page 8), when you see the message to insert the data disk ignore it and just press any key. Your data disk will be marked automatically.

7. A message to "Please wait..." appears on the screen as the disk drive whirs. The process of marking all the plants on the data disk for those suitable to your area takes a few minutes. Please be patient.

8. When the process is finished, the message "Region Defined" appears on the screen. Press any key to return to the Program Selector menu.

Changing the Growing Region

From now on, until you change the defined growing region, the Plant Selector will list only those plants that will do well in the zip code area entered. You may change the defined growing region at any time by entering a different zip code by the same procedure described above. If you do not want a specific growing region defined and want your plant lists to be drawn from the complete master plant list, just enter five zeros in place of the zip code on the ENTER YOUR ZIP CODE screen.

After you have defined a growing region and the plant data disk has been marked with plants suitable for that particular area, there will be no on-screen record of the growing region that has most recently been defined. If you plan to make up plant lists for a number of different growing regions, you may want to keep a record of the zip code that defined your last growing region, so you won't have to mark the data disk anew each time you use the program. A handy place to keep a record of the latest region defined is on the Note Pad of this program (see page 27).

The Personalized Plant Selector

The Plant Selector is the heart of Ortho's Computerized Gardening package. It allows you extreme versatility and a wide range of plant lists that can be an invaluable aid in your year-round garden planning.

The Plant Selector Menu

The first menu of the Ortho Personalized Plant Selector program, the Program Selector, always appears with the pointer over the first selection, Ortho Plant Selector. Simply press RETURN to call the Plant Selector.

The screen will go blank while the disk drive whirs. If you have one disk drive, the message "Please insert PLANT DATA DISK in drive..." appears. Open the disk drive door and remove the disk. Flip it over so the side labeled SIDE 2 DATA is facing up, reinsert the disk in the drive, close the disk drive door, and press any key. (If you have a second disk drive, see page 8 for an explanation of how you can use it without flipping the program disk.)

If you have not defined a growing region by entering a zip code or have entered 00000 as the growing region, a second message will appear on the screen reminding you that "Your growing region has not been defined." When you press any key, your screen shows you the main menu of Ortho's Personalized Plant Selector.

If you do wish to define your growing region before proceeding further, press the ESC key to return to the Program Selector and follow the instructions outlined in the last chapter.

```
ORTHOS PERSONALIZED PLANT SELECTOR

To choose a function point with cursor keys or enter a number below

1 List plants by BOTANICAL name
2 List plants by COMMON name

3 List plants by TYPE
4 List plants by HEIGHT
5 List plants by FLOWER COLOR
6 List plants by BLOOMING SEASON
7 List plants by LIGHT REQUIREMENTS
8 List plants by WATER REQUIREMENTS
9 Make a PERSONALIZED PLANT LIST

0 PRINT a plant list
? HELP
[ESC] Return to Program Selector

Enter a number or a botanical name =
```

Using the Menu

The Plant Selector menu provides you with a wealth of choices to create specialized plant lists or to summon to your screen detailed descriptions of a specific plant and its cultural requirements.

One Way to Get a Plant Description

Start at the bottom of the screen, with the line that reads "Enter a number or a botanical name=>" followed by a blinking cursor. Take a moment to read the menu to see the choices available. Typing the number of one of the ten choices and then pressing RETURN will activate that choice. To see what happens, try typing in a botanical name.

If you have defined a growing region, this and subsequent examples given in the text of this guide may not work because the plants chosen as examples are not suitable for the growing region you have defined. To practice using the Personalized Plant Selector, set the growing region to 00000 and you will see on screen the results described in the text.

1. Type in *Acer palmatum*, the botanical name for Japanese maple. Capitalization is not important, but the spelling and the spacing between the words are.

2. After typing in the name, press RETURN. The disk drive will whirl, and in a few moments a complete description of the plant will appear on your screen, giving cultural requirements, comments on its use in the garden, and any tips on keeping it growing heartily.

3. Press RETURN to go back to the Plant Selector main menu.

If the Computer Can't Find the Plant

If the botanical name you typed in is of a plant that is not suitable for the defined growing region, the name will disappear from the bottom line of the menu and the flashing cursor will return to its original position to the right of the arrow.

If you entered a botanical name of a plant that is not included on the master plant list, or if you misspell the name, the message "Error: Unable to locate plant or item name" will appear on the screen. Try the procedure below to search for the correct spelling of the name. If you still can't find the name of the plant you want, it's likely that it isn't included on the master plant list.

If You're Not Sure of a Name

Botanical names can be unfamiliar and confusing. The Personalized Plant Selector allows you to guess about the spelling of a name, and then provides you with a list of plant names that are close to your guess.

You use this feature by typing, at the blinking cursor, the letters that you know in the botanical name. You then use an asterisk (*) to indicate that there are letters missing either before or after the typed letters. If you place an asterisk *after* a portion of a name, the Plant Selector chooses all the plants that *begin* with those letters. For example, type ACE* and press RETURN. After searching the plant lists, the Plant Selector will respond with the list below. (The search can take quite a while, so please be patient.)

