ON THE RIGHT TRACK

By this time the readers will all have realized that *Laser Therapy* is on the march, and determined to finish off this year not only in style, but also completely back on course! After our initial teething problems, thanks to a tremendous effort from both the editorial and the journal production staff, the Publishers have succeeded in producing all of Volume 2 in the unbelievably short space of 18 weeks, and then gone on to cap that by getting Volume 3 out too. It is all too easy to centre our thoughts on *Laser Therapy*, and forget that John Wiley publish 'one or two' other journals: over 50 in the medical field alone, from a grand total of well in excess of 200 journals. I am proud that *Laser Therapy* can now take its rightful place in the Wiley line-up. Of course we cannot publish a journal without papers, and I would like to take this opportunity to thank all those of you who have taken the time and trouble to present papers for publication. In Volumes 1 and 2 alone, 58 papers of various types were presented, not counting the Editorials and the 'Tropical Laser '90' abstract edition. I would urge you please to keep *Laser Therapy* in mind when considering a journal to which to submit your work, whether clinical or experimental, in all of the fields of photobioactivation.

Global attention is focused these days on the 'greening' of our earth: on ecological and environmental issues: on the possible regeneration of the ozone layer, and on the production of oxygen we take so much for granted (for example, three trees are necessary to provide oxygen for just one of us to survive). Without light, photosynthesis could not occur, the process by which green plants utilize the energy of sunlight and their inherent chlorophyll to turn carbon dioxide and water into carbohydrate, giving off molecular oxygen in the process. In our rivers, lochs (a Scots word learned from *Laser Therapy's* International Editorial Coordinator) and seas, aquatic plants do the same for the water they thrive in. I would therefore like to dwell briefly in this editorial on what I dare to call *photoenvironment* and *photoecology*.

Many of us still remember the photochemical smogs of the 60's, still encountered, though fortunately rarely, in the U.S.A. and here in Japan. That is an example of a negative impact of light on the environment. As I always start off any presentation on low reactive-level laser therapy (LLLT), excessively strong light of the sun can turn the green earth into a desert, but moderate sunlight bathes and supports plants, and gives colour to fruit. Light however is not only a source of free energy (photosynthesis), but also a source of *information*: (Pratt, L. H. and Cordonnier, M-M. [1989]: Photo-

morphogenesis. *The Science of Photobiology*, (ed. Smith, K. C.) pp. 273-304. Plenum Press, New York). The information carried in light is split into four independent facets: the quantity, quality, asymmetry and periodicity of the incident light are combined in what Pratt and Cordonnier refer to as photomorphogenesis, being the *genesis* or development of the shape and organization (*morph*) of an organism as affected by light (*photo*). For example, the melanogenetic response of human skin cells to blue and ultraviolet light is an example of a light-mediated change of form. The cells have received the information contained in the incident light at particular doses and wavelengths, and responded appropriately. This concept of photomorphogenesis is very important for the human photoenvironment, encompassing all kinds of photobioactivation in a mutually-related series of cycles. Thus I wish to continue to encourage articles on botanical and zoological research into light-mediated actions and reactions. I never wish to ignore the subtitle of this journal '...of low level laser therapy and photobioactivation,' and we on the editorial team would welcome more articles on that broad field. Professor Kendric Smith, of Stanford University, California, showed very clearly in his keynote address at the ILTA Okinawa meeting in October 1990, that the fledgling fields of photobioactivation and laser therapy must be very firmly founded on the well-established photobiological subsets of photophysics, photochemistry and photomedicine. In order to get credence for laser therapeutic applications and research in bioactivation, we must use the same painstaking scientific approach as these subsets already mentioned.

Light analytical systems such as spectrometry must be used to identify accurately the components of any therapeutic light source. A spectrogram will allow the researcher instantly to access these components, and to classify the light as coherent or noncoherent, thereby allowing some inferences to be made as to the differences between coherent and noncoherent photobioactivation. In *Laser Therapy*, and of course in the ILTA and all national societies, we must research these differences methodically, and I welcome any papers on this important aspect of our photobiological subspecialty, with any thoughts that readers may have on the possible impact of LLLT and photobioactivation on photoecology, the photoenvironment, and indeed any of the life sciences.

What's in a Name?

At the time of writing I have just returned from

the U.S.A., where I was attending the 11th meeting of the American Society for Lasers in Medicine and Surgery (ASLMS) in San Diego. I was at the first meeting, also in San Diego, in 1981, and it is interesting to see how the focus of the meeting has gradually enlarged. A full report on the meeting, and in particular the 'biostimulation' session, will appear in *Laser Therapy*. But perhaps even more valuable than the session as a whole was the open forum which Programme Chairperson Dr Juanita Anders managed to hold at the end of the formal paper session. Once again the thorny issue of what to call ourselves arose, and various terms were put forward. The 1988 Gordon Conference agreed term of *photomodulation* was suggested, as was our own *photobioactivation*. However, it was (negatively, I think) proposed by Dr. David Harris that biostimulation we are, and biostimulation we shall remain. As long as that term remains, so does the stigma attached to it by 'serious' researchers, as mumbo-jumbo, hocus-pocus nonscientific etcetera, etcetera.

After considering all the names, I am still convinced that *photobioactivation* encompasses both the *stimulatory* aspect of increased fibroblast activity in wound healing, accompanied at the same time by the *inhibition* of collagenase activity. It also encompasses bioactivation both by laser and other light sources. I therefore urge you all to consider both the scientific and etymological thoughts behind our choice (and John Wiley's choice) of this word to represent best the general scientific field of which LLLT is the clinical part. Having said that, *biostimulation* is certainly to be preferred to *low power laser* which I note is being used to name the bioactivation session at the ninth congress of the International Society for Laser Surgery and Medicine, in Anaheim November 2nd-6th this year. I hope to see you all there!

Toshio Ohshiro
Editor-in-Chief