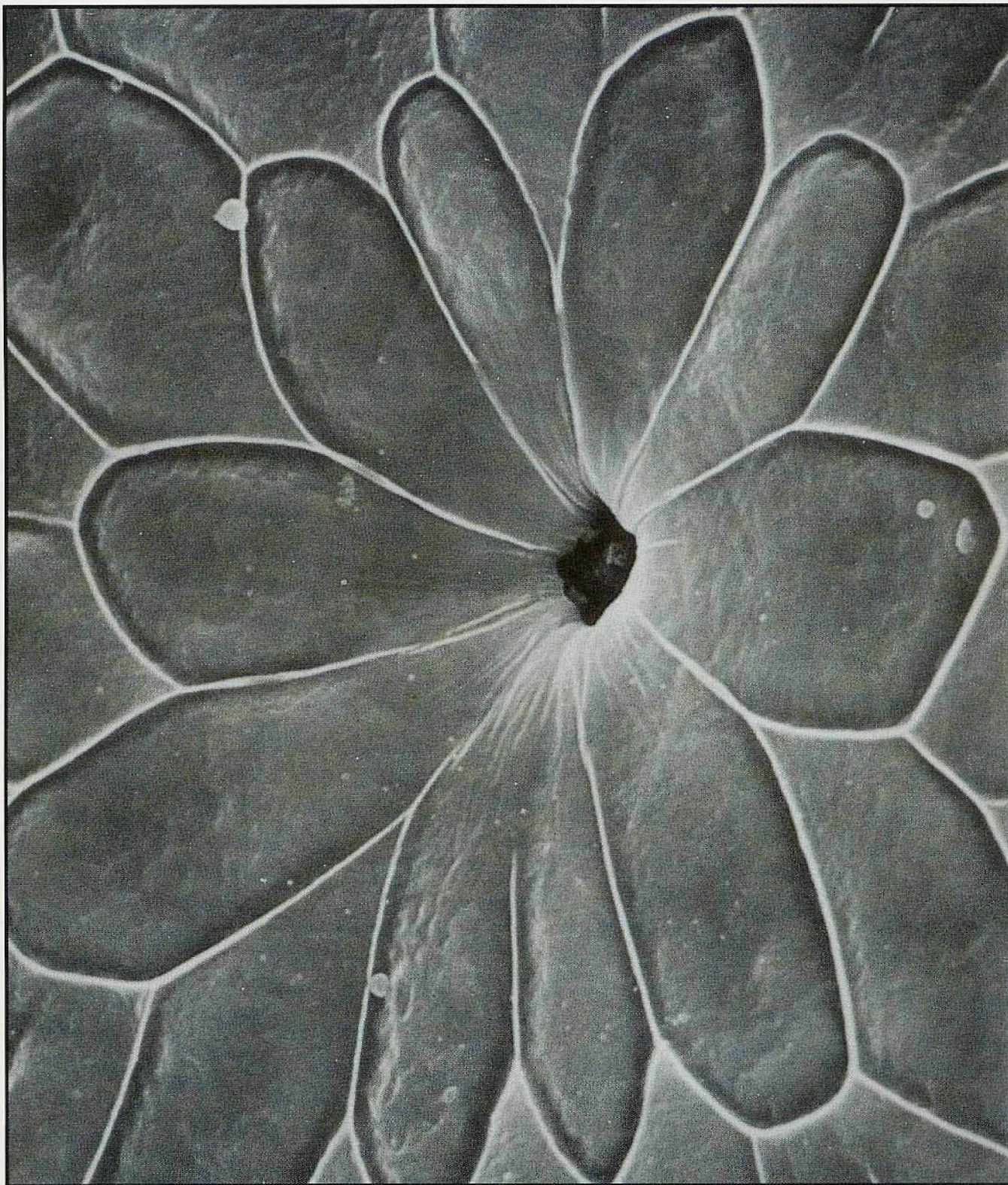


MICROSCOPY TODAY

<https://doi.org/10.1017/S15299500065445> Published online by Cambridge University Press



