nor a spelling checker; those operations, if still necessary, must be performed prior to entering VP or by saving the file in the proper format for reentering a supported word processor—any typographic information that had been added to the file notwithstanding.

The paragraph tagging mode is used to assign typographic attributes to an entire document, to an individual page or paragraph, or to a hierarchy of heading lines (as many as 10) for chapters, sections, subsections, etc.

The frame setting mode provides for delineation of boxes on a page into which text, pictures, or graphics can be placed. It is this mode that is used to establish the width or widths of multicolumn material for magazine articles and newsletters. Once specified, frames and their contents can be moved, copied, resized, or deleted. The frames can be displayed on the screen but are not shown in the printed page.

The graphics drawing mode enables the drawing of lines, circles, ellipses, rectangles, and rectangles with rounded corners, in a variety of thicknesses. The closed curves can be filled with a variety of patterns and superimposed to create attractive designs. The selection from the side bar of *box text* facilitates the preparation of callout boxes, tabular data displays, and intricate forms.

Ventura Publisher operations are controlled via appropriate style sheets and parameters set in dialogue boxes associated with the eight drop-down menus in which the options appear either in gray or black face depending upon their relevance to the operation of the moment. They are selectable only when in dark face. The options menu is available at all times and contains 13 items; some are on–off switches controlling the display of pictures, column guides, loose lines, etc. The selection of others results in the display of a dialogue box allowing for setting printer options and program parameters, adding or changing fonts, or setting horizontal and vertical rulers on the screen in inches, centimeters, or picas. Single pages can be displayed in three modes: normal (1×), enlarged (2×), and reduced mode. There is also an option for displaying facing pages.

One would expect such a program to provide for handling widows and orphans, for keeping two or more paragraphs on the same page, for dropping footnotes on the proper page, and for control of line widths and spacing. VP does much more. It gives the user control of word spacing, character spacing, and even more specialized letter spacing called kerning, where certain letter pairs, VA, AW, We, etc., are set closer than normal. Kerning is, however, achieved on the printed page only when the necessary kerning information is contained in the font tables, as it is in the case of PostScript fonts.

Anyone who has experienced the frustrating delays and expense resulting from a seemingly minor breakdown of communication with any typesetting system (manual or automated) will appreciate—even marvel—at the way VP sets, resets, and rehyphenates a document before one's eyes, from a one-column to a two- or three-column format. There are, in fact, six hyphenation algorithms: two for American English (one fast, one exhaustive and hence slower), and one each for U.K. English, French, Italian, and Spanish. The algorithms are backed up by a small built-in dictionary, and provision is made for building a user hyphenation dictionary to handle acronyms and other exceptions. An especially troublesome word can always be hyphenated by the hand of the offended purist.

Ventura Publisher is such a full-featured system that even a long list of its features would be inadequate. It is sufficient to say that it is difficult to envision a layout too complicated for it to handle adequately—even handily. If the resulting product does not win a design award, it will not be the fault of Ventura Publisher.

As is now to be expected, a successful computer product soon stimulates a number of enterprises from third-party vendors, and this program is no exception. There are already five books[1-5] devoted to and produced via VP, a dozen or so local and two nationwide Ventura Publisher User Groups,[6,7] and a disk[8] containing 50 new style sheets produced by the author of those contained in the Ventura Publisher package. Furthermore, the customer base for Ventura Publisher is now large enough for computer magazines to start carrying feature articles[9] and for *TYPEWORLD* to carry a regular column called "Ventura World".

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Pagemaker

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Within the past three years a new class of document-processing programs for personal computers (PC) of increasing importance to chemists has appeared on the market. These programs are usually categorized as desktop publishing (DTP).

How do desktop publishing programs compare to ordinary word-processing (WP) programs? Why are they important for chemists? DTP programs do not replace WP programs. DTP programs can be considered as fancy printing tools that allow graphics to be merged to a word-processed document.

