



JECM and 21st Century Medicine

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It is not always easy to start a new journal whose birth is usually greeted with negative opinions that express: too many? is there a need?, why do it? In contrast, there is the more positive open view that insists emphatically that such a project is worthy; in biomedicine, there is a growing need to have additional avenues to publish. When it is launched or just as it is about to appear, all those responsible at every level will offer reasons supporting it. Unlike my first journal that I started in 1977 and partly due to its success, I accepted the challenge of the *Journal of Experimental and Clinical Medicine (JECM)* as one appropriate for another phase of my career—different from the first. Concerned about the fairness and broad sweep of immunology in the late 1960s, I was convinced of the utility and intellectual worthiness of exploring the immune systems of primitive species. In other words, I the biologist/zoologist chose to create an amalgam of the nascent immunology of the early 1960s with ancient zoology (since Aristotle) to derive comparative immunology.

And so it was—it worked; immunology embraced this approach, not without some doubts and rancor but with time and publication of results that made sense, the adolescent and now the mature immunology actually rediscovered the usefulness and intellectual benefits of viewing the immune system from a different angle through broader lenses—the evolutionary perspective, one not strictly anthropocentric, more inclusive. So *JECM* is now born with the promise of excellence and the prediction of a similar outcome in due course.

We hope that it will encompass and exert a strong intellectual regional as well as international influence similar to the impact of my first journal. Coming full circle as a new book attests, the approach to *JECM* is in a sense creating an important linkage: *Evolutionary Biology for Doctors*, a new approach to an ancient discipline yet one that may encompass some of what we are celebrating.¹ In the year of Darwin, in 2009, the 150th anniversary of the publication of *On the Origin of Species*, evolutionary biology is still trying and may just earn a position in the education of medical doctors.²⁻⁵ It did for immunology!⁶⁻¹⁰

Largely due to a concern about death but equally aware of the daily struggles of preservation, all human societies have long-held medical beliefs and each has special ways of viewing all aspects including conception, birth, disease and death. Often, explanations early on in history relied on the stars, witchcraft, demons and surely unknown gods to provide wisdom as well as solace from the all-pervasive reality of life. Because of its breadth and depth and importance to survival, the creativity of humans has often been dedicated to the pursuit of life and avoiding death with successful but mostly precarious attempts to illuminate the unknown. Thus, religion has played a prominent role and its emergence has fostered creativity that leaves for us the beneficence of shrines of various sorts in the image of the perceived controller of all life's processes. So we have churches, temples, mosques, synagogues and even locales where divine emissaries supposedly appeared and provided

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a source of ritualistic solace in times of threat, including plagues, chronic illness and impending death.

Briefly, some of the major milestones in the history of medicine have included medicine in all its guises and influences by the culture in which it was borne. Therefore, we have medicine that is prehistoric, Egyptian, Babylonian, Greek and Roman, Indian, Persian, Chinese, Hebrew and Islamic, medieval and early modern, European, and modern. Surely, modern seems the most pervasive, yet there is a continuation of some of the older practices, sometimes alone and sometimes amalgamated with modern. Everyone is searching for the common goal, improvement of daily life and one that is free from pain and disease. We often resort to all sorts of strategies to achieve that all-important goal—a life free of chronic emotional ailments sometimes but only temporarily, we hope, alleviated by escape through the use of certain harmful drugs.

Now where does *JECM* fit into this scheme? Clearly, *JECM* is our attempt to contribute in a noble way to ameliorating the cause of human pain and suffering through the enlightening approach of information: publication which if done properly and with the highest standards of peer review will serve to influence later works and in so doing exert an “infectious” intellectual, spreading effect. Like medicine, the face of publishing has changed enormously, perhaps more than certain approaches to medicine itself. Nevertheless, there is a vision to medicine in the 21st century that includes, according to *Scientific American* 2006, hope for a short list of diseases, by no means exhaustive, such as: malaria, virtual reality therapy, heart surgery, pain control, stem cells, universal genomes, suspended animation.¹¹

And this should extend from those borders to a universal influence. Clearly, there is an illustrious period behind us that surely carried over into the current period of phenomenal growth and influence. It is rather common knowledge that the 18th century produced vaccine against smallpox which, by analogy, was a fertilized egg that hatched the rewards of 20th century immunology and its dissection into far more than was anticipated: phagocytosis in an invertebrate animal by the sea, Metchnikoff split the monolithic 19th century immunology into cellular and humoral; then came another schism, into innate and adaptive.¹² Now there is the recognition that adaptive immunity as purely an attribute of vertebrate animals including humans is dependent on the ancient innate arm of the immune system. Now the three essential characters especially for human immunity include, in the broadest terms, the ever-present phagocyte in all its guises (our ancient ancestor), and the T cells and B cells, newcomers in the evolutionary sense. Human bone marrow, nearer to the frogs’ than most fish, is an incubator of the source of cell machinery, the millions of drivers of our existence.