JUNE/JULY 1994

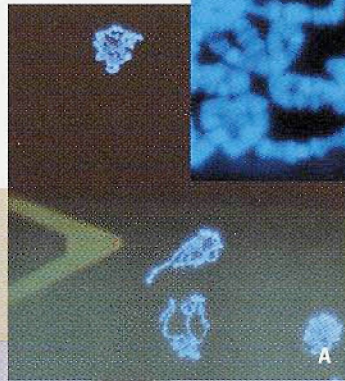
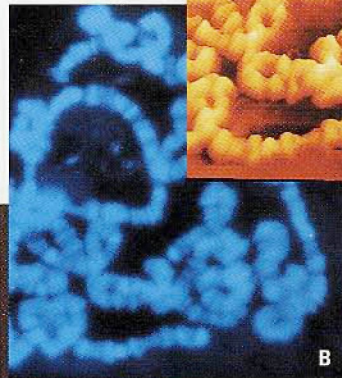
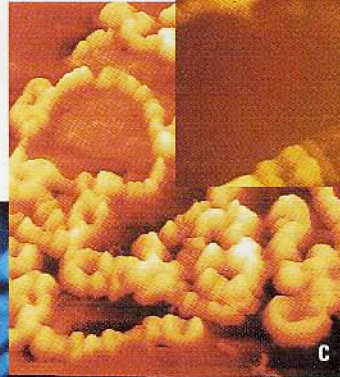
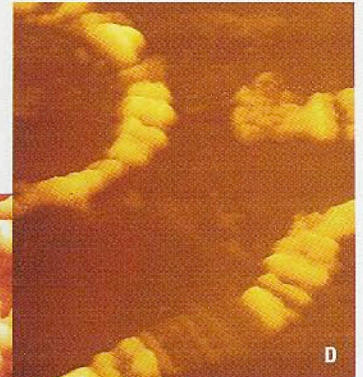
ISSUE #94-1

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The four images of polytene chromosome clusters show: visual positioning of the SPM probe tip (A); an optical microscope image (B); a 100µm atomic force microscope (AFM) image (C); a 50µm AFM image showing bands and interbands (D).

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The WAIS and byways of the GOPHER

Jean-Paul Revel, Caltech

The Gopher, although as industrious as the Beaver and the skilled architect of complex subterranean mazes which should inspire as much awe as the dams and lodges built by beavers, is rarely revered as the mascot of Institutes of Higher Education. In real life many, my wife and I included, relentlessly pursue the garden variety gopher who dares to intrude and destroy prized plants, or for that matter even plants we do not care about. It is my job to deal with them and I do it like a Daemon that's BinHex-ed. However there is a highly prized and very beneficial, if virtual, species of GOPHERs. These creatures, created at the U. of Minnesota (home of the Golden Gophers), put their tunneling ability to good use, digging out otherwise hard to find information and so performing great services on the latter day wonder of electronic communication, the Information Superhighway, the Internet.

Everywhere I look, (or is it just that, all of a sudden, I notice?) there is something about the Internet. Last week I received a flyer from the National Library of Medicine which offered for loan a 4 minute video travel guide to the Internet¹ and yesterday my neighbor stopped me on the street to discuss the Internet. The May 2nd issue of *The Scientist*, the newspaper for the Science Professional published by Eugene Garfield, had advice on how to use the Internet. In fact *The Scientist* (and also *USA Today*) are now available online as are the table of contents and abstracts of papers published in the *Biophysical Journal* including the biographies of their authors. If that's not enough you can also learn all about Multidimensional Microscopy and much, much more assuming that you have mastered ftp or WAIS (Wide Area Information Server) or have a tame GOPHER or survive the rigors of WWW (the World Wide Web, of course, not World War 3).

