Computerised plants

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1. No longer do you have to get your knees and hands all muddy! You can study plant life by using the program called **PlantStudio**. Find it on the Internet at **Kutz-fernhout**.

This prog has a library of installed plants to set the scene for practice; you can watch them grow. Next stage is to create your own plant (you can even name it after yourself!) - by answering about twenty-five vegetative questions – parameters for architecture and growth. The Wizard will do the drawing for you.

Tutorials and a good help file are available. Shareware.

2. Lindenmayer systems (1968) were developed partly to provide

realistic modeling of plants. A useful introduction can be found at **cogs.susx.ac.uk**: *Introduction to Lindenmayer Systems*, by Gabriela Ochoa. Or look up **Lsysedit**, which is a free program that allows you to construct a model – illustrated here. Reminiscent of the old LOGO programming language.

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3. DELTA is a system for the computerized generation of plant descriptions, and of vegetative key systems. Look it up at http://biodiversity.uno.edu/delta/

4. For the professionals (US\$500) there is **<u>Greenworks' Xfrog</u> 3.0**; modeling, adjusting, texture, colour, etc. As well as plants, other applications.

5. Karl Sims: Artifical Evolution for Computer Graphics

For artificial evolution of parameter sets to occur, they must be reproduced with some probability of mutation.

Genetic algorithms were first developed by Holland as robust searching techniques in which populations



ust searching techniques in which populations of test points are evolved by random variation and selection.

Both biological and simulated evolutions involve the basic concepts of genotype and phenotype, and the processes of expression, selection, and reproduction with variation.

On the Internet very many other botanical applications are available – databases of information, pictures, landscape design, and others. The GOOGLE browser is recommended, especially if you are looking for related topics.

Forest of 'evolved' plants.