ACER CAMPESTRE
ACER GINNALA
ACER PALMATUM
ACER PALMATUM DISSECTUM
ACER PLATANOIDES
ACER RUBRUM
ACER SACCHARINUM
ACER SACCHARUM

If you place an asterisk *before* a portion of a name, the Plant Selector will make a list of all the plant names that contain those letters anywhere in the name. For example, type *ACE and press RETURN. The Plant Selector will display this list:

ACER CAMPESTRE
ACER GINNALA
ACER PALMATUM
ACER PALMATUM DISSECTUM
ACER PLATANOIDES
ACER RUBRUM
ACER SACCHARINUM
ACER SACCHARUM
BRASSICA OLERACEA ACEPHALA
CIMICIFUGA RACEMOSA
ECHINACEA PURPUREA
FESTUCA ARUNDINACEA
PLATANUS X ACERIFOLIA

If you know the name of the plant but are not sure of the spelling, you can use an asterisk in place of the letters you're unsure of. For instance, type ACER P* and press RETURN. The Plant Selector will respond with:

ACER PALMATUM
ACER PALMATUM DISSECTUM
ACER PLATANOIDES

Type ACER P*M and press RETURN. The Plant Selector will display:

ACER PALMATUM
ACER PALMATUM DISSECTUM

Note that the Plant Selector will display only names that are marked for your defined growing region.

The Name Lists

The Plant Selector menu offers a couple more ways to get information on plants, again by botanical names, but also by perhaps more familiar common names. This section will give you a chance to practice compiling plant lists.

The first two functions listed on the Plant Selector menu are:

- 1 List plants by BOTANICAL name.
- 2 List plants by COMMON name.

You select these two functions, like the rest of the functions listed on the menu, in one of two ways. You can type the function number at the blinking cursor on the bottom line and press RETURN. Or you can move the pointer into view, position it over the desired function, and press RETURN.

When you select either of the first two functions, a pop-up menu appears, inquiring "Beginning with which letter?" The menu offers the entire list and portions of the list beginning with each letter of the alphabet. Using the directional arrow keys, move the pointer to the selection you want, and press RETURN. The disk drive whirs as the list is compiled, and then an alphabetical list of plants appears on your screen. If there are no plants beginning with the letter you selected on the list, the pointer returns to the first selection. Try this and see how it works.

If you want a description of the plant and its cultural requirements, you can use the four directional arrow keys to move the pointer to the plant name you wish to know more about. When you press RETURN, the plant description appears on the screen.

Alternatively, you may type a plant name in the box at the bottom of the screen and press RETURN. If you want to use this method of obtaining a plant description, the pointer must not be visible on the screen and the cursor must be blinking in the box at the bottom of the screen. You can enter any valid plant name; you aren't limited to those displayed on the screen at the time.

From the plant description, press the ESC key to return to the listing, or RETURN to go back to the Plant Selector menu.

If your screen is full of a list of plants, chances are the list continues beyond what you see. To see the continuation of the list, move the pointer off the screen so the blinking cursor is in the box at the bottom, and press RETURN. The continuation of the list will appear on the screen. For a very long list, you may have to do this several times.

Printing Plant Lists or Plant Descriptions

To print a plant list of botanical names, you choose function 0 from the Plant Selector menu. A pop-up menu asks you to choose whether you want to print the entire list or a portion of it grouped according to the first

letter of each name. Make a selection and press RETURN. A reminder will flash on your screen to "Please adjust your printer." This message is only to make sure that, if necessary, you have established the proper settings for your printer (see page 31). The printer will then print the list of botanical names you have selected.

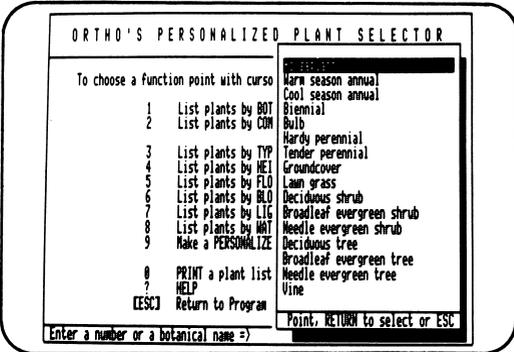
To print a list of common names, or a plant description that is displayed on the screen, hold down the CONTROL key and press the P key. Your printer will print the contents of the screen displayed. Be sure your printer is on before giving this command. *Note that you cannot print a list of common names by choosing from the Plant Selector menu. Only CONTROL-P will work.*

The Attribute Lists

The next six functions on the Plant Selector menu list plants according to one particular attribute. The attributes covered are:

- Plant type
- Plant height
- Flower color
- Blooming season
- Light requirements
- Water requirements

When you choose any of these six functions from the Plant Selector menu, a pop-up menu appears and you can choose a criterion for a specific plant list. For example, if you select function 3, Plant Type, the pop-up menu offers you 16 choices of plant type, ranging from houseplants to vines. Using the arrow directional keys, you can move the pointer up and down the pop-up menu. Position the pointer over the plant type you're interested in, press RETURN, and the Plant Selector compiles a list of plants of that type and displays it on your screen.