We are witnessing a resurgence of interest in and use of cures or medicinals derived from natural sources.¹³

Hippocrates, the father of medicine (who lived between 460 B.C. and 377 B.C.), found early historical records (first forerunners of journals!) that revealed treatment of pain including the use of powder derived from the bark and leaves of the willow tree; this helped heal headaches, pains and fevers. Much later, by about 1829, scientists discovered that the compound called salicin in willow plants relieved the pain. There is currently an international interest and surge in sales of alternative therapies largely from natural products as an attempt to fashion “cures” that are tailored and personal, fit for each individual. This somewhat less costly approach to medicine comes at the right time in history when the resources for medical care are skyrocketing and the desires of those with chronic diseases are greater than perhaps ever witnessed in the past. We are living longer and this is accompanied by the appearance of certain metabolic diseases as well as those of the elderly. Even type two diabetes threatens the adolescent—a situation that was unheard of during my teen years! Not the lack of medical care but a misappropriation of food and use of the body as a machine. We need a more scientific approach that seeks to reveal evidence-based analyses.¹⁴

What will *JECM* capture as it contributes to the seeming onslaught of biomedical journals? Founding Editor, President Wen-Ta Chiu, aims to exert a most positive influence. He is the President of the Asia-Pacific Academic Consortium for Public Health (APACPH) and other societies (Academy for Multidisciplinary Neurotraumatology, etc.). The APACPH consists of 64 universities from 21 countries. In 2009, the APACPH Annual Conference will be held in Taipei, in December 3–6. There will be five workshops within a 3-day program; there are most likely about 700 abstracts (not including invited speakers and workshops). This should provide a most convenient and inspiring venue in which to unveil *JECM* with every hope that it will inspire the submission of high-quality full original papers (reviews, commentaries, experimental and clinical papers) to *JECM*. Almost simultaneously, we hope that *JECM* will assume the position of best journal in the Asia-Pacific region.

References

1. Gluckman P, Beedle A, Hanson M. *Principles of Evolutionary Medicine*. Oxford: Oxford University Press, 2009:312.
2. Cooper EL, Brazier MAB (eds). *Developmental Immunology: Clinical Problems and Aging*. UCLA Forum in Medical Sciences. New York: Academic Press, 1982;25:321.
3. Cooper EL (ed.). *Stress, Immunity and Aging*. New York: Marcel Dekker, Inc., 1984:336.
4. Cooper EL. *General Immunology* (Japanese Translation). Japan: Nishimura Co. Ltd., 1990:324.
5. Cooper EL, Nisbet-Brown E. *Developmental Immunology*. New York: Oxford University Press, 1993:480.
6. Cooper EL, Wright RK (eds). *Aspects of Developmental and Comparative Immunology II. Proceedings of the 2nd International*

- Congress of the International Society of Developmental and Comparative Immunology*. 1984;(Suppl 3):S280. New York: Pergamon Press.
7. Zapata AG, Cooper EL. *The Immune System: Comparative Histophysiology*. Chichester, England: John Wiley & Sons, 1990:334.
 8. Beck G, Habicht GS, Cooper EL, Marchalonis JJ (eds). *Primordial Immunity, Foundations for the Vertebrate Immune System*. New York: New York Academy of Sciences, 1994:376.
 9. Beck G, Sugumaran M, Cooper EL (eds). Phylogenic perspectives on the vertebrate immune system. In: *Advances in Experimental Medicine and Biology*. New York: Kluwer Academic/Plenum Publishers, 2001:484.
 10. Cooper EL, Beschin A, Bilej M. *A New Model for Analyzing Antimicrobial Peptides with Biomedical Applications*. Amsterdam: IOS Press, 2002.
 11. 21st Century Medicine. *Scientific American*, 2006.
 12. Cooper EL. From Darwin and Metchnikoff to Burnet and beyond. *Contrib Microbiol* 2008;15:1–11.
 13. Cooper EL, Yamaguchi N (eds). Complementary and alternative approaches to biomedicine. In: *Advances in Experimental Medicine and Biology*. New York: Kluwer Academic/Plenum Publishers, 2004:546.
 14. Cooper EL. Complementary and alternative medicine, when rigorous, can be science. *Evid Based Complement Alternat Med* 2004;1:1–4.