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Raku-Yu

Kyoto  
University  
Newsletter



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**Editor's Notes**

*Rakuyu* is Kyoto University's English-language newsletter, published twice a year, in September and March. Publication began in March 2002 and this issue marks the eleventh issue.

Kyoto University has marked fiscal 2006 as the one hundredth anniversary of the birth of Dr. Hideki Yukawa and Dr. Sin-Itiro Tomonaga, Japan's first and second Nobel laureates, since the university nurtured both of these doctors. There have been a number of events to mark their great achievements. This issue is a part of these events, as shown in its cover and first Features article. In addition, we highlight Dr. Kiyoshi Ito, Professor Emeritus of Kyoto University, who in August 2006 received the inaugural Carl Friedrich Gauss Prize for Applications of Mathematics.

Other articles focus on research projects at Kyoto University, our new facilities, and researchers' essays.

Please send us your thoughts and ideas to further improve this newsletter for overseas audiences.

**Former Physics Laboratory of the Third Higher Middle School**

Completed in 1889, designed by Hanroku Yamaguchi and Masamichi Kuru

The brick building to your far left as you enter the main gate of the main campus is the former physics laboratory. When the Third Higher Middle School moved from Osaka to Kyoto, this building was constructed as an educational facility for the sciences.

The building was extended a number of times after the founding of Kyoto University, and was used to hold physics classes by the Faculty of Science, and fuel chemistry classes by the Faculty of Engineering. This is the oldest of Kyoto University's current facilities that were in use before the university was founded. The simple contrast



Memorial photograph taken in 1927, on the occasion of Dutch physicist Dr. Laporte's visit to the university. Dr. Yukawa is in the center of the back row. The eighth person from the right in the row before the back row is Dr. Tomonaga.



A photograph of Dr. Albert Einstein during his visit to Kyoto University in 1922. Dr. Yukawa, who was only a junior high school student then, mentions in his biography, "Although Dr. Einstein's visit drew a great deal of public attention, I was not very interested."

between the red brick walls and tile roof creates a feeling of warmth, and gives us a sense of how the university looked when it was founded.

Because Kyoto University's most distinguished alumni, Nobel Prize winners Dr. Yukawa, Dr. Tomonaga and Dr. Fukui studied and worked in this building, the building has earned the nickname "Nobel Prize Hall".



Lecture theater where Hideki Yukawa and Sin-Itiro Tomonaga attended lectures.

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**A Note on Order of Names**

As a general rule, names appearing in *Raku-Yu* are written in given name/family name order.



Raku-Yu means to respect, treasure, and enjoy one's friendship.

This name was taken from the assembly hall called "Raku-Yu Kaikan" that commemorated the 25th anniversary of the founding of Kyoto University.

**Masato Kitani** Born in Hyogo Prefecture in 1954, Masato Kitani entered the Ministry of Education after graduating from Kyoto University Faculty of Law in 1976. Up until 1987, he was in the Elementary and Secondary Education Bureau where his work dealt with textbooks, the schools curriculum guidelines, and regional education boards. For the three years after 1988, he served as first secretary at the Permanent Mission of Japan in Geneva. There his work involved participating in the international conferences and negotiations of specialized UN organizations, such as the ILO (International Labour Organization) and WIPO (World Intellectual Property Organization), and GATT (General Agreement on Tariffs and Trade). After returning home he was in the Agency of Cultural Affairs, where he mainly dealt with the formation of copyright rules. Following this, he has worked in the fields of higher education and academic administration doing work such as student exchange, medical education and university reform. In October 2006, he started in his new role as Executive Director and Vice President at Kyoto University. He is charged with the responsibilities of general affairs, human resources and public relations. He has also taken on the special charge of reforming administrative processes, with the objective of bringing an overall coordination to the university's administrative affairs. In particular he is looking to create the motivational energy for revolutionizing employee attitudes through sharing information, and dialog with junior- and middle-level employees. His ambition is to make Kyoto University a global university, in part by improving the university environment. He says that after a 30-year absence from Kyoto he has plans to enjoy an exciting life and do some things he never had time to do as a student.



## Why the Kyoto University Alumni Association has been needed?

The inauguration of the Kyoto University Alumni Association was held in pleasant autumn weather at the Kyoto University Clock Tower Centennial Hall on November 3, 2006. The event was orchestrated to coincide with a Home Coming Day, which included a tour of on-campus historic buildings where current students showed the university's alumni and alumnae around. With Kyoto University having been founded in 1897 and steeped in tradition, many may wonder why an alumni association is being established now. Kyoto University is a large university with ten faculties, and each faculty has had its own alumni association. However, up until now, there has not been an alumni association for the entire university. In providing an explanation for this, some point to the strong independent streak of each faculty as well as the school atmosphere of respect for individual autonomy. Certainly, this tradition has contributed to producing a wealth of human talent rich in original thought as exemplified by Kyoto University's numerous Nobel Prize laureates, and producing original researches. It is therefore important to maintain this tradition. And so this begs the question; why establish an alumni association now?

In 2004 Kyoto University, as part of Japanese university reform, became incorporated along with other national universities. While this serves to enhance independency and autonomy in universities, it has also dealt universities with the challenge of being cast out into a globally competitive environment. Kyoto University also needs to place a strong emphasis on its own identity and gain the understanding and support from a greater number of people as well as entice exceptional human talent from around the world. The people who form the nucleus for this are not just currently enrolled students, teachers and other staff members, but also our alumni and alumnae. Although the university looked after them while

enrolled at university, once they departed from university, it has not paid enough attention to them. From now on, the university will continue to provide them with information and offer more worthwhile communication with the university such as through seeking opinions on the university. At the same time, we are also looking to positively support the formation of networks between alumni members. This is why the Kyoto University Alumni Association has been formed.

While the Kyoto University Alumni Association will have the character of a loose amalgamation of alumni associations of specific faculties and regions, the organization will also allow membership as individual members. From now on, the Home Coming Day will be a permanent annual event, and we also expect to further enhance the alumni website, provide information in the form of an email magazine and support the alumni activities of individual regions and groups. As a university with a commitment to contributing to the world and humankind, Kyoto University believes it is important to create an international alumni network and looks forward to receiving everyone's understanding and cooperation. Lastly, the web addresses related to the Kyoto University Alumni Association are provided below; please take the time to visit.

To visit the Kyoto University Alumni Association website:

<http://www.kyoto-u.ac.jp/alumni/index.htm>

To sign up for the email magazine:

[http://www.kyoto-u.ac.jp/m\\_magazine/mm\\_index.htm](http://www.kyoto-u.ac.jp/m_magazine/mm_index.htm)

Masato Kitani  
Vice-President of Kyoto University

木谷雅人

## The chimpanzee mind: studies in the field and the laboratory

### We are 98.77% chimpanzee

Recent advances in the study of the human and the chimpanzee genome have revealed just how close the two species are. Differences at the level of the DNA are as low as 1.23%. In other words, we are 98.77% chimpanzee. The genomic difference between the two species is comparable to that between horses and zebras, who differ by about 1.5%.

The human mind is the product of millions of years of evolution, just as the human body, human society, and the human genome are. *Homo sapiens* is one of roughly 220 extant primate species. Comparisons between humans and other primate species present us with perhaps the best means to understanding human nature, allowing us to speculate on a number of questions. What is uniquely human? Where did humanness come from?

I have been studying chimpanzees both in Africa and in Japan. Fieldwork and laboratory work need to go hand in hand to provide us with a complete picture of the life and mind of the chimpanzee. I have called this discipline Comparative cognitive science (CCS). CCS aims to explore the evolutionary origins of human behavior and the human mind by comparing humans with closely related species. The study is thus characterized by the comparative method. Human subjects and chimpanzee subjects participate in exactly the same tests, using the same apparatus, and following the same procedure.

