



# from IUPS

## Looking for inspiration? Kyoto is the place to be in the summer, 2009

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In 1888, the British Physiological Society and Professors of Physiology all over UK initiated the international congresses of physiology with the following proposals ;

'It is suggested that the International Meeting of Physiologists should be held at regular intervals, with the object of promoting physiology through interchange of ideas, mutual criticism, and of affording opportunities to workers in our science of knowing each other personally'. A year later, the first international physiology Congress was held in Basel.

Participants were mostly Europeans with the exception of few Americans. No one from Asia and other Continents attended this meeting.

One of the most romantic events in the history of IUPS Congresses, in my opinion, happened in Boston Congress (1926). Prior to this meeting, at the previous congress to be exact, Professor E Starling and Professor AV Hill of UK suggested the idea of boarding a ship to USA.

From Europe, a single-class Boat was chartered to take the European Physiologists across the Atlantic. They hired the SS *Minnekahda* which was a triple-screwed steamer of 17,281 tons.

Around 400 physiologists and their families

were on board. And about 200 American young secretaries took the same ship. Life on board must have been full of excitements. At one dinner speech, Professor Johansson expressed "The experiences from the past days appear to many of us like a voyage in Wonderland. The most ingenious of us have even expressed their astonishment in scientifically formulated questions. The best example would be 'How will it be possible for highly cultivated people to live without lectures ? ' "

Also, there were 9 Nobel-prize winners on board.

After 40 years, the 23<sup>rd</sup> IUPS Congress was held in Tokyo, Japan (1965). This was the first IUPS Congress ever held in Asia. The total number of active participants was 2,829 and amongst them 823 was Japanese.

An important feature of the Tokyo Congress was that the Governor of Tokyo happened to be Dr. Ryotaro Azuma, formerly Professor of Pharmacology at Tokyo University. Moreover, Dr. Azuma was a postdoctoral fellow of Professor AV Hill in London. Not surprisingly, governor Azuma gave a huge reception at Tokyo Metropolitan Festival Hall in Ueno Park.

Another 40 years later since 1965 IUPS Tokyo Congress, the Japanese Society for Physiological Sciences succeeded in its bid to host the 2009 IUPS Congress in Kyoto. So, this would be the second IUPS Congress held in Japan.

Inevitably for IUPS, the financial problem became a critical issue. It suffered greatly after the 1997 St Petersburg Congress. To avoid a similar financial crisis, IUPS had to choose the host country with suitable infrastructure or with plenty of governmental support. For countries which have small societies or inadequate support from the government are no longer able to host IUPS Congress any more.

Another issue is the disagreements between the leading nations that put the academic advancements on top-priority, with the rest of the nations favoring the all-around participations. Scientists from the leading nation consider 'scientific excellence' as the most important criterion for determining the topic and the speakers of the congress. This is completely agreeable but, the scientifically developing countries are concerned that without the encouragement of equal participation, the gap will only widen. Therefore, the conflicts between the two parties are inevitable. IUPS must intervene to find a resolution on this matter.

Due to the segmentation and commercialization of big conferences, the level of interest in the IUPS congress fell dramatically in recent years. There are trends where people tend to prefer conferences that are specialized in one area such as neuroscience, biophysics and heart. The tendency gets only stronger in cutting-edge fields especially those who are regarded as the pioneer researcher.

Maybe the rise of the reductionism approach is

the main reason behind such transformation, blinding us to see the big picture and blocking communication between areas of our science. In the physiological sciences, where the balance and maintenance of the whole-organism is essential, a separate direction is needed. That is why this 2009 IUPS Kyoto Congress could be the vital turning point for all of us.

Kyoto has a lot of temples and palaces. Many of them are UNESCO cultural treasures. Professor Denis Noble of Oxford University kindly provided an English translated version of the article written by Korean monk, Won Hyo 元曉 (617-686, Shilla Dynasty, 新羅).

The text below comes from the Kūmgang sammaegyōng ron 金剛三昧經論 (quoted in Kim, J-I (2004) Philosophical contexts for Wōn-Hyo's interpretation of Buddhism. (Seoul: Jimoondang International) where he uses a seed and the fruit to illustrate the application of four-cornered logic to illuminate the concept of being/non-being, a major aspect of oriental thought.

"The phenotype (fruit) and the genotype (seed) are not the same, for they have different shape.

However, they are not different.

Besides the genotype (seed) and the phenotype (fruit) are not annihilable,

for the phenotype (fruit) is produced from the genotype (seed).

However, they are not eternal,

for there is no genotype (seed) when it is in the state of the phenotype (fruit).

The genotype (seed) did not enter into the phenotype (fruit),

for the genotype (seed) does not exist when it is in the state of the phenotype (fruit).

The phenotype (fruit) does not extinguish the genotype (seed),

for the phenotype (fruit) does not exist when

it is in the state of the genotype (seed).

Since it neither enters nor is extinguished, there is no arising.

Since it is neither eternal nor annihilable, there is no ceasing.

Since there is no ceasing, non-being cannot be proclaimed.

Since there is no arising, being cannot be proclaimed.

Since it is free from the two extremes [being and non-being],

it cannot be stated as both being and non-being. Since it does not correspond to the middle,

it cannot be stated as neither being nor non-being.

Therefore it is stated that it is free from the four perspectives and cut off from verbal expression.

As such the *amala* fruit transcends language.”  
[次明八不. 非直法爾 唯前四不 亦乃具絕一異等八.

所以然者 菓種不一 其相不同故.

而亦不異 離種無菓故. 又種菓不斷 菓續種生故.

而亦不常 菓生種滅故. 種不入菓 菓時無種故.

菓不出種 種時無菓故.

不入不出故不生. 不常不斷故不滅. 不滅故不可說無. 不生故不可說有.

遠離二邊故 不可說爲亦有亦無. 不當一中故 不可說非有非無.

故言離諸四傍 言語道斷. 阿摩勒菓 如是絕言.

法忍之心 亦不異此. 故言無生心性 亦如是等也.]

Professor Noble replaced seed with genotype and fruit with phenotype to explain how this text, although written over 1000 years ago, relates to modern systems biology. Prof. Noble explained “In this form, his text could then appear almost as a modern text of systems biology! Anyone who understands this text will see that a strict distinction between the replicator (the genome) and the

vehicle (the phenotype), which is the fundamental basis of the Selfish Gene theory, can illuminate only a part of the relation between the two. They are also totally interdependent”.

He also shows how a systems approach to biological science leads naturally to the concept of anatman, no-self (yet another major feature of oriental thought), and to a better understanding of the relation between the microscopic and macroscopic views of the world.

The Buddhist tradition has used a completely different route to the no-self idea : that of direct personal experience through meditation. Professor Noble writes “As I understand it, anatman, the idea of no-self (無我), is an *experiential* fact. Ultimately, however, our understanding of science and our direct experiences of ourselves must coincide. Whether we have reached that point of coincidence with the development of systems biology is a fascinating question.”

Prof. Noble will give an opening Plenary lecture on the future of Physiology in the 2009 IUPS Kyoto Congress.

Away from endless lectures, headaches with funds and journal articles waiting to be written, why not spend a week in Kyoto for a breath of fresh air? Its beautiful surroundings will be exquisite enough to help you recover from everyday stress. Here is your opportunity! Visit Kyoto for IUPS Congress in 2009.

A week in Kyoto will be a memorable experience both physiologically and philosophically. Join the 2009 IUPS Congress for the exchange of brilliant ideas in a stress-free environment. Probably you could have direct experience yourself of the no-self state.