Three classes of document-processing programs can be considered relevant for chemists:

(1) Ordinary WP programs such as Wordstar, WordPerfect, and MS-Word can handle ordinary text including superscripts, subscripts, boldface, underline, etc. They usually do not allow graphics to be merged. Most of them also do not contain a WYSIWYG (What You See Is What You Get) feature; i.e., you cannot review the final page layout on your PC screen. WP programs usually support a wide variety of laser and dot

matrix printers. Any graphics such as chemical structures usually have to be pasted in by hand.

(2) Chemical (or scientific technical) WP programs such as Chemtext, Scientex, or T[3] allow you to draw chemical structures within your document. Some of them have a WYSIWYG feature. Their ability to handle different type styles (fonts) is limited.

(3) DTP programs such as Xerox Ventura or Aldus Pagemaker (the latter is reviewed here) require a WP program to generate the text of a document and a CAD or other graphics program to generate chemical structures or other types of graphics. They usually have limited capabilities to generate text and graphics within the DTP program itself and are therefore not efficient tools for *generating* text and graphics. DTP programs support a wide variety of laser printers and typesetting machines. They usually also support matrix printers, but in my opinion the quality of these is insufficient for DTP applications.

I tested Pagemaker Version 3.0 for IBM-compatible PCs. For testing the program I used a Compaq Portable 386 running on a 20-MHz clock with 4 MB of RAM. The Compaq was equipped with a VGA graphics adapter and a NEC Multisync II monitor. The PC was connected to a HP Laserjet Series II with 1.5 MB of internal RAM.

Setting up the program on the hard disk was no problem. The menu-driven setup program is self-explanatory. You only have to know your system parameters (RAM size, graphics, printer, etc.), which is explained on one of the first screens. The review copy came on a set of 3-$^1/_2$-in. disks, although the Installation Guide claims that the package also comes with 5-$^1/_4$-in. disks. I therefore had to copy the disks on another PC that is equipped with both types of drives. (I could have also called customer support as suggested in the manual, but I did not want to wait for the diskettes to be shipped from the U.S. to Germany.) Pagemaker runs under MS-Windows (2.0 or higher) or Windows-386. If you do not have a Windows-license, you can install Pagemaker with the included Windows-Runtime-Version.

It is a very nice feature that Pagemaker comes with a font generation package called Fontware. Fontware comes with four different fonts (Courier, Symbol, Dutch, Swiss; additional fonts are available for a charge). It allows you to generate virtually any size of any of these fonts in two orientations, i.e., portrait and landscape. Since one of the biggest advantages of DTP programs is the ability to combine various fonts in various sizes, this is an extremely helpful tool.

It took me approximately two days to get familiar with Pagemaker. I should point out that I have worked with WP programs for almost 10 years but that I have never used a DTP program before. It certainly helped that I was familiar with MS-Windows. The documentation consists of the Pagemaker and the Fontware Installation Guide, a tutorial (Getting Started), User Manual, and Reference Manual. The documentation is generally good. However, I did not like the tutorial very much. It is very important to correct the errors before going through the tutorial. I missed the separate correction sheet at first that is included in the package but can easily be overlooked. The tutorial shows many of the highlights of Pagemaker but in my opinion does not explain very well where I need them for processing a document. The User Manual is structured very well. I would therefore recommend starting with the User Manual to teach yourself Pagemaker.

It is very simple to place a word-processed document into Pagemaker:

First Step. Set up your page layout. You can do this yourself by defining the print fonts, page orientation, page margins, layout grid, etc., or you can use one of the predefined style sheets. You can store your own layout as an additional style sheet, or you can modify an existing style sheet. Storing your own layout as a style sheet makes a lot of sense if you produce many similar documents such as different issues of the same newsletter or manuscripts for the same journal.