As with the name lists, you can obtain a complete description of a plant by moving the pointer to its name and pressing RETURN, or by typing its name in the box at the bottom of the screen. You can obtain a printout of any screen by pressing P while holding down the CONTROL key.

Following are detailed explanations and definitions of the six attribute lists. For quick reference while using the program, use the HELP function on the Plant Selector menu.

The Plant Type List

This attribute list groups plants according to their botanical classification (such as **Bulbs**) or their use (such as **Houseplants**). For simplicity, we have listed most plants in only one of these groups. In reality, however, many plants can be used in several different ways. Some trees, for example, can be trained as shrubs, or large shrubs pruned to be small trees. Most houseplants can be planted outside in southern Florida. Many hardy perennials and most low shrubs make excellent groundcovers. Use your imagination to explore various possibilities.

Houseplants are plants that are normally grown in a house or greenhouse. But many of these can be grown outdoors in frost-free areas. Conversely, many plants that tolerate some frost and are grown in many areas (classed as perennials or shrubs by the Plant Selector) are often raised indoors.

Warm season annuals are annual flowers that thrive in hot weather. They are planted in the spring to bloom in summer.

Cool season annuals thrive in cool weather. They are planted in the fall in mild climates to bloom in late winter or early spring. In cold climates they are usually planted in early spring.

Biennials bloom the second year after they are planted, then die. They are often raised in an out-of-the-way location and transplanted to their display location when they are dormant, in early spring of their second year.

Bulbs include plants that have an underground food storage organ (a bulb, corm, or tuber) and die to the ground each year. Bulb-type plants that don't die to the ground (such as *Agapanthus*) are classified as perennials.

Hardy perennials are perennial flowers that survive the winter in most of the United States.

Tender perennials are flowers that are perennial in mild climates, but won't survive a cold winter. Many tender perennials (such as petunias) are grown as annuals.

Groundcovers are plants that grow in a solid, low mass. Plants that are most commonly thought of as groundcovers are on this list, but many other plants can be used as groundcovers if planted closely enough. Look at the shrub, perennial, and vine lists for more ideas.

Lawn grasses can be selected for locations that are wet or dry, or sunny or lightly shaded.

Deciduous shrubs are shrubs that lose their leaves in the winter. Some deciduous shrubs are evergreen or partly evergreen in mild climates.

Broadleaf evergreen shrubs keep their leaves all year, even in cold climates.

Needle evergreen shrubs have needle-like leaves, and most of them bear cones. Many of these shrubs are used for ground covers or for planting in a solid mass.

Deciduous trees drop their leaves in the winter. These make the most satisfactory shade trees because they let in the light during the dark months, but block it during the hot months.

Broadleaf evergreen trees keep their leaves all year. Only a few are hardy in the North.

Needle evergreen trees have needle-like leaves. Most of them bear cones. They range in size from shrub-like dwarfs to large trees.

Vines are climbers and can be trained to cover walls or fences. Many vines are also used as groundcovers. They are especially useful for covering steep banks.

The Height List

On the data side of the disk, each plant is assigned a range of heights to which it will grow. Sometimes that range represents different varieties of the plant, some of which are smaller and some larger. Other times, the range represents differences in maximum height caused by environmental conditions. When you specify a height, all plants that reach that height are listed. For instance, a list of plants that grow to 40 feet high will include blackwood acacia, which grows from 30 to 40 feet high, and live oak, which grows from 40 to 60 feet high.

When specifying heights, remember that tall trees will take decades or generations to reach their maximum heights, and that most of the time you enjoy them they will be much smaller than their maximum. Use the listings as rough guides to plant height, not as exact measures.

The Flower Color List

Most of the flowers included in the plant data fall into one or more of the categories of flower color presented in this list. A few, however, don't classify easily. Some are green, some metallic bronze, some brown. We have included most flowers that don't classify easily in the nearest describable color, then noted the true color in the plant description.

The Blooming Season List

This list gives you a range of blooming times when you select a specific time. If you select summer as a criterion, you will be presented with a list of all the plants that bloom in summer, including those that bloom all year and those that bloom from early summer through late summer.

The Light Requirements List

This list and the next describe a plant's adaptation, rather than its appearance. Most plants tolerate a fairly wide range of light conditions, but few will tolerate the entire range of light that can be found in most gardens. Choose the term from this list that most nearly describes the range of light in the area where you wish to plant.

Full sun means at least eight hours of sunlight during the summer.

Half-day sun means from four to six hours of bright sunlight. Plants in this group tolerate direct sun, but don't need a full day of it.

Light shade is broken shade, such as the shade in a lath house or under a birch tree. It can also mean unbroken shade with no direct sunlight, but with bright reflected light. Light is usually reflected from a light-colored surface, such as a wall, or from the sky. If a plant can "see" a large area of sky from a location, even if it receives no broken sunlight, the shade can be considered light. Plants in this group will not tolerate hot sun. They might do well if they receive direct sun in the morning when the air is cool, but they should not receive direct sun during the hot part of the day.