### 30 years of the Ai project

A community of 14 chimpanzees of 3 generations inhabit an enriched, semi-natural environment at the Primate Research Institute of Kyoto University (KUPRI). KUPRI is located in Inuyama,

near the city of Nagoya in central Japan. My research partner here is named “Ai”, a 30-year-old female chimpanzee. I have been working with Ai since 1977, when she was just 1 year old. First, my colleagues and I focused on language-like skills in chimpanzees. We taught Ai to use visual symbols to name objects and colors, and introduced her to Arabic numerals to represent number concepts. At the age of 5, she was able to name objects, their color and number, by touching the appropriate symbols printed on the keys of a computer terminal. Follow-up studies by my colleagues and myself have covered various topics in cognition; visual acuity, form perception, face recognition, auditory-visual cross-modal matching, motion perception, short term memory, and so forth.

The postnatal growth of the brain follows roughly the same path in humans and chimpanzees. The neonatal brain triples in size until it reaches adult levels (3.26 times larger in humans and 3.20 times in chimpanzees). This means that chimpanzees are likely to undergo developmental changes in cognition much like humans. Humans learn a variety of things through experience during postnatal development. So do chimpanzees. This provides us with a rationale for studying not only cognition in chimpanzees, but also, specifically, cognitive development following birth.

We developed a new way of studying cognitive development in chimpanzees (Matsuzawa et al., 2006, published by Springer Verlag). The method is called “participation observation”. We focus on chimpanzee infants raised by their biological mothers. The latter have a well-established long-term relationship with human researchers, as a result of which we can test the cognition of infant

chimpanzees with the assistance of their mothers. In the year 2000, KUPRI saw the birth of three chimpanzee infants, all of whom are being raised by their mothers.

A series of cognitive experiments have revealed many similarities between humans and chimpanzees. For example, chimpanzee neonates, just like human neonates, show neonatal smiling. Newborns smile spontaneously with the eyes closed. Such neonatal smiling eventually turns into social smiling – with the eyes open – at the age of 3 months. This change is common to humans and chimpanzees. Neonatal facial imitation – in which neonates imitate their mother’s facial expression, such as mouth opening or tongue protrusion – is also shared between the two species. Chimpanzee infants prefer a straight-ahead gaze over an averted gaze, and can utilize gaze cues. Mutual gaze is also marked between mothers and infants in both species.

Infant chimpanzees begin to spend time away from their mothers, initially for brief periods, at around 3 to 4 months old: They start exploring the outer world, and interacting with other members of the community. Chimpanzee infants first show object-object combinatory manipulation, a precursor of tool use, at the age of 10 months, and first begin to use tools at around 2 years of age. In these and other skills, we continue to follow the infants’ cognitive development.

### Field study of the chimpanzee mind

A community of 12 chimpanzees of 3 generations inhabit the forests at Bossou, Guinea, West Africa. KUPRI researchers have been studying these chimpanzees for 30 years. Bossou chimpanzees are well known to use a pair of stones as hammer and anvil to crack open nuts. Since 1986, I have been visiting Bossou once a year to explore developmental changes in tool use technology. The technique is typically mastered at the age of 4 to 5 years, but it takes another 5 years for it to reach the refined level of adults.

We have also found many other interesting examples of chimpanzee tool use at Bossou, including fishing for ants with a stick, using leaves for drinking water, scooping algae floating on a pond with the help of a flexible stick, and using



Outdoor compound of chimpanzees in KUPRI



Triadic relationship of Matsuzawa, Ai, and the baby

a palm petiole as a pestle to pound the top of the tree to obtain the juicy fiber inside. These tools are essential for the chimpanzees' survival. Our long-running studies have illuminated many interesting aspects of these behaviors, such as the existence of critical periods for the learning of the skills, the possession and transportation of tools, and so forth.

Our combination of laboratory and field studies have revealed a unique mode of social learning in chimpanzees. Referred to as "Education by master-apprenticeship", this mechanism is characterized by three main behavioral attributes: 1) Infants' prolonged exposure to adult behavior based on the strong mother-infant bond, 2) Lack of active teaching (no formal instruction, and no positive/negative feedback from the mother), and 3) The infants' intrinsic motivation to copy the mother's behavior.

Each chimpanzee community in the wild has its own unique set of cultural traditions. Through education by master-apprenticeship, chimpanzees seem able to pass knowledge and skills from one generation to the next, thereby maintaining their community's cultural repertoire.

### SAGA: Conservation and welfare

Chimpanzees are an endangered species. They inhabit the tropical forests of Africa, where their numbers have decreased from around 600,000 in the 1960s to less than 200,000 at present. There are three main reasons for this dramatic drop in numbers: deforestation, illegal hunting,

and contagious diseases such as Ebola and influenza. All three are the result of human activity.

There are 348 chimpanzees housed in 56 facilities (mainly zoos) in Japan. One third of zoos keep only one or two chimpanzees, often in smaller-than-adequate spaces. Chimpanzees need to live with parents, siblings, and other conspecifics, under conditions that ensure high levels of welfare.

We launched SAGA (Support for African/Asian Great Apes) in 1998. SAGA is a consortium of those persons and NGOs who are concerned about the great apes – chimpanzees, gorillas, and orangutans. SAGA has promoted conservation in the species' natural habitats, welfare and enrichment in the captive environment, and furthering scientific understanding through non-invasive techniques.

Chimpanzees have been used for biomedical research on, for example, AIDS, hepatitis, and malaria. There are still more than 1500 chimpanzees kept in biomedical laboratories across the USA. In Japan, three pharmaceutical companies have in the past used chimpanzees for biomedical research. However, all invasive studies ceased from October 2006, thanks to the SAGA movement. We are now setting up a sanctuary for those 79 chimpanzees who were once the subjects of biomedical research. I want to follow my dream: One day, I hope to see humans and chimpanzees living together – as neighbors and evolutionary cousins.



### Tetsuro Matsuzawa

- Born in 1950
- Field of specialization: Comparative cognitive science
- Completed masters program at Graduate School of Letters, Kyoto University
- D.Sc., Kyoto University
- Director, Primate Research Institute, Kyoto University
- URL <http://www.pri.kyoto-u.ac.jp/>

**Today, thanks to the progress of science, it is increasingly acknowledged that all life on this planet, including human life, is linked together by the common language of DNA. Through my research on chimpanzees, I am striving to broaden people's understanding of primates, and all life in general.**

Prof. Matsuzawa, through his cognitive research of chimpanzee Ai over a period of nearly 30 years, is probing the evolutionary origins of the mind and behavior of human, *Homo sapiens*. He is internationally renowned as the pioneer of a new research field called 'comparative cognitive science'.

The starting point of Prof. Matsuzawa's research was to philosophically question what it is for a person 'to know'. In his quest for an answer, he enrolled in the philosophy department of Kyoto University's Faculty of Letters in 1969. Following on from this, he conducted research on human vision and then on brain functions in rats. His research led him to conclude that if he started research on chimpanzees whose genetic makeup is the closest to humans, he could better understand the mind and nature of human cognition.

Prof. Matsuzawa is also a skilful mountain climber, and has climbed the peak of the eight-thousander Mt. Shishapangma. While a university student, he belonged to the mountain climbing club and spent about a third of the year trekking mountains. He says he acquired through mountain climbing much of the grounding required for a researcher, such as the desire to strive for originality to explore untrodden ground, and the self-discipline necessary for the achievement of goals.

In 2000 when Ai's son Ayumu was born, Prof. Matsuzawa's interest was broadened to consider how chimpanzees hand down knowledge and technology to the next generation. Since 1986 he has also devoted a lot of his time to helping restore the savannah and regenerate the forests in Bossou, West Africa, where he has been conducting research into the lives of chimpanzees. Prof. Matsuzawa is warmly observing, chimpanzee, man, and our planet with equal devotion.



