



Preface

Under the chairmanship of Professor Urs von Stockar (EPFL, Lausanne), the Organising Committee for the 10th Conference of the International Society for Biological Calorimetry (ISBC or ISoBioCal) had a natural choice for the venue of the meeting, Monte Verità, high above Ascona and overlooking Lake Maggiore in the Canton Ticino, Switzerland. The Lake was much loved by Lord Byron and the Centre is certainly a candidate for those who feel the same way as the poet expressed in *Childe Harold's Pilgrimage*,

*I live not in myself, but I become
Portion of that around me; and to me,
High mountains are a feeling, but the hum
Of human cities torture.*

Many of us probably spent too much time appreciating the scenery and soaking in the unique, almost loto-phagous, "air" of Monte Verità with its striking cultural heritage and modernist tradition. Paul Klee was a visitor in its first golden years and so I even wore a tie with a design inspired by his *Unstable Equilibrium*. This aside serves as an introduction to the topic of the conference – Thermodynamics of Living Systems. For most of us this means the "non-equilibrium" variety!

Two hundred years before this conference, Alessandro Volta published his paper on the discovery of methane when he was boating on the Lake. Certainly, many of the presented papers "charged" us with enthusiasm and more than one or two metaphorically "burned brightly". This description applies perfectly to those who gave the two named lectures.

Professor Ingolf Lamprecht was honoured by the Society with the presentation of the Lavoisier Medal. The qualifications for this award have been detailed in *Thermochimica Acta*, Vol. 219, p. ix, but the condition which reads that, in choosing the recipient, the Committee "must lay particular emphasis on innovative

developments in theory, technique and application which further advance the potential of heat measurements to solve fundamental problems in biology", fits Ingold to a tee! Much was written about him in his Festschrift volume [*Thermochimica Acta*, 250 (1995), xv–xxii]. Suffice it to write that Ingold gave a typically erudite and intellectual talk on the thermogenic flowers of the sacred lotus, *Nelumbo nucifera*, in which the scientific discourse on heat production was laced with egyptological references and reminders of the flower as a symbol in Hinduism and Buddhism! As Homer wrote in *The Iliad*

Always to be best, and to be distinguished above the rest.

At a conference planning meeting, the Committee discussed the fact that we ought to recognise, at appropriate times, the contribution to our studies of those who, quite inexplicably, have not spent their life devoted to calorimetry, but whose work has had an important influence on our thinking. In mind was the research of Edwin "Ted" Battley whose approach to a thermodynamic understanding of microbial growth, largely by indirect calorimetry, has been central to our knowledge of this topic. In the thoughtfully patrician way typical of an Ivy League schooling (Harvard and Stanford), Ted has eschewed NET and all that fancy stuff, preferring the classical approach of equilibrium thermodynamics in the closed system of a special fermenter. He claims there is no need for it! When his seminal papers of 1960 on yeast growth "hit" the bookshelves, most scientists were impressed and thought that this was the start of a vital new approach. In fact, there were only a few excursions into this field after that, and many newcomers were unaware of the work until the publication by Wiley of *Energetics of Microbial Growth* in 1987. Pleasantly surprised by the reception of this volume and the interest it generated in members of our Society, Ted, a WW2 veteran of the Battle of the Bulge (among other campaigns!),

embarked upon a whole series of papers on the thermodynamics of growth in *Escherichia coli* and *Saccharomyces cerevisiae* at an age when many would have retired to less strenuous pursuits than the meaning of entropy changes in microbial systems with all its controversy!

The next problem for the Committee was to decide what to call such an occasional Award. Many of us have both admired and been amused by the (literally!) gigantic calorimetric experiment of Dubrunfaut, in 1856, on yeast fermentation which, more seriously, was probably the first measurement of microbial heat production. What better a name to put to our new Award! Few of us knew anything about this Frenchman, other than about this one investigation, but we need not have worried because, absolutely typical of the man, Ted decided to find out more about the emperor of fermenting cultures! Elsevier was happy

to publish a short biographical note on Ted's research into the life of a man who, it turns out, was of considerable substance. A similar description can be made of the paper (review!) written by the first recipient of the Dubrunfaut Award, Ted Battley,

*Lustem et tenacem propositi virum
Non civium ardor prava iubentium,
Non vultus instantis tyranni
Mente quatit solida.*

Horace, *Odes*, bk. 3.

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