Deep shade is unbroken shade into which only a moderate amount of light is reflected. Only specially adapted plants will thrive in deep shade, and few of these will bloom well there.

The Water Requirements List

You will find this list most useful if you live in an arid region and have different watering requirements in your garden. Water requirements listings are also useful if you have a steep hillside or an area of shallow or sandy soil that is frequently dry, or if you wish to plant in a low, boggy spot.

Most of the plants in the Plant Selector are adapted to **medium** watering conditions. These plants will thrive in most gardens.

Plants that are adapted to **dry** locations are able to survive long dry spells, but usually do better with irrigation every couple of weeks during times of drought. Most of these plants will thrive under medium watering conditions if the soil drains quickly, but are susceptible to root or crown rot if the soil doesn't dry completely between waterings.

Plants that are adapted to **wet** locations usually tolerate poor drainage, but often do not tolerate drought. Drying out harms them; they will wilt easily and not recover quickly. Choose this criterion when you are selecting plants for a low or wet site.

The only function on the Plant Selector menu not covered yet is number 9, Make a Personalized Plant List. The next chapter explains in detail how to use this function to generate a plant list exactly suited to your needs and desires.

Generating a Personalized Plant List

Function 9 on the Plant Selector menu, Make a Personalized Plant List, allows you to assign a specific criterion to each plant attributes and then make a list of plants that match the criteria you have selected.

As with the other plant lists compiled by the Plant Selector, if you have defined a growing region by entering a zip code (see page 11), the Personalized Plant List will include only those plants that will thrive in your area. If you wish to be the judge of what will grow well in your garden, define the growing region with five zeros instead of a zip code. Your Personalized Plant List will be compiled from all the plants contained on the DATA side of the program disk.

A Demonstration

Create a Personalized Plant List by following the steps listed below. Once you've got the hang of it, you can experiment by choosing different criteria for each of the plant attributes to see what you come up with.

1. Choose function 9 from the Plant Selector menu either by moving the pointer to the function on the menu and pressing RETURN, or by typing 9 at the blinking cursor at the bottom of the screen and pressing RETURN.

2. The Personalized Plant List menu appears on your screen. You'll recognize the various plant attributes that are functions 3 through 8 on the Plant Selector menu. The pointer will be positioned at the first attribute, PLANT TYPE. Press RETURN.

3. A pop-up menu listing the various plant types appears, identical to the one in function 3 on the Plant Selector Menu.

PERSONALIZED PLANT LIST

PLANT TYPE	<input type="text" value="Hardy perennial"/>
HEIGHT	<input type="text" value="2 Feet"/>
FLOWER COLOR	<input type="text" value="Yellow"/>
BLOOMING SEASON	<input type="text" value="Early summer"/>
LIGHT REQUIREMENTS	<input type="text"/>
WATER REQUIREMENTS	<input type="text"/>

Point to item and SELECT for a list of criteria, or type in criterion in the box to the right of the item. Press CTRL C or q to make the plant list.

4. Press RETURN. The Plant Type menu disappears, and Hardy Perennial now appears in the box next to PLANT TYPE.

5. Press RETURN again to have the computer accept this criterion. The pointer moves to the next attribute, HEIGHT.

6. Press RETURN again, and a pop-up menu displays a list of heights.

7. Choose 2 feet by moving the pointer, and press RETURN.

8. Press RETURN again for the computer to accept 2 feet. The pointer moves to FLOWER COLOR.

9. Press RETURN for a list of flower colors, choose Yellow, and press RETURN to have it accepted.

10. Then choose Early Summer for BLOOMING SEASON. If you leave the LIGHT REQUIREMENTS and WATER REQUIREMENTS boxes blank, they won't be considered in the plant selection.

11. Press the solid-apple key (⌘) to the right of the spacebar, or press the CONTROL key and the C key at the same time, and your plant list appears on the screen. If the pointer is at the bottom of the list of criteria, pressing RETURN also displays the list.

Congratulations! You have just created a Personalized Plant List of hardy perennials that grow at least 2 feet tall, and have yellow flowers during the early summer.

You can use your Personalized Plant List in the same way as other plant lists compiled by the program. To obtain a complete description of any plant listed, for instance, move the pointer to the name and press RETURN, or type the name at the blinking cursor and press RETURN. If the list fills the screen and you want to see a continuation, move the pointer off the screen so the blinking cursor appears at the bottom, and then press RETURN. To return to the Plant Selector menu, press ESC.

There's another method by which you can specify a criterion for a plant attribute without using the pop-up menus. With the pointer on a particular plant attribute, press the right arrow key. The pointer disappears, and the blinking cursor appears in the box beside the attribute. You can then type in the criterion, and press the down arrow key to move the cursor to the next box.

Any criterion typed in the box next to a plant attribute must be exactly the same as one of the criteria that appear on the pop-up menu. Capitalization can vary, but the spelling and specific terminology must be the same as on the pop-up menu. If not, the Plant Selector will ignore the incorrect criterion and compile a plant list that does not take into account any criterion for that particular attribute. If you've forgotten the available criteria for a given attribute, use the left arrow key to return to the attribute, then press RETURN to see the pop-up menu.