Stone tool use by chimpanzees at Bossou, Guinea

## j.Pod – Developing Kyoto University intellectual property of a timber construction system supporting the consumption of local products

There are two buildings of timber construction at Yoshida Campus, Kyoto University. These rectangular box-like structures are called "j.Pods". The primary construction material is cedar harvested during forest thinning. Although these structures don't contain any thick pillars or beams, they are nevertheless very earthquake resistant. This timber construction, which is full of new possibilities regarding structure, material and technical functionality, has already started being used for prefectural project housing in Hyogo prefecture and is well on its way to being commercially widespread. It is a new building system in the tradition of Japan's timber construction culture that is not only suited to today's Earth conscious age but also oriented towards the consumption of local products.

If you were to gaze upon the outward appearance of the j.Pod – this rather enigmatic box made from timber – you probably would get an idea of this. The structure is actually simple. First seven rectangular wooden frames (2.7 m high and 3.6 m across) are lined up in an array with about 45 cm space between each frame. As this structure resembles a rectangular ribcage, these frames are called rib frames. The floor, walls and ceiling are then attached and the structure is complete. This is the minimum j.Pod unit and each standard unit has the floor space of a typical six tatami mat sized room. There are probably not many people who would think of a building if they simply heard the name j.Pod. Pod is an English word that originally came from the pod of a pea and which now is also used to mean a small compartmentalized space. The "j" refers to joint, referring to the linkage of the units, Japanese, junction, and some other connotations. By connecting the basic pod unit together you can create larger spaces and also make two-story or higher buildings. These boxes that do not use thick pillars or beams will not collapse in earthquakes that are strong enough to make less earthquake resistant constructions collapse (6 upper on JMA intensity scale).

The reason j.Pod is so strong is because of the rectangular rib-frames. Think for a moment of a rubber hose, or a cane basket. When you apply an external force to these things, their shape will change but they won't break under mild force. This is because they flexibly bend and absorb the force as it is propagated. Wood intrinsically

holds the same flexibility (toughness). This is the property you observed if you stand on a sheet of wood. The j.Pod rib frames take advantage of wood's flexible toughness and apply a clear directionality to the way the force of the structural body propagates thus making it possible to quantify the structure's resistive strength to horizontal forces. As these rectangular frames are produced using straight lumber, it is essential that these frames have joints. It was a significant challenge working out how to make these joints have soft joints just as if there were a continuation of wood. When setting out to make something strong, people tend to try their hardest for fixed rigidity. The thinking behind this is fixing something with metal bolts will achieve a strong structure. However if you create a strong point inside a whole structure, forces that are applied from the outside will be concentrated at these points and even if the bolt is able to resist such a force the wood will break, split and collapse. The j.Pod rib frames are created using a double layer of lumber boards. An L-shaped thin steel plate is sandwiched between the two layers of each corner joint where the butt joint arrangement of each layer is opposite to the other, and on each layer side, 70 nails are hammered in to join the layers. When the nails pierce the thin steel plate, the nails and therefore the steel plate become lodged in the wood layer on the other side of the plate, thus creating a pliable joint and a method of joining that create a single structure with a continuous wood-like flexibility. There are no points that are made particularly strong and therefore there is no weak part, so the entire structure maintains a strong flexible toughness.

Once cities in Japan were timber construction cities where wooden buildings lined the streets. While on one hand a monsoonal climate brings damaging weather such as torrential rain or heavy snow, it has also provided

Japan with the abundant forests that are nurtured by this water. Building homes using this abundant natural forest resource that surrounds our living environment is truly natural and over time we have become proficient in constructing timber buildings that are resistant to typhoons and earthquakes. There have been many strong buildings built without nails or diagonal braces that have not collapsed for hundreds of years. The traditional timber construction technique called nuki which involves joining wood with wood without the use of nails is the archetype for the aspired flexible joining method of the j.Pod rib frame. However, this technique is today only seen in heritage buildings and old private houses, and the cities of timber construction have turned into cities of steel and concrete. The pursuit of building toughness and safety, has led to things becoming concrete construction. Such a turn of events brought with it a sense of unease. With this, came one dilemma for which we felt something had to be done: the current condition of forests in Japan. In Japan there are many mountain forests that are not being thinned and being left unutilized. Traditionally, thinned cedar woods have been used for scaffolding boards on building sites, but metal plates are now being used for this causing less demand and this is confounded by cheap imported lumber that locally harvested lumber cannot compete with. Even if it is harvested, it just causes business losses. Today 80% of lumber products consumed in Japan are imported from overseas. The cedar plantation forests stretching to the top of mountains that once received government support are facing a particularly serious predicament. Plantation



Northern Precinct Kyoto University

Wakayama Forest Research Station

forests that are left untended have trees growing too densely together, preventing adequate light from reaching the trees and causing thin-trunk trees with shallow roots. This issue is not just one of forest health, it also leaves the trees vulnerable to collapsing under torrential rain or typhoon conditions; instances of disasters involving mudslides are not a rare phenomenon. In order to change this situation, we need to establish a sound and practical use for large quantities of cedar trunks of the type harvested during forest thinning, which are currently being left untended in our surrounding mountains. A forest that is not thinned cannot produce the bigger and precious trees. The lumber boards used to make the j.Pod rib frames have a standard size of 36 mm thick, 180 mm wide and 4 m long and are produced from cedar trees ranging in age from 35 to 45 years that are harvested as part of forest thinning. j.Pod has been designed as a construction system that supports the consumption of local products and through building houses using locally grown lumber it will revive the local timber industry and improve the health of the forests and help fortify the region against disasters. Furthermore, procuring lumber from a close proximity reduces the energy consumption of transportation, which means less impact on the environment. The six tatami mat size of the standard j.Pod unit is the same size as the standard unit of temporary housing supplied by the government or local governing bodies to people made homeless through disaster. The key merit of the j.Pod is its quick assembly time. It takes only half a day to set up the rib frame. Including the work before and after, such as the foundation work and the external and internal finishing, it takes only a small number of days for the wooden construction housing to be completed. If local governing bodies were to stockpile locally harvested cedar made into rib frames, and create the

system that would enable supply at the time of a large scale disaster, it would be possible to quickly respond to large-scale emergency housing demands. We believe j.Pod has the potential to offer an environment of wooden surrounds in which survivors, who may have lost loved ones, or who have suffered injuries, can spend their time with as much a sense of security that is possible under the circumstances.

Postscript: Kyoto University's j.Pod building system is a rethinking of construction that returns to a building method suited to the climate and culture of Japan where natural disasters frequently occur. It adds the invention of the rib frame developed by the Kyoto University j.Pod development team to the construction of box-shaped units involving the positioning timber frames in an evenly spaced array, which is a construction technique developed and patented by a collaboration between Japanese structural engineers and British architects. The members of the Kyoto University j.Pod development team are Masami Kobayashi and Hirohide Kobayashi from the Kyoto University Graduate School of Global Environmental Studies, and architectural engineers Kenichi Katagihara, Yoko Masuda, Kazuyoshi Takagi, and John C. A. Barr residing in the UK. Kyoto University j.Pod was recognized as intellectual property of Kyoto University and patented after the successful trial construction through the project related to the Strategic Resource Management of Forest Resources owned by Kyoto University and the Development of Recycling-friendly Timber Construction Building Systems, a 2004 project funded by authority of university president. This was a collaboration of the j.Pod team with Professor & Director Masaru Tanaka and Professor Michiyuki Takeuchi, Field Science Education and Research Center,

K y o t o  
University.