Second Step. Place your word-processed text into the document. This is a very simple procedure: Call up the name of your text file (in word processor or ASCII format) and tell Pagemaker which word processor you used to generate the text (this only has to be done if the filename does not contain the corresponding extension). The mouse cursor changes to a text icon that you can place anywhere on any of the pages you have set up in step 1. If you have enabled the autoflow option, Pagemaker uses as many continuation pages as it needs (up to 128) to place the whole document. Pagemaker supports almost all commonly used word processors. Unfortunately, it does not support Chemtext.

Third Step. Place any graphics within the text. Pagemaker accepts most of the common graphics formats such as the following:

- PC-Paintbrush (PCX-Format). Since PC-Paintbrush contains a program, Frieze, to capture almost any pixel graphics from almost any PC graphics adapter, this program can easily be used to place screen graphics into your publication.
- Several other pixel-type graphics formats such as PC-Paint (PIC-Format), Windows Paint, MacPaint, TIFF, and HP Graphics Gallery. Via these graphics programs you can also transfer scanned images into your publication.
- Draw-type graphics such as HP-GL or AutoCad format. Since these formats store graphics in vectorized form, you will get a much higher resolution on your publication with these

Pagemaker Sample Document

This sample document is used to show Pagemaker's capabilities to intermix text with graphics. This text was prepared with Wordstar 4.0. Below you see a line chart prepared with MS-Excel and stored in HPGL-Format. The legend to the chart was prepared with Pagemaker's text tool.

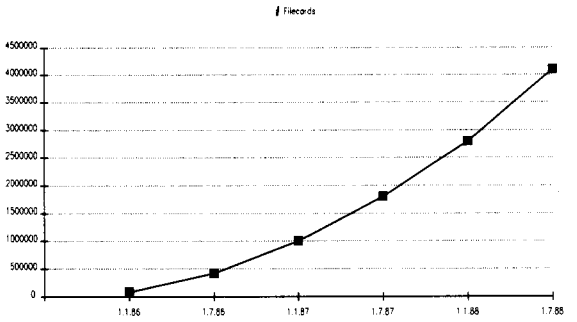

Fig. 1: MS-Excel Line Chart

The structure image was prepared using Beilstein's MOLKICK program. The structure was captured from the VGA-Screen (resolution 640 x 480 Pixels) using the Frieze-program of the PC-Paintbrush program package (this package comes free with every Microsoft Mouse). The captured image was stored in a disk file and placed below. There are various ways to flow text around graphics.

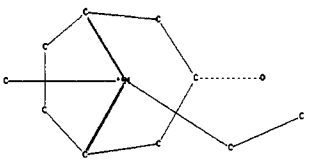

Fig.2: Beilstein's MOLKICK Structure Diagramm

Figure 1.

formats. Most commonly used draw-type graphics formats are supported.

• Encapsulated Postscript (EPS). This is a special format for postscript laser printers, which includes paint- and draw-type graphics. You must have such a printer if you use this format.

There are several options on how to place the graphics within your text. You can place it above or below your text or allow text to flow around it in almost any way you can think of. You can enlarge or decrease the size of your image or use the clipping tool to cut out parts of the image. You can even move the image within the clipped frame to find the optimum position.

Steps 2 and 3 can certainly also be interchanged, i.e., place the graphics first and then flow the text around or above it. As an example (see Figure 1) I created a small Wordstar file and placed it in the document using my manuscript style sheet (Times Roman Font). Then I created a line chart using Microsoft Excel. I saved this bar chart in HPGL-Format (i.e., I installed a HP-7475 plotter under Windows and directed the output to a file) and placed it within the document. Finally I created a chemical structure diagram using Beilstein's MOLKICK program. I captured the diagram using the Frieze program of PC-Paintbrush (see above) in VGA resolution and put the respective PCX image into the sample document. Since I captured the screen as a pixel image, the resolution is worse than for the bar chart in HPGL format but still looks pretty good. (Unfortunately, I could not find a chemical drawing program that stores structure images in vectorized HPGL or AutoCad format. Why doesn't someone write such a program?) It took me about an hour to create this sample.