For example, if you enter Annual as the criterion for PLANT TYPE, you'll be surprised and outraged to find bulbs and perennials included on any list that includes this criterion. Yes, computers *are* dumb, and you

must respect their limitation that instructions to them must be in a form they can recognize. Using the criterion Warm season annual or Cool season annual will give you much better results.

Expanding Your Range of Choices

When you're using the Personalized Plant List menu, it isn't necessary to enter a criterion for each of the plant attributes. In fact, the more criteria you specify, the shorter your list is likely to be. If you leave the box next to an attribute blank, the plants selected for your list will not be limited to one particular criterion for that attribute.

For example, if you enter Dry as a criterion for WATER REQUIREMENTS, plants that have medium or wet requirements will not be listed. If you leave the WATER REQUIREMENTS box blank, plants will be chosen from all three categories. Use the down arrow key to skip past the attributes that are not important for you to specify.

If you are too restrictive with the criteria you choose, instead of a plant list the message "Error: Unable to locate plant or item name" will flash on your screen. This is not an error in the program, nor does it mean that you pressed a wrong key. It simply indicates that the criteria you have chosen are too restrictive for the Plant Selector to find a plant that meets your requirements.

Be careful also not to specify contradictory criteria for a plant list. You will get the error message if, for instance, you ask for a list of groundcovers that are 10 feet high.

Printing

As with the other parts of Ortho's Personalized Plant Selector, you can make a print-out of anything on the screen. Make sure your printer is on, then hold down the CONTROL key and press P. If you're going to make a permanent record of your Personalized Plant Lists, it's a particularly good idea to make print-outs of the relevant filled-in Personalized Plant List menus also, so you'll remember what criteria you specified to generate the plant lists.

Using the Calendar, Note Pad, and Calculator

In addition to the Plant Selector, Ortho's Computerized Gardening package offers the accessories of a computerized calendar, note pad, and calculator to help make your garden planning easier, faster, and more efficient.

Once you start using the Calendar, you'll wonder how you ever got along without it. It's a great place to keep a garden diary to record planting dates, sprouting dates, or blooming times. Use it also to remind yourself to fertilize, or spray, or plant. You can even use it to remind yourself of Aunt Maude's birthday!

You can use the Note Pad to jot down notes as you think of them, make up a shopping list for a trip to the garden center or nursery, or record which varieties of tulips you planted in the spring and where. You can call up Calendar entries from the Note Pad function and make instant comparisons of records throughout the whole year.

The Calculator quickly computes any addition, subtraction, multiplication, or division calculations you might find necessary in your garden planning. You can operate it from the keyboard or with a mouse. If you want to compute the number of square feet in an area to determine the amount of fertilizer you'll need, for instance, the calculator will be right at your fingertips.

Preparing a Calendar/Note Pad Data Disk

To use the Calendar and the Note Pad, you'll need a disk on which to record your entries. Make a separate data disk (or side of a disk) for each year to keep your files organized and not too large and unwieldy.

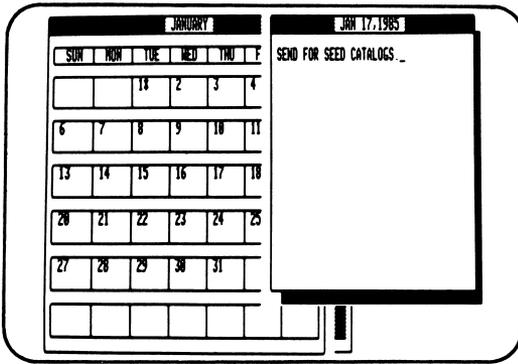
To create a data disk, you'll need a blank disk formatted in ProDOS. Use the Apple System Utilities program that came with your computer to format the disk.

Whenever you enter the Calendar or Note Pad parts of the program, a message on the screen asks you to insert the Calendar/Note Pad file or disk into disk drive 1. If you move to the Plant Selector, the program disk, side 1 up, must be replaced in disk drive 1.

How to Use the Calendar

Begin by having the program disk, side 1 up, in drive 1. To choose the Calendar part of the program, start from the Program Selector, the first menu of the program, and follow the steps listed below.

1. Move the pointer to the second item, Planting Calendar.
2. Press RETURN. Three pictographs of calendars will be shown on the screen with the pointer on the first one, 1985. Choose the year you want by moving the pointer with the directional arrow keys. Using the up arrow key, you can advance the year on the topmost calendar to any year up to 2001. The down arrow key works in reverse.
3. When the pointer is on the year you want, press RETURN. The calendar for the year you specified moves to the front pictograph. A message on the screen asks you to insert the Calendar/Note Pad disk for the year you've specified in disk drive 1 and gives you three options—READY, CANCEL, and CREATE ONE.
4. Replace the program disk with the newly formatted Calendar/Note Pad disk in disk drive 1. The insert message reappears on the screen, with the pointer on READY.