International Seminar House



Hyogo Prefecture Shimizudani Housing Project



### Masami Kobayashi

- Born in 1948
- Field of specialization: Natural Disaster and Human Settlement
- Completed doctoral program, Graduate School of Engineering, Kyoto University
- D.Eng., Kyoto University
- Professor, Graduate School of Global Environmental Studies, Kyoto University

**Good buildings are built to have an interrelationship with their surrounding environment.**

**j-Pod was born from a conversation between, and a fusion of, the forest (ecology) and the city (technology).**

Prof. Kobayashi was born in Tokyo and brought up in Niigata. While studying at Kyoto University, he studied urban design for civil engineering at the Faculty of Engineering and specialized in architecture at the graduate school. With a fascination in the forest, color and interior, the professor knows no boundaries in probing the possibilities of architecture. Consistent throughout his work is his research theme of "natural disaster and human settlement."

While doing field work in Flores Island (Indonesia) in 1979 in an area stricken by a tsunami, he researched the housing conditions of the tsunami victims. This experience left him with doubts towards Japan's humanitarian aid that tended to be focused on the aspects of infrastructure, and changed his approach to modern architecture. For three years starting from 1999, he served as Hyogo office secretariat for the United Nations Centre for Regional Development (UNCRD), which had been set up in Kobe during the reconstruction following the Great Hanshin Earthquake Disaster. There, he continued his research into "what sort of building structures can be created for earthquake victims."

In 2005, a group including Prof. Kobayashi and commercial researchers developed a neo-timber construction. Considering the current condition of Japanese forests, they used lumber normally harvested during forestation thinning for this new construction. It has excellent qualities regarding earthquake resistance, suitability for housing, and short construction period. It is called the Kyoto University j.Pod construction system and is suited to the recycling oriented society of the 21st Century.

Sitting in his favorite laboratory, he comments: "Although underground, the sun shines through and you can open the window and see greenery." With his eyes mischievously glowing as if he has just decided on a terrific next move, he says with youthful energy: "I have just felt connected to the world by gazing upon the beautiful nature through the window."

# Features 1 Yukawa-Tomonaga Centennial Year and the Yukawa Institute for Theoretical Physics



## Yukawa-Tomonaga Centennial Year

One century has now passed since the births of Dr. Sin-Itiro Tomonaga and Dr. Hideki Yukawa (March 31, 2006 and January 23, 2007 respectively) who were Japan's first and second Nobel Prize recipients and who, to our great pride, were graduates of Kyoto University. Kyoto University has decreed fiscal 2006 as a centennial commemoration year for the birth of these great scholars. A range of commemorative events is being held as an opportunity for the university that shaped these two men to recognize their achievement and also to tell their story to the general public.

As the premier commemoration project, the Yukawa-Tomonaga Centennial Exhibition was held from March 26 to May 7, 2006 at the National Science Museum in Ueno, Tokyo, which was held in collaboration with two other universities that the laureates had strong ties with: Tsukuba University and Osaka University. Public response to this exhibition exceeded expectations with more than 41,000 people visiting the exhibition in 43 days. This affirms that even today, many Japanese revere the great achievements of Dr. Yukawa and Dr. Tomonaga. Kyoto University also held a commemorative exhibition at the Kyoto University Museum for about four months from October 4, 2006 until January 28, 2007.

Sponsored by the Yukawa Institute for Theoretical Physics and the Kyoto University Department of Physics, the Yukawa-Tomonaga Centennial Symposium 'Progress in Modern Physics' was held on December 11–13, 2006 at the Shiran Kaikan Inamori Hall. Fourteen notable groundbreakers in the world of physics including four Nobel laureates gave reviews and summaries of development over the past 100 years in the various fields of theoretical physics and talked about developments in the future (Photo).

Yukawa-Tomonaga Centennial Ceremony and Lectures was held at Kyoto University on January 23, 2007. Speaking at the lectures were UNESCO Director General, Koichiro Matsuura, Ryoji Noyori (2001 Nobel Prize in Chemistry), and Frank Wilczek (2004 Nobel Prize in Physics). Also planned are the installation of a Yukawa-Tomonaga Centennial Stone and Panel and the establishment of a Yukawa-Tomonaga Encouragement Fund to be awarded to young researchers who have begun to make creative and innovative achievements in the fields of natural science, humanities, and social science. We are currently calling for donations for the Yukawa-Tomonaga Fund to fund these activities.

## Achievements of Yukawa and Tomonaga

Laureates Yukawa and Tomonaga studied at the First Middle School of Kyoto Prefecture and the Third Higher School and entered Kyoto University together in 1926. This was a time in history when the biggest revolution was occurring in physics since Isaac Newton. This was the time when quantum mechanics, a totally new theory of mechanics for the microscopic world, emerged. Although there were no teachers around them who understood this new physics, and it was completely absent from textbooks, the two tenaciously searched, selected and studied scientific literature and academic magazines obtained directly from Europe. In 1929 after graduating, they remained at university as unpaid junior assistants in order to develop their knowledge. Surprisingly after a short while, they pursued the cutting edge of the world of physics. In 1932, the discovery of neutrons led to the world of the atomic nucleus that consisted of protons and neutrons and was a hundred thousand times tinier than an atom that was a hundred millionth of a centimeter. Dr. Yukawa and Dr. Tomonaga daringly embraced the challenge of trying to unravel these mysteries.

In 1934, Dr. Yukawa published a paper that predicted the

existence of mesons as the source of strong forces inside the atomic nucleus and later he was awarded the Nobel Prize for this. Meanwhile Dr. Tomonaga, who helped greatly in establishing this paper, developed a renormalization theory after the war in order to solve the problem of infinite quantities arising in the field theory through research on the meson theory and developed quantum electrodynamics as an exact science of electrons and electromagnetic fields. Looking back at these feats today, Dr. Yukawa created the new field of particle physics and Dr. Tomonaga carried out decisive work to provide final solutions for this.

In this way, these two laureates daringly took on the field of specialized research and broke remarkable ground to create new fields. However the fiery ambition held by the two was not limited to research alone. After the war, the two did not ignore citizen's needs and shared in common a great enthusiasm in the civil challenges of the new era such as establishment of research systems, education, culture, and peace.

Utilization of nuclear energy first took the shape of the atomic bomb and many held grave concerns for the future of humankind in the midst of the cold war, where there was a proliferation of development and testing of nuclear weapons. Dr. Yukawa and Dr. Tomonaga contributed greatly in the formation of public consensus towards the peaceful use of nuclear energy such as by being signatories to the Russell-Einstein Manifesto, participating in the Pugwash Conferences and the first Kyoto Conference of Scientists in 1962.



Participants of the Yukawa-Tomonaga Centennial Symposium held at the Inamori Hall December 11–13 2006. Four Nobel Prize laureates in physics are in the photo: Masatoshi Koshihba, Anthony Leggett (1st two people from left on 1st row), David Gross (2nd from left on 2nd row) and Gerard 't Hooft (2nd from right on 2nd row).

It is important to recall the spirit of Dr. Yukawa and Dr. Tomonaga in such an age that some politicians talk casually about revising Japan's Three Non-Nuclear Principles.

## Yukawa Institute for Theoretical Physics

The 1949 Nobel Prize received by Yukawa was not only the first time a Nobel Prize was awarded to a Japanese, but also it gave much hope and courage to the Japanese public who were left impoverished and exhausted from the war. Through the efforts of the Science Council of Japan and Risaburo Torigai, the then President of Kyoto University, the Yukawa Hall finished construction in 1952. The next year, the Yukawa Hall became known as the Research Institute for Fundamental Physics and Dr. Hideki Yukawa was welcomed as the institute's first director and the institute became officially inaugurated as Japan's first research institute for collaborative use by all researchers.

While affiliated with a specific university, the research institute was an organ of national collaborative research and the idea of an institution's operational management reflecting the general will of researchers in Japan was a totally revolutionary conception for Japan at the time and certainly the various difficulties faced regarding operational management and compatibility with university autonomy gave rise to much debate. President Torigai had received a petition for this kind of management for the Yukawa Hall from Dr. Tomonaga and Dr. Sakata who were strongly backed by a passionate consensus from Japan's theoretical physics researchers and, understanding the significance of their requests, he accepted. This decision was passed by the university council and enacted. This led to a partial revising of the National Universities Establishment Law and an entirely new academic structure called the research institute for collaborative use by all researchers.

