
“OneLinerImages” by Ed Munn

(see back cover of the Bulletin)

Introduction

As a senior research scientist at Babraham Institute, Cambridge U.K., Dr. Ed Munn's work ranged from membrane characterization to molecular immunology. Early work with David Green's group in Wisconsin and collaborations with Guy Greville formed the impetus for his classic monograph, "The Structure of Mitochondria", E.A. Munn (1974). Studying mitochondrial development in insects, he discovered with the electron microscope a protein which he characterized and called calliphorin. This proved to be the archetype for the hexamerin (arylphorin) family of proteins. He had a long and productive collaboration with Arnold Feinstein on the structure of immunoglobulins, pentraxins and other blood proteins. In addition, working with Colin Orpin, he was much involved in the structural characterization of anaerobic fungi. Finally he developed a highly effective molecular vaccine against the parasitic nematode *Haemonchus contortus*. On my last sabbatical year I worked with Ed on aspects of this program. Ed now concentrates on drawing, writing and lecturing. On a recent visit to Ontario he first showed me his artistic vision of the common birth-right of all living things in the original and beautiful representations he calls "OneLinerImages". The maple leaf illustration on the back cover of this edition of the CSBMCB Bulletin, inspired by our autumn emblem, was his gift to my wife and me. It gives me great pleasure to introduce these unique structures to Canada.

**Dr. W.C. McMurray, Professor Emeritus,
University of Western Ontario**

“OneLinerImages”

In every day life, the intricate internal beauty of living cells is hidden from view. Specialist textbooks of cell biology, reproducing the details of research by light microscopists and electron microscopists, can provide clues about this hidden world, but the biologist and artist Ed Munn was looking for an effective means of representing this hidden

beauty in the context of the familiar external outline and thus making it accessible to the non-specialist. To this end he has developed a form he calls "OneLinerImages".

"OneLinerImages" ("OneLiners", OLIs) are representations of living things (plants and animals in particular) intended to show first, the paradoxical situation in which in order to exist, individuals must be separated from their environment, but yet are interactive with and wholly dependent on it; and secondly, the interactions between individuals essential for the survival of populations. In "OneLiner" images, the outline is a **continuous, single line** defining the surface separating the individual or group from their surroundings. The line is regularly indented to represent the internal and usually invisible complexity within living cells, many of which contain arrays of folded membranes (mitochondria, chloroplasts, endoplasmic reticulum and Golgi apparatus). The space enclosed by the line consists of continuous colour, sometimes constant but usually varying. On one level this can be taken as an expression of the differentiation of the parts of the organism into tissues and cell types and the cells into their component parts. On another level, in combination with the shapes given to the indentations it provides a means to impart texture and, obviously, external colour. The resultant images are at once easily recognisable representations of external form (oak leaf, cat, frog, heron and so on) with the striking patterns generated by the form-filling arrays of indented lines giving sense of depth and movement.

The current range of OLIs extends from the abstract, for example *Rock Pool*, to plant leaves such as *Monstera II*, fruits as in *Autumn Sumac* and *Sea Grape II* and animals (insects, e.g. *Red Admiral*; fish, e.g. *Yellow-Finned Tuna*; reptiles, e.g. *Snake I*; birds, e.g. *Green Heron*; and mammals). In one of the latter (*Dolphin II*) the inner space is shown to be continuous with part of the external space (the ocean) to show their flowing interdependence.

OLIs created by Dr. Munn are patent protected.