5. Move the pointer to your choice with the directional arrow keys. If you don't wish to proceed with the Calendar part of the program, choose CANCEL. The program will name the disk with the year that you have chosen.

If you are using a disk that has already been named for the year you have specified, simply choose READY. *Be careful that the data disk you insert in disk drive 1 is for the year you have specified.*

6. The insert message reappears once more, again with the pointer on READY. This time, simply press RETURN.

7. After a moment, the pointer will move to the JAN (January) box of the calendar. Using the arrow keys, move the pointer to the month in which you want to make an entry. Press RETURN.

8. The full calendar of that month now appears on your screen with the pointer on the first day of the month. Use the arrow keys to move the pointer to the day on which you want to make an entry. Press RETURN.

9. A blank box labeled with the date you have chosen appears on the right side of your screen. The blinking cursor in the upper left corner of

the box is the signal that you can begin typing your Calendar entry. For an example, try typing *Send for seed catalogs*.

10. When you have finished typing your Calendar entry, press the  key to the right of the spacebar. A screen message asks you if you want to name your entry.

Naming your entries identifies them so that you can find them more easily later on, without plodding through each day of a calendar to find the information you're looking for. (See page 29 for an explanation of how to view Calendar entries from the Note Pad function of the program.) If your Calendar entry concerns the date you planted corn, for instance, you might name the entry *Plant corn* or simply *Corn*.

Calendar entry names can be up to 15 characters long, including spaces, punctuation, and numbers. You don't need to include the date with the name, as it will be automatically displayed with the name in the Note Pad. Only one entry name may be assigned to each date in the Calendar.

11. If you don't want to assign a name to your Calendar entry, press RETURN. If you do, enter the name in the box at the blinking cursor and press RETURN.

12. The pointer appears over the option SAVE. This records your Calendar entry on the Calendar/Note Pad data disk. If you don't want to record your entry, you can use the arrow keys to move the pointer to the option CANCEL. Press RETURN after you have selected your option.

13. The Calendar entry fades into the background on your screen, and the complete calendar for the month in which you were working moves to the front. That's all there is to it!

USING THE ESCAPE (ESC) KEY When you're in the Calendar part of the program, pressing the ESCAPE key will take you back to the previous screen. If you are at the screen that shows the complete calendar of a month, for example, pressing ESC will take you back to the screen that displays all the months of that particular year. You can then choose another month in which to make an entry, or press ESC again to choose another year. Pressing ESC once more will take you back to the Program Selector menu.

Think twice before you press ESC while making an entry on a calendar date. If you do press ESC, what you have already typed in will be lost.

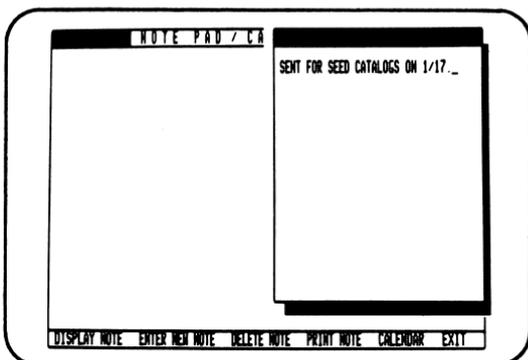
EDITING CALENDAR ENTRIES The entries you type into a Calendar date box will be recorded exactly where the blinking cursor appears. Use the arrow keys to position the cursor where you want it, and then type your entry.

You can use the delete key to remove any unwanted characters, or you can simply position the cursor and type a new entry over an old one.

Now that you're familiar with the Calendar, you can move on to explore the Note Pad function. If you are at the start of the Calendar, you can move to the Note Pad by holding down the CONTROL key and pressing N.

How to Use the Note Pad

To use the Note Pad function of the Personalized Plant Selector, from the Program Selector (the first menu of the program), move the pointer over the third selection, Note Pad, and press RETURN. If you are at the start of the Calendar part of the program, you can bypass the Program Selector and go directly to the Note Pad by holding down the CONTROL key and pressing N. If you do not have the Calendar/Note Pad data disk in drive 1, a screen message will ask you to put it there.



The Note Pad/Calendar menu appears on your screen. The Calendar is included here because the Note Pad allows you to review your Calendar entries by name and date, as well as to delete entries and print entries. The Note Pad and Calendar functions work in tandem to help you in organizing and managing the information you collect and enter into the program.

Take a look at the bottom line of the screen. Listed there are several commands that will help you organize your garden planning. You use the directional arrow keys to position the pointer on a command, and then press RETURN to carry it out.

CREATING A NOTE To create a note, whether it be a shopping list or a note that you sent for seed catalogs, follow the steps listed below.

1. Move the pointer over ENTER NEW NOTE and press RETURN.
2. A box will appear on the right side of your screen, with a blinking cursor in the upper left corner. This is where you type in your note. If you are making a list, press the carriage return after each item to move to the next line. If you want to write comments or sentences, you do not need to use a carriage return until the end of a paragraph. The cursor automatically moves to the next line when you reach the right margin. Try typing the following shopping list:

stakes
twine
rose food

When you have finished typing your note, press the  key to the right of the spacebar.