Thereafter, nurtured by the eminently creative approach of Dr. Yukawa, Dr. Tomonaga and Dr. Sakata, and supported by the academic passion of many Japanese researchers willing to follow, the Research Institute for

Fundamental Physics took on the most cutting-edge problems of contemporary physics and achieved numerous remarkable achievements.

Specifically, the institute concentrated on pioneering and developing new research fields such as astrophysics, plasma physics and biophysics, and has made many groundbreaking contributions.

In 1990, the institute merged with the then Hiroshima University Research Institute for Theoretical Physics. The Hiroshima University Research Institute for Theoretical Physics had been established in 1949 and like the Research Institute for Fundamental Physics, had been continuing unique activities in the field of theoretical physics research, concentrating on gravitation in fields such as the theory of relativity and astrophysics. After the merger, the English name of the new expanded institute was changed to the more internationally appropriate name of Yukawa Institute for Theoretical Physics.

The Yukawa Institute for Theoretical Physics' system of collaborative use that was originated by Yukawa and Tomonaga was modeled on the free atmosphere they experienced while at the Institute for Advanced Study (Princeton) and the Niels Bohr Institute (Copenhagen). Meanwhile, this system has been uniquely developed in Japan such as soliciting research group proposals from the community. It has also influenced the approach of long-term resident international workshops by institutions such as at the Kavli Institute for Theoretical Physics (KITP) in Santa Barbara. For a number of years at the Yukawa Institute for Theoretical Physics, requests have been made for budget allowance for the ongoing holding of long-term resident international workshops and this has now been accepted. Starting from 2007 planning for such events can be carried out. This is perhaps due to this being the Yukawa-Tomonaga Centennial Year. And we would like to use this opportunity to redefine the institute as a fully-fledged international center for collaborative research. I believe there would be no better way to repay our great laureates than by doing this.



Taichi Kugo

- Born in 1949
- Field of specialization: elementary particles theory and quantum theory of gauge fields
- Completed doctoral program, Graduate School of Science, Kyoto University
- D. Sc., Kyoto University
- Director of Yukawa Institute for Theoretical Physics, Kyoto University

### Even when it seems hopeless, I can't give up, the research has to go on — That's my strong sentiment as I stand in the wake of two great men.

This year, the Hideki Yukawa and Sin-Itiro Tomonaga centennial year is making one person in particular, very busy. That person is the director of the Yukawa Institute for Theoretical Physics, Prof. Taichi Kugo. Since Prof. Kugo became institute director in 2003, he has had no break from a hectic schedule. First there was the 50th anniversary since the foundation of the institute, then in 2004 there was the incorporation of national universities, and soon after that preparations began for the current centennial activities.

In their informative years, Dr. Yukawa was orientated towards humanistic disciplines, while Dr. Tomonaga was oriented towards science. Prof. Kugo in contrast was more into physical activities. Helping at his family's liquor shop, he could easily manage two crates of beer. His life was busy making deliveries to customers and he was fully expecting to take over the family business one day. Owing to this lifestyle, he amazed his fellow students by his extraordinary back strength while everyone was doing physical strength testing upon entering University. What led this liquor merchant's son to study physics at Kyoto University was a book he read in his second year at senior high school. He read "The Quantum Mechanical World Picture" by Dr. Tomonaga, who that very year had won the Nobel Prize in Physics, and learned about the wonder of the scientific world. Although half in jest, he secretly made up his mind to "enter Kyoto University and become the third Nobel Prize winner."

"Since I became director, I haven't been able to write any papers. I haven't been this busy since I was chairman of the Yukawa International Seminar to mark the opening of the new institute building in 1995. But that's how fate works I suppose," he says laughing. Through the current activities the professor has learned the deeper story of the two physicists, which has ignited in him a new hunger for physics research. For Prof. Kugo, who finds the energy building up inside him when working with physics, tomorrow is not soon enough to return to the research activities he so desperately yearns for. Perhaps when that day arrives, it could be the start of the next leap forward in the world of Japanese physics.



## Center for Women Researchers – The Kyoto University Model –

In September 2006, Kyoto University established the Center for Women Researchers and launched an initiative named “the Kyoto University Model” to support women researchers and researchers-to-be. This initiative is supported by the Special Coordination Funds for Promoting Science and Technology of the Japanese Ministry of Education, Culture, Sports, Science and Technology and by the Kyoto University Strategic Fund.

We have an increasing number of female students and faculty, but it is recognized that women researchers are still under-represented. In Kyoto University, women make up about one-fourth of graduate students and over 20% of Ph.D. degree awardees, but their proportion in faculty staff remains low at 7.2% (as of 2006). It is a university’s responsibility to improve the working environment for women scientists by removing the barriers that may prevent women pursuing academic careers and by providing necessary support measures. “The Kyoto University Model” aims at pursuing the following action initiatives during the coming several years.

### 1) Networking and information services

When women researchers try to develop their career strategies, opportunities to network with other women scientists and the encouragement derived from such opportunities are valuable. The Center will help

women researchers and students organize and facilitate networking between themselves and with those more senior or junior to themselves. Next, to aim at increasing the number of women scientists in Kyoto University in the long run, the Center will send women scientists to high schools and elementary schools and also accept high school students in various laboratories on campus to expose younger generations to women scientists and their research activities.

Furthermore, the Center will disseminate information about the issues related to women researchers to make all the faculty staff and students become aware of such issues. The Center will also organize seminars and other meetings to discuss relevant topics and strategic plans.

### 2) Counseling, mentoring and career support

The Center will provide a counseling program for women researchers to help them deal with difficult issues arising from their academic and family lives, including harassment in job places and family caretaking (for children and aging parents).

The Center will also provide a mentoring program in which women graduate students and postdoctoral researchers will be mentored by senior women scientists and will get advice and encouragement to consider their academic careers. Through this mentoring program, it is hoped that young women researchers may get

female role models in academia.

### 3) Support for balancing family and work

The responsibilities for family caretaking fall disproportionately on women, and often force them to give up their careers as researchers. To reduce such conflicts, the Center will open a day-



Kohei Shiota

In the process of establishing the Center for Women Researchers at Kyoto University, the job as the center chief has been given to Professor Kohei Shiota. Prof. Shiota has been chosen due to the responsible role he has played in the Faculty of Medicine, which has the highest ratio of women researchers in the science fields. While the human resource system at Kyoto University is transparent and the various departments have had a peripheral understanding towards the issue of women researchers, there has not been a university-wide support strategy.

“In my field of specialization, embryology, there are research laboratories overseas that, maybe apart from the boss, consist mostly of women,” said Prof. Shiota. “The situation in Japan is that one third of all new doctors graduating from medical school are women. Although they truly wish to become a doctor or a researcher, the tough working conditions and the wish to raise children have led many women to quit the profession. This is society’s loss, so it is important to readjust the environment so that these women can continue working.” The staff members have enormous trust in Prof. Shiota who understands the will of staff members and takes a positive approach towards those issues.

care nursery for sick children in the Kyoto University Hospital, which is run in collaboration with the hospital staff. In the near future, it is planned that on-campus childcare facilities and lactation rooms will be provided.

### 4) Improvement of working conditions

The Center will provide financial support for women researchers when they need to hire assistants while they are away for childbirth, adoption, and parent caretaking. The Center will also discuss possible strategic plans to provide flexibility for women researchers with family responsibilities.

Through introducing “the Kyoto University Model,” it is hoped that the working environment for women researchers in Kyoto University will be significantly improved and that the University will appreciate more the contributions and productivity of women scientists.



