UNESCO GLOBAL GEOPARKS

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Since 2004, UNESCO has endorsed areas of international geological heritage significance with a sustainable economic development plan through the Global Geoparks label. However in November 2015, the 38th session of the General Conference of UNESCO, by acclamation, adopted the new designation of UNESCO Global Geoparks and agreed to adopt all pre-existing Global Geoparks as new UNESCO Global Geoparks. This marks the first time since the ratification of the Convention concerning the protection of the World Natural and Cultural Heritage in 1972 (which allowed for the creation of World Heritage Sites) that UNESCO has created a new site-designation of this kind and the first time it has adopted a series of pre-existing sites.
While world heritage sites focus on the fulfilment of one of 10 criteria that demonstrates outstanding universal value, UNESCO Global Geoparks have the concept of community empowerment and sustainable development at their core through appreciation of geological heritage of international value and its link to other aspects of natural, cultural and intangible heritage. Using examples, this presentation will present examples of UNESCO Global Geoparks, explain the concept behind them and discuss the various changes that have resulted from the recent decision by UNESCO.

Keywords: Geopark, International Geosciences and Geoparks Program, UNESCO

40 Years of the International Geoscience Programme (IGCP)

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Based on the UNESCO General Conference in 2015, the existing IGCP and Geoparks Programmes both supported by UNESCO were decided to establish a profound connection as a new international initiative, the International Geoscience and Geoparks Programme (IGCP). In some ways, this reformation has been considered to solve the long pending issues between the parties concerned.
The International Geoscience Programme, formerly the International Geological Correlation Programme (IGCP), was officially launched in 1972 as an outstanding and unique cooperative enterprise between UNESCO and the International Union of Geological Science (IUGS), and the Programme celebrated its 40th Anniversary in 2012 at UNESCO headquaters in Paris.
The speaker was concerned with IGCP for 21 years since 1991 as a member of the Japanese National Committee for IGCP, Leader and Co-Leader of three IGCP Projects.
In the talk of the session entitled “IGGP of the future”, a brief history, the growth, and light and shadow to see in the development of the IGCP will be discussed.

Keywords: IGCP, IGGP, IUGS

Activities of Asian Cretaceous IGCPs: IGCP608 and its predecessor programs

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The IGCP608 (2013-2017) is now ongoing the forth-year activities after the project proposal approval by UNESCO-IGCP office in March, 2013. In this talk, H. Ando as a project leader briefly reviews the current status of IGCP608 activities and its predecessor programs.
The project is entitled "Cretaceous Ecosystems and their Responses to Paleoenvironmental Changes in Asia and the Western Pacific", and shortly “Asia-Pacific Cretaceous Ecosystems”. In this project, the spatio-temporal paleoenvironmental and paleoecosystem changes during the Cretaceous in the South to East Asia and Western Pacific region have been delineated on the basis of paleoproxy data and a diversified fossil record from wider areas and different locations. This project comprises two groups of major topics to be discussed: 1) Variations of Cretaceous terrestrial and marine environments, and 2) Evolution of Cretaceous terrestrial and marine ecosystems in Asia and the Western Pacific. The terrestrial strata widely distributed in South and East Asia yield abundant indicators, both biotic and lithologic, that are essential for deciphering how the ecosystems were affected by paleoclimatic and paleoenvironmental changes.
The project has an important role in promoting communication at the level of geoscience among the various (over fifteen) Asian countries and half a dozen countries outside Asia, following the pattern of previous East Asian Cretaceous IGCPs: 245 (1987-1991), 350 (1993-1998), 434 (1999-2004) and 507 (2006-2011). Therefore, our Asian Cretaceous geoscience community has been continued over 30 years since late 80’s.
The First International Meeting of IGCP608 was held at Birbal Sahni Institute of Palaeobotany (BSIP), Lucknow, India, from December 20-22, 2013. The current knowledge of Cretaceous geology and paleontology in Asia, especially south Asia was reviewed in the symposium and the subsequent four-days field excursion to Cretaceous Bagh-Lameta sequences in the western part of the Narmada basin of Central and Western India. The Second Meeting (September 4-10, 2014, Waseda University, Tokyo, Japan) and post-symposium field trip brought together more than 90 earth scientists from 13 countries, including graduate students and representatives of petroleum and resources companies. Session themes include OAEs, land-ocean linkage, Asian geoparks highlighting Cretaceous, etc. In a post-symposium four-day field excursion, we focused the forearc basin siliciclastic successions exposed along the Pacific coast 100 to 250 km east to northeast from Tokyo. The third year activity was held as a Joint Meeting with MTE-12 (The 12th Symposium on Mesozoic Terrestrial Ecosystems) in Shenyang, Liaoning Province, China, during 16-18 August 2015. The two-days field excursion visited and observed the Early Cretaceous “Jehol Biota” and Jurassic “Yanliao Biota” in Western Liaoning very famous in feathered dinosaur faunas.
This year we will hold the Fourth Meeting in Novosibirsk, Western Siberia situated nearly at the center of Russia during 15-20 August 2016. The post-symposium excursion will visit the Early Cretaceous dinosaur localities now excavated, where is very important for reconstructing the terrestrial paleoenvironments and ecosystems in central to east continental Asia. Furthermore, the Joint Symposium with IGCP609 and ICDP Songliao Basin is scheduled in 35th IGC, Cape Town, South Africa during 27 August to 4 September 2016.
Several our scientific results during 2013 and 2015 will be published in the thematic section of “*Island Arc*”, Wiley online journals. Our project information including meetings and publication lists has been frequently updated on the project website (http://igcp608.sci.ibaraki.ac.jp/) with links to IGCP609 and 632, as well as Geoparks, some scientific organization and societies. This