Using these electronic approaches should save many trees were it not for the fact that they are counterbalanced by publications on how to tame a GOPHER. My bookstore carries at least 30 titles (by actual count) on the topic of Internet (see for example references 2 & 3). I say "at least" because there are quite a few books on closely related topics which I did not include. There must be a great demand from would be Net Surfers or groupies out there. One tome² I came across implies that even Dummies can use the Internet. My first reaction was panic: if Dummies could deal with this stuff, how come I was huffing and puffing? I leafed through the book, ... ah yes

uuencode, all about Archie, Veronica, TCP/IP (now I can read all the good microscopy stuff that Nestor Zaluzec is putting together for the Microscopy Society of America and the Microprobe Analysis Society) and Yoyodyne Software Systems...Five deep breaths later, I managed to see things in a more positive light: if Dummies could use the Internet than of course, so could I. The first step would be to find out what the Dummies are told. I bought the book. Pity the poor Dummies.

Actually I am using the Net every day and you are probably too. I telnet to access Caltech's library catalog, read the abstract of papers, order reprints, figure out whether the books I need have been returned, all from my desk or from my home. It is great when I wake up in the middle of the night and can't get back to sleep. I can even receive copies of articles, including dithered illustrations, of papers scanned off campus (for a price). That way the "ILL" (InterLibrary Loan) books and journals, instead of risking their health by being exposed to the elements, can stay safely tucked on their home shelves and I nevertheless get fast delivery of material I need to write my next lecture. I use ftp to transfer micrographs I have stored on one computer (a 286 named Escher) equipped with an optical disc drive all the way across the room to a Silicon Graphics (our very own Darcy) with programs that allow me to manipulate and extract quantitative data from the images. Of course the path between Escher and Darcy goes through our computer center and for all I know with a little jog through SUNY Buffalo.

For quite a while now I have been using Compuserve, one of many commercial providers which connect to the Internet for at least some of the services they provide. This column, in fact, is sent to the "Microscopy Today" editor via Cserve. I also use it to check the weather at my destination when I have to travel (for us in Southern California, it is sometimes hard to remember to take gloves when flying to Chicago and beyond). I store notes I make when traveling in my Cserve account and retrieve them at the next stop or after I get home to work on them. I check on my airline schedules, and when I want to push my weight around, I write to my congressman and senators. "Congressgrams" may cost a dollar extra but I consider that money well spent in support of my favorite causes. This is much more satisfying than speaking to an aide in my representative's local office. I guess a FAX would do almost as well, but have you noticed how often members of the House and Senate change their numbers or turn off their FAX machines just when you want to tell them how to vote on a particular issue? Most of the messages I send to them by FAX bounce right back. With a Congressgram I not only send but also receive a piece of mail, confirmation of delivery!

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Front Page Image

\$2,500 Grand Prize Winner in the 1994 Polaroid International Instant Photomicrography Competition

Dr. Gerald T. Baker, professor of entomology and the director of the Electron Microscope Center at Mississippi State University, has been awarded the Grand Prize in the recent Polaroid International Instant Photomicrography Contest. His winning Polaroid Type 55 P/N scanning electron micrograph, with 1,000X magnification, shows the egg stage of a polyphemus moth (*Antheraea polyphemus*) which is a member of the giant silkworm moth family. The indented area in the photograph is the micropylar region of the egg, which is where the sperm enters to fertilize the egg. The larval stage (caterpillar) will hatch from this egg. The caterpillar will then feed, moult, and later spin a silken cocoon for the pupal stage from which the adult comes.

Film: Polaroid Type 55 Positive/Negative. Microscope: JEOL JSM-35 CF Scanning Electron Microscope. Camera: Polaroid Model 545 film holder. Illumination: 20 Kv, 15 mm working distance. Sample preparation: Glutaraldehyde and osmium tetroxide fixed, critical point dried, and gold-palladium coated.

MICROSCOPY TODAY

A monthly newsletter dedicated to the unique interests in microscopy of, and mailed at no cost to, some 14,500 microscopists worldwide.

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Don Grimes, Editor