## Dr. Kiyoshi Ito receives the Gauss Prize

Kyoto University professor emeritus and former director of the Kyoto University Research Institute for Mathematical Sciences Dr. Kiyoshi Ito was awarded the newly created Carl Friedrich Gauss Prize for applications of mathematics at the International Congress of Mathematicians held in Madrid on August 22, 2006, and on September 14, 2006, International Mathematics Union (IMU) President Sir J. Ball personally presented the medal to Dr. Ito at a special ceremony held in Kyoto.

The Gauss Prize was created in 2002 by the worldwide organization for mathematics, the International Mathematics Union, to promote awareness of the influence of mathematics “as a key technology – a driving force behind many modern technologies.” The prize is given to honor scientists whose mathematical research has contributed to the technological development of society and the enhancement of people’s

everyday lives, and is the highest honor conferred for applications of mathematics. The selection of Kiyoshi Ito for the first laureate reflects the achievements in the field of stochastic analysis, starting with his invention of the stochastic differential equation, which have had a significant impact on our society.



Sir John Ball presenting the medal and saying the words, “Congratulations,” to a smiling Dr. Ito, who responds, “Thank you very much.”

## The Establishment of the International Exchange Seminar House

The "International Exchange Seminar House" (built using “j.Pod” wood construction method) was completed recently at Kyoto University, and a signboard raising ceremony was held.

This building is part of an effort to internationalize the campus in accordance with the "Kyoto University international strategy" for the promotion of international exchange activities.

The building is made from excess Japan cedar collected from the Kyoto University research woodland in Wakayama prefecture, and built using the Kyoto University patented building method “j.Pod” wood construction method. The method is revolutionary in that it utilizes juvenile, superfluous wood (e.g., those collected during woodland pruning) to create “frames” which are joined together

to provide structures with increased earthquake resistance. This method holds great promise for the protection of forest resources, the revitalization of the timber industry, and the promotion of ji-shan, ji-shou (sustainable agriculture) in addition to affording greater protection during earthquakes.

International Exchange Seminar House will provide a venue for Kyoto University students and international students to get to know each other, such as through joint classes on

Kyoto culture or research on Japan. It is hoped that the international students will be inspired by the warmth and fresh woody scent of the building while they study Japanese culture.



The opening ceremony of the Kyoto Consortium for Japanese Studies (KCJS)



## Thakur S. Powdyel

- Born in 1958
- Area of interest: English Literature, Gross National Happiness, Alternative Development, Moral Literacy
- Postgraduate Study: North Eastern Hill University, Shillong, India
- University of London Institute of Education, UK
- Vice Principal: Sherubtse College, Kanglung, Bhutan
- Founder Director, Centre for Educational Research & Development, Royal University of Bhutan, Paro, Bhutan

**Universities are great conserving places radiating knowledge and wisdom from generation to generation even as they look up to the future to celebrate the marvels of the human mind.**

**While at Kyoto University, I would like to explore some of the features that define and distinguish it as a great seat of learning.**

Prof. Powdyel of the Royal University of Bhutan, which was founded in 2003, has been resident at the Kyoto University Graduate School of Asian and African Area Studies as a visiting researcher for three months since last October. During his stay at ASAFAS, Prof. Powdyel interacted with the scholars and academics of the university, participated in seminars and symposia, shared his country's vision of Gross National Happiness and delivered guest lectures at other universities. "This time round, I am basically following the unique intellectual landscape of Kyoto University and trying to see what we might learn as we nurture our own nascent national university," he says. Yet he walked with an energetic bounce to his step and during his stay, he has deepened exchange with numerous professors, researchers and students and collected all sorts of information.

As a child, he picked up firewood from the thick woodlands like the other children did, tilled the field and looked after the livestock. Modern education first began in Bhutan in the early 60s. The first generation of students were forcibly sent from the farms to school by the government in a fashion similar to compulsory military service as the parents didn't want the children to go to school. Prof. Powdyel says he remembers being frightened at first, but after starting school, he became engrossed in the fascination of it and studied hard. Today, the participation rate in basic education, which spans 11 years, is close to 90%. The necessary measures to raise the future generation are well underway.

In Bhutan, people-centered development is being promoted under which the increase in the happiness of all the citizens is the country's mission. This development is therefore based on the concept of GNH (Gross National Happiness), advocated by King Jigme Singye Wangchuck (Fourth King) as a replacement for GNP (Gross National Product). In the university development which Prof. Powdyel is participating in, the concept of a university is that it should be a place that provides the power and the drive to advance GNH.

## My ASAFAS DIARY

I first heard about Japan in my primary school years. I often thought that the Land of the Rising Sun must be a very special place. As I grew up, Hiroshima and Nagasaki exploded into my consciousness as symbols of supreme glory ravaged and resurrected.

Mount Fuji and pagodas, mikados and maples, cherries and chrysanthemums, samurai and sumo, kimono and kamikaze slowly took residence in my mind as imaginaries of a land far away at the end of the earth. The first Japanese term I heard was 'sayonara'. It has to be one of the sweetest words in the world.

Then came Sony and Panasonic, Toyota and Mitsubishi, Seiko and Suzuki, among other tokens of Nihon. The most hypnotic and powerful image of all has been the proclamation *Made in Japan*.

I had a hurried two-day visit to Tokyo in 1997 to attend a seminar on higher education at the United Nations University. I only carried back the experience of a mighty tremor as my multi-storied hotel room danced in the middle of the night. But the magic has lived on.

It has been a God-send this time round to have the privilege of a lifetime to spend three months at this premier seat of learning and to share with the Kyodai community my country's development goal of Gross National Happiness and the role of education.

Indeed, in a world long accustomed to measuring development by the conventional tools of statistics and economics, the small Kingdom of Bhutan's search for an alternative paradigm may sound rather idealistic for some. But this is precisely what His Majesty Jigme Singye Wangchuck dreamt of and advanced ever since he ascended the throne as the youngest monarch in the world in 1972.

Convinced that material development per se was not a true indicator of the well-being of a nation, the fourth Druk Gyalpo proposed that 'Gross National Happiness is more important than Gross National Product'. Pursuit of this goal has been the guiding principle of Bhutan's social development philosophy over the years.

The quest for this alternative focus of development is based on the realization that the profound needs of human beings are not necessarily physical or material, and that there are other deeper spiritual, emotional, cultural and psychological dimensions that need to be nurtured as they make life more meaningful and fulfilling.

The search for an alternative goal is based too on the conviction that there is no necessary or direct relationship between the level of material possession and the state of well-being. 'There are limits to material resources', as the Japanese

found out long ago ... 'It stands to reason that material things cannot last a thousand years'.

The Royal Government has identified four pillars, among other policies and instruments, to support the pursuit of Gross National Happiness, namely, sustainable and equitable socio-economic development, conservation of the natural environment, preservation of culture and heritage, and the promotion of good governance.

Bhutan is no longer the Last Shangri La that it used to be called. We have our headaches and heartaches. The tension between the old and the new, tradition and modernity, the love of the past and the call of the future, are part too of our social narrative. But we have our dreams and our relative advantages.

Alma mater of Nobel Laureates, home to thinkers and scientists, scholars and academics from far and near, Kyoto University is a veritable empire of knowledge - a university in the true sense of 'universitas'. I find Kyodai's search for a better world and for harmony among peoples an inspiring expression of our own ideal of happiness.

Thanks to the generosity of my hosts and the benedictions of a glorious autumn, I have had time to explore some of treasures of the ancient civilization of Japan that dates back to 10,000 B C. I have been able to follow some of the significant milestones in the making of this great nation and visit some of my dream-destinations. The immortal haikus of the peerless Basho, the ancestor of all romances, 'The Tale of the Bamboo Cutter', 'The Tale of Genji', among other fabulous finds, have been deeply insightful.

It is my hope and my prayer that the generosity that I have received in this premier seat of learning and the *on* that I wear will in some little way reinforce and advance the great goodwill and positive energy that exist between the Land of the Rising Sun and the Land of the Peaceful Dragon.

For now though, it is arigato gozaimas! And sayonara...