website acts as a platform to recognize our IGCP608 activities for public as well as members.

Keywords: IGCP, Cretaceous, Asia, IGCP608, ecosystem, paleoenvironmental changes

Activity of the Japanese Geoparks Network and the Japan Geopark Committee -constructing good relationship between society and geoscientists-

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Since its establishment in 2008 Japanese Geopark Committee (JGC) has been playing a crucial role to expand the concept of geopark and to launch geopark projects in Japan. The establishment of the JGC was top-down movement from the academic side. Stimulated by the activity of researchers, mayors and local government officers of seven national geoparks, which were authorized by JGC in 2008, established the Japanese Geoparks Network in 2009. In first few years after the establishment the JGN was not so active network. There happened little mutual cooperation through the network. Gradually networking activity enhanced thanks to the workshops during the annual conferences of JGN and the short courses held two times a year. Scientists, local guides, local governmental officers and also local people who are involved in geopark activity get together and discuss in workshops and short courses. Symposiums which are held in many national and global geoparks also provide opportunities to foster mutual cooperation between geoparks and also between scientists and local people.
Now evaluation of geoparks are conducted both JGC members and experts from JGN members. Those evaluators and candidates for new evaluators have a workshop every year to discuss how to evaluate geoparks based on the GGN guideline. Geologists and other specialists in member geoparks of the JGN plays a key part in network activity such as workshops on various themes and daily discussion by e-mail. Through the evaluation process scientists, specialist and local people can exchange their opinion on geopark.
By the process described above, JGN and JGC have been effective umbrella under which people of various back ground can cooperate for local community. JGN and JGC hve been and will play an important role to make our society more sustainable through the cooperation between earth scientists and citizens.

Keywords: Geopark, International Geosciences and Geoparks Program, Japanese Geoparks Network

Supporting the geopark activity by the Volcanological Society of Japan

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Since Japan is one of island arcs showing geologically dynamical moving such as volcanic eruptions and earthquakes, two thirds of 39 national geoparks in Japan, including 8 UNESCO global geoparks, have the Miocene-Quaternary volcanic fields and the related volcanological heritages. Therefore, regarding scientific interpretation and utilization of these heritages, especially increasing people’s awareness for natural hazards, contribution by members of the Volcanological Society of Japan (VSJ) becomes very essential. In fact, staffs and supporting scientists of several geoparks are members of VSJ, which is one of 5 academic societies sending the members of the Japan Geopark Committee. In the VSJ Committee for Supporting Geoparks Activity, we are exchanging information on domestic/foreign movement of Geoparks and discussing the related issues raised through the VSJ members' personal activity; scientific confirmation of explanation contents on major volcanological heritages, how to issue the information outsides from the geoparks faced to eruption crises, and so on. In every fall meeting of VSJ, special public session on “geoparks” is set for a half day and a pre-meeting geotour is organized by the geoparks of or near the venue.
The International Association of Volcanology and Chemistry in the Earth's Interior (IAVCEI), which is one of associations under the International Union of Geodesy and Geophysics (IUGG), organizes the Commission on Volcano Geoheritage and Protected Volcanic Landscapes (VGPL). CVGPL held the VOLCANDPARK international forums in Olot (Spain) in 2012, and Lanzarote (Spain) in 2015. Although its purposes noticed are similar to those in the guideline of Geoparks, any specific activity does not exist as of today, except for holding the above meetings; similar to the" Cities on Volcanoes Conference" by the Commission of Cities and Volcanoes in IAVCEI. The bottom-up activity of people involved in Geoparks, World Natural Heritages, and National Parks would not be promoted by these meetings, although they can be helpful for attendees to exchange information and ideas among those projects.
Combining the activities of Geoparks and IGCP, as IGGP, is one of appropriate processes to promote the transparent relationship between science and society. The scientific results from the IGCP research can be transferred directly to Geoparks and are utilized effectively for geotourism and for increasing the geological value of heritages. Especially, volcanological research results will be used effectively to increase the resilience of local society against volcanic disasters in the volcanic areas in and around Geoparks. By feedback through Geoparks from the society, we may be able to choose scientific research directions.

