

Journal club



FINDING GOLD IN YELLOWING PAPERS

It was on a trip north that I first glimpsed the riches that pass under our feet when we join the optimistic march of scientific progress. I had just started my laboratory and I imagined a world where a molecular cell biologist could carry out systematic loss-of-function screens on a whole-genome scale. I thought success would depend on the quality of reagents, on better analytical tools and on having appropriate model cell culture systems. So, I journeyed to St Andrews to meet Martin Milner, dreaming of an elusive *Drosophila melanogaster* cell line that would bridge the world of RNA interference in cell culture and the genetics of tissue morphogenesis.

Watching Martin Milner and Deborah Cottam concocting home-made media using glass flasks that were milky with age, and seeding single-embryo cultures in hand-cut

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glass chambers, I realized I had come to the right place. I won't forget seeing the rhythmic pulsing of heart cells in culture. At the end of each day's experiments, I took to Martin's office to spend the final hours of winter-afternoon sun rifling through his collection of yellowing papers. These revealed a lore of cell-culture methods: papers by Schneider, Shields and Sang, Echaliier, Debec, Ui-Tei and an unsung hero, Wyss, who described his efforts to establish a defined *D. melanogaster* culture medium and, remarkably, a diploid epithelial cell line from *Chironomus tentans*.

It was there, with bright images of Wyss's beautiful insect epithelial cell line before me, that I sensed that, although the march of progress takes with it simplified reproducible facts and methods that can be easily taught, packaged and sold in kit form, much is discarded along the way. As with the natural world, the battle for survival in the limited space that is the mind of a researcher leads to the evolution of a discipline that is

adapted to present challenges. This leaves behind a rich seam of half-forgotten observations, ideas and skills of previous generations that lie like fossils waiting to be rediscovered. So, in the search for a *D. melanogaster* epithelial cell line, the quest continues, in laboratories around the world and in the methods sections of old papers.

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ORIGINAL RESEARCH PAPERS Wyss, C. Ecdysterone, insulin and fly extract needed for the proliferation of normal *Drosophila* cells in defined medium. *Exp. Cell Res.* **139**, 297–307 (1982) | Wyss, C. *Chironomus tentans* epithelial cell lines sensitive to ecdysteroids, juvenile hormone, insulin and heat shock. *Exp. Cell Res.* **139**, 309–319 (1982) | **FURTHER READING** Echaliier, G. *Drosophila Cells in Culture* (Academic Press, New York, 1997) | Baum, B. & Cherbas, L. *Drosophila* cell lines as model systems and as an experimental tool. *Methods Mol. Biol.* **420**, 391–424 (2008) | Chang, H. *Inventing Temperature: Measurement and Scientific Progress* (Oxford University Press, New York, 2004)