## Tropical Forests Contribute to Civil War

Would you look to tropical forests to find solutions for the international security problems that the world is suffering these days? If your answer is no, then you may want to take a closer look at a new book from scientists at the Center for Integrated Area Studies at Kyoto University. Their conclusion: tropical forests have a lot to do with civil wars.

Civil wars have become the most common armed conflict worldwide over the last 50 years, and often they occur inside or near tropical forests, according to Wil de Jong, Deanna Donovan and Ken-ichi Abe, editors of "Extreme Conflict and Tropical Forests", and to the authors of the ten chapters that comprise this book. A staggering three-quarters of Asian forests, two-thirds of African forests and one-third of Latin American forests have been affected by civil wars.

Warring groups sell timber, diamonds, or other materials from tropical forests to purchase arms for use in civil conflicts. The same forests are also where resentment grows among marginalized ethnic groups or youths who are bombarded by television and cinema with stories and images of prosperity and a more affluent lifestyle. Lacking education, modern skills and job opportunities, they have little chance to escape their world of deprivation and are stuck in archaic social relations with traditional leaders, who control their lives and feel threatened by the youthful aspirations. Where these factors come together, civil war is very likely, according to the chapter by Ruben de Koning, on the "forest wars" in West Africa.

In Cambodia, the desire to control lucrative timber has continued a low level of civil war for many years after it emerged from the horrors of the Khmer Rouge regime. Political elites

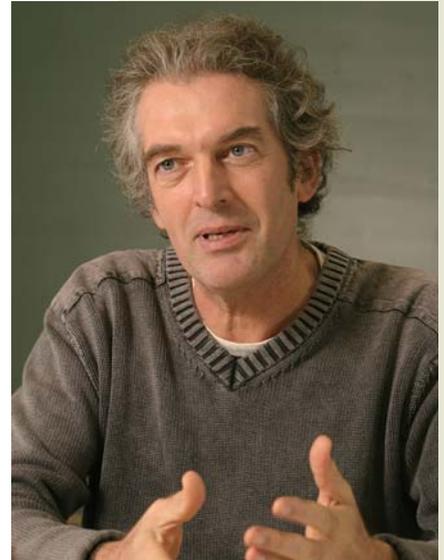
struggled fiercely for power and had no qualms in delaying peace so that they could pillage the country's vast forest wealth. Opponents in the civil war, they cooperated in their business dealings, using the proceeds to buy arms and political allegiance, as shown by Philippe Le Billon and Simon Springer in their chapter.

Both the people suffer and the forests suffer from civil wars, shows the chapter by Goro Nakamura, a Japanese photo journalist who has dedicated most of his professional life to documenting the impacts of the Vietnam War. Some two million ha of forest in Vietnam were destroyed during the 1960s through the use of Agent Orange. This chemical cocktail used for defoliation has caused long lasting skin disease and cancer among Vietnamese and American soldiers who experienced its use in the war. It also has affected their children, many of whom suffer birth defects or other ailments. In Colombia, toxic waste from the production of cocaine, that provides drug traffickers and associated armed groups with money to finance small private armies, has had an equally detrimental effect on people and the environment.

There are ways to address civil wars, where they are caused by resentment, or where they are financed by tropical forest revenues, notes Steven Price in the chapter that addresses "conflict timber", that is, timber traded to finance civil wars. A larger role needs to be played by the consumer countries, like Japan, who should look more carefully at where tropical timber originates, and how it arrives at locations where it is sold to consumers. However, national governments in tropical timber-producing countries need also to commit more strongly to combating the trade of timber that is sold to finance civil war.

David Kaimowitz, former director of the Center for International Forestry Research summarizes the situation most pointedly in the foreword to the book: Unless politicians pay more attention to the role of tropical forests in civil war, these regions will continue to be breeding grounds for violent conflict, banditry, and illicit crops. If politicians and others interested in the topic read this book, they will better understand the combatants, the contribution of tropical forests to civil war, and what can be done about forest wars and its negative impacts.

*Extreme Conflict and Tropical Forests.* Wil de Jong, Deanna Donovan, Ken-ichi Abe, editors. Dordrecht, The Netherlands, Springer, 184pp, 2007. The book can be ordered at: <http://www.springer.com>.



**Wil de Jong**

- Born in 1956
- Field of specialization: Agriculture science, forestry, environmental studies
- Completed masters program in forestry at Wageningen University
- Completed doctoral program in agricultural science and environmental science at Wageningen University
- Professor, Center for Integrated Area Studies (CIAS), Kyoto University

**When tackling regional problems, it is crucial for everyone to talk with each other across borders. At CIAS, you need only to speak to someone to gain this opportunity, which is a fortunate position to be in.**

Prof. de Jong is a specialist in forestry and environmental science. He left the National Museum of Ethnology to take up a new position at the Center for Integrated Area Studies, a national common-use facility, which was established inside Kyoto University in April 2006. He is continuing his work as Peru supervisor for a full-scale international joint research that is targeting Peru, Indonesia, Vietnam and Ivory Coast that involves both researchers on site and researchers in Japan.

Prof. de Jong is from the Netherlands. He was brought up in a small village surrounded by a forest that lies on the border with Germany and spent his days there playing in the forest with his six brothers and sisters, and friends. His interest in forests, which began back then, led him to specialize in agricultural science and forestry at the university, and lured him to his field work inside the forests of Peru. He was mesmerized by the tropical rainforest as soon as he set eyes upon it and according to his father, his initially planned stay of 6 months turned into 5 years, 8 months and 11 days and provided the circumstances for him to meet his wife.

This experience led him to expand his research to forests around the world, first the jungles of Indonesia, then Bolivia, then Zimbabwe, and then Vietnam. From the view point of "while local factors impact greatly, there is also universality", he is grappling with today's forestry problem which is becoming increasingly complex in terms of economic, political and environmental issues. Sometimes past actions that have been carried out in the belief that they were the right solution can become the new problem. However, Prof. de Jong, who also majored in Philosophy, is unruffled. "It is only natural that people with a different mind frame are going to see things differently. You just have to trust in optimism," says Prof. de Jong, whose flexible way of thinking is reassuring.



## The 8th Kyoto University International Symposium



In 2000, Kyoto University began an initiative called the “Kyoto University International Symposium” that sponsors symposia in various locations around the world, and the 8th Kyoto University International Symposium was held in Bangkok during November 23-25, 2006. The university’s mission statement – to contribute to harmonious coexistence on earth– was taken up as an issue in this year’s theme, “Towards Harmonious Coexistence within Human and Ecological Community on This Planet,” with the

intention of marking the first step in substantive interdisciplinary collaboration towards that goal. In this symposium, the “Community” was taken to mean a community organically composed of both humankind and nature, and the vigorous discussions centered on how academia can make a contribution towards bringing us closer to the bright, stable future of such a “Community.” As the participants came from a number of different countries, the common language of discussion was English.

From Kyoto University there were 69 participants, including researchers and students, and from other institutions there were 79 participants, including researchers and students, for a total of 148 participants. Participants hailed from

a number of other countries, including Thailand with a strong turnout of 58 people, as well as Malaysia, Cambodia, Indonesia, Bangladesh, India, Iran, Australia, the United States, and the U.K.

The event was put on by the Kyoto University Organization for the Promotion of International Relations and the 8th Kyoto University Symposium Organizing Committee (which is composed of representatives from seven 21st Century



## The “Japan-China University Academic Forum” was held at Fudan University, China, and President Oike and others participated



The “1st Japan-China University Academic Forum” was jointly held in Shanghai, China on December 8 by Kyoto University, Keio University, Fudan University and Beijing University. Since 2000, leading universities from Japan and China have been participating in the “Japan-China University Presidents

Conference” which is held regularly every few years, and this forum was planned on the basis of an agreement that was made at the 4th Japan-China University Presidents Conference in Xian for the purpose of promoting cooperation and exchange on topics of interest for both countries’ universities.