3. A message box flashes on the screen asking you to assign a name to the note. Unlike Calendar entries, you *must* assign a name to the note. The name can be up to 15 characters long, including spaces, punctuation, and numbers. Type in the name and press RETURN.

4. The pointer appears at the SAVE option in the message box. If you don't want the note to be recorded on the data disk, move the pointer to the CANCEL option and press RETURN. If you do want the note to be recorded, press RETURN when the pointer is over SAVE.

That's all there is to it. The name of your note will appear on the Note Pad/Calendar menu. The names of any subsequent notes you make will be added in alphabetical order in this space. This space acts as a *directory* to the entries on your Note Pad. Try entering and naming two or three more notes to see how this works.

DISPLAYING A NOTE Reviewing or adding to any note you've made is easy. After your note is saved, the pointer automatically returns to the first item on the bottom command line, DISPLAY NOTE. If you press RETURN, the pointer moves to the first name on your list of notes. Using the arrow keys, move the pointer to the name of the note you want to see. Press RETURN, and the note is displayed on the right side of your screen.

By using the arrow keys to move the blinking cursor to the position you want, you can add to your note or type over the old note to update it. Press the  key when you are finished reviewing or editing your note. A message box will tell you the name of the note and you can select either SAVE to record any changes you made in the note, or CANCEL, which will preserve the note in its original form.

DELETING A NOTE Some notes you make will be only temporary jottings—shopping lists, for example—that you won't want to keep as part of your gardening records. Use the DELETE NOTE command to remove these superfluous notes from your Calendar/Note Pad data disk.

Move the pointer along the bottom line of the Note Pad/Calendar menu until it is on DELETE NOTE. Press RETURN, and the pointer will move to the first name on your directory of notes. Next, move the pointer to the name of the note you want to delete, and press RETURN. The disk drive will whirl momentarily, and then the name of the note you deleted will disappear from the directory of notes.

Until you press the final RETURN, you can abort the DELETE NOTE command by using the ESC key. After the final RETURN, the note is gone forever.

Using the DELETE NOTE command will eliminate all of a note. If you want to delete part of a note, use the DISPLAY NOTE command and edit the note as you wish. Then SAVE the changed version.

PRINTING NOTES Sometimes you'll find it useful to have a print-out of your notes for your permanent garden records or to have a copy of a shopping list to take to the nursery. The PRINT NOTE command lets you print your Note Pad entries.

Move the pointer along the bottom line of the Note Pad/Calendar menu until it is over PRINT NOTE. If you press RETURN, the pointer moves up to the first name in your directory of notes. Move the pointer over the name of the note you want to print. Make sure your printer is on, press RETURN, and the printer will print your note.

USING CALENDAR ENTRIES ON THE NOTE PAD From the Note Pad/Calendar menu, you can use almost all the Note Pad/Calendar commands with your existing Calendar entries.

First, move the pointer along the bottom command line until it is over CALENDAR. Press RETURN. Notice that the command CALENDAR is replaced by NOTE PAD. The pointer moves back to the first command, DISPLAY NOTE, and if you have made any Calendar entries that are recorded on the Calendar/Note Pad data disk, a directory of their names appears on the Note Pad/Calendar menu.

When you're working at the Note Pad/Calendar menu, you can be in either the Note Pad mode or the Calendar mode. Always check the next-to-the-last command on the bottom line; if it shows CALENDAR, then you are in the Note Pad mode. Conversely, if it shows NOTE PAD, you are in the Calendar mode.

Use DISPLAY NOTE to look at and change any of the Calendar entries you have made. You can even add to a Calendar entry using the DISPLAY NOTE command. Use the DELETE NOTE command to delete a Calendar entry and the PRINT NOTE command to print a Calendar entry. To return to the Note Pad mode on the Note Pad/Calendar menu, move the pointer over NOTE PAD on the command line and press RETURN.

LEAVING THE NOTE PAD Unlike other parts of the program, you cannot use the ESC key to move back to the Program Selector from the Note Pad/Calendar menu. To move to the Calendar part of the program, hold down the CONTROL key and press C. To reach other parts of the program, move the pointer along the bottom command line to the last

command, EXIT. Press RETURN, and the program takes you back to the Program Selector.

How to Use the Calculator

To use the Calculator part of the program, move the pointer over the fourth selection, Calculator, in the Program Selector menu and press RETURN. If you have been working with the Note Pad or Calendar, a message will ask you to "Please insert the ORTHO SOFTWARE." Remove the Notepad/Calendar disk, insert the program disk, side 1 up, and press any key. A pictograph of a calculator will appear on your screen.

There are two ways to use the Calculator: by typing in numbers and functions from your computer's keyboard, or by moving the pointer to the numbers and functions with the arrow keys or the mouse.

USING THE KEYBOARD Suppose you want to figure how many cubic feet of mulch you'll need for a rose bed that is 20 x 30 feet if you spread a 6-inch layer. Press the 2 and 0 to enter the first number. Press the asterisk (*) key for multiplication, then the second number, 30. Press the * key again and then enter .5 (6 inches equals .5 foot). Then press the = key to get the answer: 300 cubic feet. Before moving on to another calculation, press C to clear the calculator.

