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MULTI-LINGUAL SCHOLAR, version 3.1. Gamma Productions (710 Wilshire Blvd., Suite 609, Santa Monica, CA 90401), 1988. MS-DOS Five disks; two manuals. \$350; laser printer option \$150 additional (laser option not reviewed). Demonstration disk \$15, applied to purchase.

MULTI-LINGUAL SCHOLAR (=MLS) requires 640K memory and graphics capability, one disk drive, a parallel port, and one from a list of popular 9-pin, 24-pin, or laser printers. MLS is not copy-protected, but an included "actuator" must be plugged into the parallel port; this ensures that the program is only used on one computer at a time. The actuator was an inconvenience, but less so than copy protection.

Rather than multi-lingual, it would be more accurate to call MLS multi-alphabet. It comes with Latin, Greek, Russian, Hebrew, and Arabic/Farsi alphabets, and the user can choose a free sixth alphabet; among the selections is International Phonetic Alphabet. An included "Font Scholar" utility designs or modifies character shapes; another utility allows modification of keyboard configurations. Character shapes can be extracted from scanned manuscripts or books; the publisher offers this service. I saw a stunning demonstration (by James Marchand of the University of Illinois) of how the first good printed alphabet for Gothic had been prepared from scanned manuscript letters.

Both editing and printing are done in graphics mode, and the program can accommodate any characters, subject to the restriction that no more than five alphabets can be in use at one time. The program easily handles accents on capital letters, multiple diacritics (macron plus accent, for example), and permits discussion of diacritics without letters underneath. Right-to-left alphabets can be combined on the same line with left-to-right, with context-sensitive character shapes for the languages that require them. Besides the characters needed to do Portuguese, Rumanian, Icelandic, etc., the Latin alphabet includes ligatures (\ae , \o), the dagger, copyright sign, the Gothic thorn, and dots under letters for transliterations. While some ASCII special characters are included (the paragraph symbol, the section symbol), others are strangely missing: arrows, the Peseta and Yen symbols, the superscript underlined "a" and "o," used in Spain. Included are single-character "ch" and "ll" combinations, seemingly created for Spanish but whose application I cannot envision. The Catalan medial dot is not included.

MLS is marketed as if it were a general word processor for all languages. However, **its features are primitive compared with WordPerfect, Nota Bene, and other major word processors. The program is difficult and quirky to install and use. Because of the calculations needed the graphics-based printing is very slow, about one minute per line in quad-density mode.** Output on a 9-pin printer is marginal in quality.

The program uses a unique file structure. Rather than marking

changes of alphabet, every character is preceded by an alphabet marker, consisting of another character. This means that an MLS file is approximately double the size it would be with any other word processor. Not only is this wasteful of disk space and scarce memory capacity, it means that MLS files, even in English, are inaccessible to such other programs as spellers and text search or disk utilities. The included import-export utility took 16 minutes to import a 20K ASCII file; only ASCII and WordStar formats are supported. None of the file conversion programs on the market handles MLS files, although a software “clipboard” works well with small imports or exports of English.

The documentation, both printed and on-screen, is poorly written and sometimes incomplete or wrong. The lengthy documentation update file is no substitute for updated manuals (those supplied are for version 3.0). As the diacritics in the alphabet charts are sometimes hard to distinguish from each other, and since most users will not be equally familiar with all the characters, it would be helpful to accompany each character in the charts with its name (tilde, lam, rough breathing, etc.).

An essential improvement in the program is drive prefix and subdirectory support, especially when a hard disk is recommended. The program also wastes memory with unneeded data, to the point that one may need to remove high-memory software. The capacity to emulate a dead key, with the accent before the vowel, is highly desirable.

The installation program also can be improved. The pre-installation provided assumes, surely incorrectly, that the user needs the capability to write in English, Russian, Greek, Hebrew, and Arabic. It is possible to configure the program for fewer alphabets, thus freeing memory and disk space and increasing loading speed, but it is confusing and easy to do wrong. The installation procedure should permit change of defaults for margins, headers, and the like, and permit making “insert” instead of “overstrike” mode the default.

Despite these shortcomings, the program can be useful. The program handles Arabic better than I thought possible, and an Arabic ASCII is within view.

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