The forum’s topic was “Initiative and Partnership – the new mission of Japanese and Chinese universities,” and from Kyoto University, President Kazuo Oike and Executive Vice President Shuzo Nishimura participated. In the morning, there was an opening ceremony followed by the keynote speeches, and in the

afternoon, participants split up into three subcommittees: “Presidents Roundtable Conference,” “Creation of Knowledge and the Economic Development of the Asia Pacific,” and “The Mission and Roles of Universities in the promotion of Japan-China Cooperation.” Participants came from 27 universities, and included presidents and vice-presidents, as well as the researchers who specialized in each field, and there were lively presentations



## Official Visitors from Abroad

COE research groups and one research unit\*).

\*Seven 21st Century COE research groups and one research unit:

COE for Innovative Food and Environmental Studies Pioneered by Entomomimetic Sciences

COE for Microbial-Process Development Pioneering Future Production Systems

COE for Formation of a Strategic Base for the Multidisciplinary Study of Biodiversity

COE for Integrated Area Studies

COE for the Elucidation of the Active Geosphere

COE for Sustainable Energy Systems

COE for Natural Disaster Science and Disaster Reduction

Research Unit for Sustainability Science



and discussions.

Prior to attending this forum, on December 8, President Oike and Vice-President Nishimura paid a visit to our Graduate School of Economics' Shanghai Center, which is located in the Center for Japanese Studies at Fudan University. They also visited student dormitories, the international student dormitories, and other facilities for students such as the dining hall.

Kyoto University welcomes many visitors from overseas: government ministers, ambassadors, and presidents of associate universities.

President Oike, Vice-President Yokoyama, and concerned professors receive the guests and discuss topics of mutual interest. These social and academic exchanges provide excellent opportunities for Kyoto University to better relations with its guests' organizations.

### Visitors List in 2006 in order of date of visit

- Dr. Erling Norrby / former Secretary General, Royal Swedish Academy of Sciences (Sweden)
- Dr. Taweeep Chaisomphob / Vice Rector, Thammasat University (Thailand)
- Dr. Dragan Primorac / Minister of Science, Education and Sport (Croatia)
- Dr. Makan Kourouma / General Director, Bossou Institute of Environmental Research (Guinea)
- H.E. Mr. Jorma Julin / Ambassador of Finland to Japan (Finland)
- Prof.,Dr.Umar Anggara Jenie / Chairman, Indonesian Institute of Sciences (Indonesia)
- Mr. Li Dongxiang / Minister-Counselor, Embassy of the People's Republic of China (China,P.R.)
- Prof. Nick Gatheru Wanjohi / Vice-Chancellor, Jomo Kenyatta University of Agriculture and Technology (Kenya)
- Prof. Everett Maraka Standa / Vice-Chancellor, Kenyatta University (Kenya)
- Dr. Cho Sung Shik / delegation leader, National Academy of Sciences (Korea)
- Mr. Thomas Weko / delegation leader, reviewers from OECD Thematic Review of Tertiary Education (France)
- Dr. Torsten N. Wiesel / Secretary-General, International Human Frontier Science Program Organization (France)
- Dr. Robin Warren / Emeritus Professor, University of Western Australia (Australia)
- Prof. Khunying Suchada Kiranandana / President, Chulalongkorn University (Thailand)
- Mr. Stefano Zanini / The Italian Consul General in Osaka (Italy)
- Dr. Per Eriksson / The Director General of VINNOVA (Sweden)
- Prof. Pan Yunhe / Vice President, the Chinese Academy of Engineering (China,P.R.)
- Mr.Jean Gueguinou / France Ambassador to UNESCO (France)
- Prof. Wang Shenghong / President, Fudan University (China,P.R.)
- Prof. Dr. Un-Chan CHUNG / School of Economics, the former president of Seoul National University (Korea)
- Prof. Dr. Mai Trong Nhuan / Vice President, Vietnam National University Hanoi (Viet Nam)
- H.E.Mr. Hans-Joachim Daerr / The Ambassador of the Federal Republic of Germany in Japan (Germany)



Dr. Torsten N. Wiesel, 1981 Nobel Laureate in Physiology/Medicine and current Secretary-General, International Human Frontier Science Program Organization



Prof. Nick Gatheru Wanjohi, Vice-Chancellor of Jomo Kenyatta University of Agriculture and Technology, and Prof. Everett Maraka Standa, Vice-Chancellor of Kenyatta University



Reviewers from OECD Thematic Review of Tertiary Education



Prof. Dr. Un-Chan CHUNG, School of Economics, Seoul National University (former University President )



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P R O M E N A D E

京都逍遙

葵祭

## Aoi Festival Heian dynastic culture appears before your eyes after more than 1,200 years

On May 15 each year a spectacular procession of people dressed in the garb of Heian period aristocracy parades the streets through the city of Kyoto. The Aoi Festival, along with the Gion Festival and the Festival of Ages, is one of the three great festivals of Kyoto. Led by a cavalcade, the parade, which includes an oxcart decorated with Japanese wisteria and palanquin bearing the imperial representative Miko (shrine maiden), leaves from the Kyoto Imperial Palace and extends for about one kilometer as the 511 participants cut about an eight kilometer path through the Kyoto city center.

The Aoi Festival is the annual ritual of the Shimogamo Shrine (official name Kamomioya Shrine) and the Kamigamo Shrine (official name Kamowakekazuchi Shrine) and was once called the Kamo Festival. The Shimogamo Shrine and the Kamigamo Shrine both date back to before the 6th Century when they were the shrines used by the powerful Kamo clan who ruled the area to worship their clan deity. They have the oldest history of all of Kyoto.

The origin of the festival can be traced back to about 1,400 years ago. During the reign of Emperor Kinmei, the emperor was lamenting consecutive crop failures and sent his envoy Urabeikiwakahiko to the Kamo Shrines to perform a festival. It is said that afterwards, the winds and the rain stopped and the crops yielded a rich harvest. This was the beginning of the festival. During the Heian period this became the most important festival and was performed in spectacular style as a national event. As time has passed, this festival has been carried through history's ups and downs until present day and offers a small glimpse at the style of the Heian dynasty.

The festival became widely known as the Aoi Festival during the Edo period. When the festival was revived in 1694 after a temporary suspension, they extensively used the leaves of the hollyhock for decoration on the bamboo blinds hanging on the main buildings of the Kamo Shrines, on the procession oxcart, and on the clothes and headwear of the envoys and all the participants. And from that day forward the festival became known as the Aoi (hollycock) Festival.

The procession down the road on the festival day (Rotonogi) and Shatonogi which is the ritual performed in front of both shrines are well known, but there are also a range of other rituals that take place during the Aoi Festival. The events begin on May 3 with the start of the Yabusame Shinto service, which involves archers on galloping horses shooting targets with a bow and arrow in the precinct of the Shimogamo Shrine and for the next two weeks a whole range of pre-festival activities are held until the big day of the 15th.

The procession of the festival passes a few hundred meters to the west of the Kyoto University Campus and is very popular with the students. Each year many students not only watch the festival, they also dress up in their own white costumes to add the procession. For Kyoto University Students, the festival gives them an opportunity to feel the elegant flavor of the Heian period and at the same time experience the joy of studying in historic Kyoto.



An oxcart given to imperial envoys for their use by Emperor about 330 years ago. The sides of the oxcart are decorated with strands of purple Japanese wisteria and irises, giving it an air of elegance.

Formerly, unmarried Imperial princesses presided over the festival. Today, an unmarried woman living in Kyoto is selected to act as the Saiodai, or deputy, in this role.



People are dressed in replicas of gorgeous Heian costumes for elite bureaucrats and ladies of the court.



A *furyugasa*: Dark blue cloth is stretched over a large umbrella and covered to the brim with artificial flowers. The decoration is replaced every year.