To divide press the slash (/) key. To subtract, press the hyphen (-) key. The + and = signs are on the same key.

Note that when the pointer is on any calculator key, pressing RETURN will enter that function. This can be especially useful if you want to clear an entry (CE) or clear the entire operation (C) from the Calculator.

To return to the Program Selector menu when you have finished using the calculator, press ESC. But remember that this deletes any information you have entered.

USING A MOUSE To use the Calculator with a mouse, move the pointer around the keys of the calculator and press the mouse button each time you want to enter a number or a function.

If you have a mouse, try the mulch calculation using it. Move the pointer over the 2, click the mouse button, move to 0, and click. Next move the pointer to the multiplication symbol (*), and click the mouse. Enter the next dimension by moving the pointer to the 3 (click) and the 0 (click). Move the pointer again to the * and click. Enter the third dimension by moving to the decimal point (click) then the 5 (click). Moving the pointer to the = and clicking the mouse will produce the answer. Move the pointer to C and click the mouse to clear the Calculator before going on to your next calculation.

Appendix: Program Set-Up

The Program Set-Up part of the Personalized Plant Selector program allows you to make adjustments to the settings included in the program for type of printer, cursor shape, the speed at which the cursor blinks, and mouse responsiveness.

To reach the Program Set-Up menu, position the pointer over the sixth selection in the Program Selector menu, Program Set-Up, and press RETURN.

Setting Up Your Printer

Your Plant Selector is preset for Imagewriter and Scribe serial printers. These settings will be correct in most cases. If you have a parallel printer, you may need to change the line-feed and protocol settings. To check or change these settings, place the pointer on Set up the PRINTER parameters selection on the Program Set-Up menu, and press RETURN. The Set Up Printer Parameters menu is displayed on the screen. The two sets of values you may have to change on this menu are the line-feed setting and the protocol settings.

LINE-FEED SETTING The Line-feed setting controls the space between lines of type. Some printers expect a specific command from a program to move up one line space, while others automatically move a line space with each signal for a carriage return. If your printer is printing copy double-spaced and you want it to print single-spaced, or if your printer is overwriting (printing lines on top of each other) you'll have to change the line-feed setting.

Using the directional arrow keys, move the blinking cursor down to the fifth box in the left column. If your printer is producing double-spaced copy, change the line-feed setting from Y (yes, add a line space) to N (no, don't add a line space). Conversely, if your printer is overwriting, change the N to Y.

PROTOCOL SETTINGS Protocol settings are a series of six three-digit numbers that control the style of printing. Protocol settings are made in the bottom box of the left column. Move the cursor to the number you want to change and type the new number. The following settings are the required protocols for some common printers:

EPSON	032	032
	032	032
	032	138
OKIDATA	009	032
	075	141
	030	138
NEC	009	032
	078	141
	030	138
C. ITOH	009	032
	078	141
	030	138
BROTHER	009	032
	056	141
	048	000

If your system has a printer buffer (either built into the printer or added on as a separate unit or plug-in card), use these protocol settings:

009	032
048	141
078	138

If you change the settings and later want to change them back to the Imagewriter and Scribe settings, use the following settings:

032	032
032	032
013	010

After changing a printer setting, press ESC to return to the Program Set-Up menu. Move the pointer to Quit the OPTIONS Program, and press RETURN. *If you leave the Program Set-up menu by pressing the ESC key again, your changes will not be recorded on the program disk.*

Adjusting the Cursor and Mouse

The Personalized Plant Selector program allows you to choose the shape of the cursor, set the rate at which it blinks, and adjust the responsiveness of the mouse.

To make these adjustments to the program, place the pointer over Set the KEYBOARD and MOUSE Parameters on the Program Set-Up menu

and press RETURN. The Set-Up Keyboard and Mouse Parameters menu appears on your monitor.

To change any setting on this menu, move the cursor over the existing setting, type in the new number or letter, and then move on to the next setting.

After you have changed any settings, use ESC to return to the Program Set-Up menu, move the pointer over Quit the Options Program selection, and press RETURN.

If you leave the Program Set-Up menu using the ESCAPE key, your changes will not be stored on the program disk.

The cursor setting determines the shape of the cursor. The sample shapes are shown in the right column. If you want to change the shape of the cursor, enter the appropriate number in the left column.

The throb rate determines how fast the cursor blinks. Use a value from 1 to 255 to set the rate of blinking, 1 being the fastest. Higher values will give you a slower rate. Use zeros in front of values of fewer than three digits—for example, 005 for a value of 5, or 083 for a value of 83.

The mouse ratio determines the rate of responsive movement of the cursor or pointer on the screen to the movement of the mouse on a surface. The scale is again from 1 to 255, with the value 1 giving the fastest response. To make the on-screen indicators less jumpy in response to the mouse movement, enter a higher number. Again, use three digit numbers only, by typing zeros before one- and two-digit values.

The mouse setting turns the mouse on and off. It is preset to the Y (on) position.

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