I could not detect any serious flaws in Pagemaker. The program hung twice while I was using it. I am not sure, however, whether it was a problem with MS-Windows-386 or with Pagemaker or with my VGA-Graphics adapter. In both cases I managed to save my work and get back to DOS. I was not able to reproduce the crashes.

Summary. As I mentioned above, Pagemaker is very easy to use, especially once you have set up your style sheets. I use it for preparing overhead transparencies, manuscripts, and even for important letters. Pagemaker does not replace a word processor, and it was never meant to do so. It certainly makes life easier if you need to mix graphics with text or if you need high-quality print output. You should use it with a comparatively fast PC (at least a 12-MHz 80286-type PC) and a high-resolution graphics adapter. In total, Pagemaker can be considered a very helpful tool for the chemist to generate professional-looking documents.

STN Express

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STN Express is a front-end software package produced by STN International to facilitate computer communication and online searching with STN International. The package can be used for automatic logon to other online services (BRS, Dialog, and ESA) as well as for general manual terminal emulation. The package is composed of some well-known computer programs (e.g., Kermit, Plot 10) as well as specially written software (e.g., a chemical formula drawing program).

STN Express is designed to run on IBM/PC, IBM/PC-XT, IBM/PC-AT, PS/2, or 100% compatibles. Our experience with IBM/PC-XT, IBM/PC-AT, Olivetti M24, and AT&T 6300 showed us that there is a difference in the ease of installation as well as speed of use depending on the computer used. Furthermore, the ease of installation depends also on the configuration of the machine used. Minimum requirements are for a 640K RAM with 510K of free memory, one floppy disk drive, and a hard disk with 4 MB of space (2 MB is required for installing the software, another 2 MB is recommended for query building and capture of results), version 3.0 or higher of MS-DOS or PC-DOS. Various options are given for a graphics card (Hercules monochrome or plus; EGA monochrome or color; VGA, AT&T 6300; Olivetti M24; Compaq III; 100% compatibles) and a mouse (Microsoft, 100% Microsoft compatible; Mouse System; IBM PS/2).

The program uses pull-down menus that can be used either with a mouse or with a cursor (and keyboard commands in the case of chemical formula drawing). Using the cursor and the keyboard commands is somewhat slower to begin with, but with time one can do as well as with a mouse.

STN Express enables one (an information specialist or an end-user, an expert or a novice to online searching) to access and search quickly and conveniently the various STN International scientific and technical databases. STN Express provides the user with an automated login to STN International, offline search strategies and chemical structure query formulations, and predefined search strategies as well as special search and display features [scrolling text and graphic, editing command lines, type-ahead (typing while the system is running a search or displaying an answer, the typed material will appear after the next system prompt (=> or :) is displayed)], split text and graphics, and capturing and/or printing an entire (or part) session. For real novice end-users who do not know the STN Messenger command language, STN Express provides the Guided Search module. This module enables everyone to run a simple search (including a chemical structure or a chemical reaction query) with the help of guiding menus. Once the search formulation is completed, STN Express logs on automatically to STN, runs the query, displays the results, and disconnects from STN. The results are automatically captured so that they can be reviewed offline, and if there is a need, the search query can be modified and rerun.

To sum up, STN Express fulfills most of its claims. It enables the user to prepare offline ahead of time his strategy formulation and then upload it after automatically logging into STN. Furthermore, the user can edit and/or reuse one or more of the command lines online or offline. The captured results can be edited either directly (in the case of an ASCII file) or after text and graphics have been split, while the graphics could be added again at a later stage.

The package is accompanied by very good documentation; it is a 332-page manual (an action guide) written very clearly and explaining the various modules of the software in a clear and simple manner. STN International provides good worldwide customer support service for STN Express via its