Keywords: Committee for Supporting Geoparks Activity, Volcanological Society of Japan, Natural hazards

Origin and future of Global Geoparks

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Geoparks are in gestation for more than 30 years, appearing from the development and evolution of the geological site conservation conscience and from its recent heritage value consideration. An important milestone on the way to Geoparks was the adoption, in 1991, of the «International Declaration of the rights of the Earth memory »(Digne, France)..
In the years 1995-2000 meanwhile the Geoparks where in development in China under a concept of «Geological Park », Four territories in Europe (France, Greece, Germany, Spain) have developed an European program, in partnership with UNESCO to experiment the concept of Geopark as tool of sustainable development. This program has provided the bases of the Global Geoparks concept as territories presenting a geological heritage of an international value linked with the other territorial heritages (natural,cultural, intangible) and, where are implemented new strategies of integrate economical sustainable development.
In 2000, under the UNESCO auspices, is created the European Geopark Network (EGN) and due to the great succes of this young network, UNESCO launched in 2004, on the same concept, the Global Geopark Network (GGN). Very quickly this network expands all over the world to reach in 2015, 120 Geoparks inside 33 State Members of United Nations.
Considering the great success and the strong interest generated, all around the planet, by these territories their weakness was mainly located inside their «light »or unformal support provided by UNESCO. This is the reason why a solution was looked for a new and formal UNESCO strong involvement. Involvement which was finded throught the vote of IGGP program, in November 2015, By the UNESCO General Assembly transforming the previous Geoparks in official UNESCO Global Geopark program fully supported and managed by UNESCO in partnership with the Global Geopark Network Association.
This fundamental evolution without changing anything on the previous Geopark concept will have, therefore, some consequences on the procedures and on the designation process which will be done, in fine, by the UNESCO Executive Committee.
Thanks to this new UNESCO formal visibility, the Global Geopark Network will have in the future more responsibilities by strengthening within its members not only management quality but also communication, networking, methodologies, and common international cooperation.
Geoparks are the new territories of the XXI century where the memory of the Earth meet Mankind memory for a new integrated sustainable economy and they have a great future in front fo them.

Keywords: International Geosciences and Geopark Program, Global Geoparks Network, Geopark

Hiostory of consevation of geoheritage in Japan

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Nature conservation initiatives in Japan are closely linked with the adoption of western science and technology in the Meiji Period. This implies that conservation rules were not developed from within but incorporated from the outside without thorough evaluation of their applicability to the natural environment of Japan. Another major characteristic is that local people tend to attach more importance to promote their local culture and lifestyle, rather than conserving the natural components of the environment. The geopark movements in various parts of Japan show a similar tendency.

Keywords: conservation of landform and outcrops, value of landform and outcrops, protected area

IGGP and Geoscience for Future Society: Exploring a Framework for Managing Earth Heritage

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This paper reviews potential challenges facing the newly emergent IGGP from the viewpoint of geoconservation and argues for the need of a universal framework to address these issues.
In the adoption of the IGGP, UNESCO has created a new formal program for heritage management for the first time in about four decades. The IGGP is expected to become a vital part of the toolkit to achieve Sustainable Development Goals (SDG) at the global level. While other similar global-level UNESCO programs such as the World Heritage Site (WHS) and Biosphere Reserves (BR) primarily operate from the viewpoint of biological diversity, the global geoparks program focuses on the earth as a whole, and the abiotic processes and formations in particular. However, while international heritage management programs such as the WHS and BR are backed up by strong research and conservation initiatives (example: the Convention of Biological Diversity or CBD), which in turn are based on the realization that biological diversity is being degraded at a rapid pace—geoparks do not currently have similar international frameworks for their activities. A major challenge is that even local societies are often not aware of the rapid degradation of resource reserves, extensive fragmentation of landscapes and loss of landforms that inhibit geological processes. It has been argued by scientists like Crutzen (2002) that humanity has propelled the planet to a new geological age of Anthropocene where humans are the dominant agents of planetary change. This requires scientists and planners alike to come together and address change and conserve the planet's dynamic processes wherever possible. While geoparks currently attach value to important geological 'formations', this alone will not be enough and scientists should come together to attach value to earth 'processes' in order to maintain their integrity. Of course this leads to challenges such as hazard or risk management as earth processes can be disruptive to life and property. But the IGGP should nevertheless provide geoparks strong incentives to understand global geological processes and their interconnectivity. It is proposed that a tentative framework can be derived from the works of Christopherson (1991) and Gray (2013), which explore 'geosystems' and the 'intrinsic value of geodiversity' as analytical and ethical frameworks, respectively.

Important role of resident earth scientists in Geopark.-In case of Lesvos and San'in Kaigan UNESCO Global Geoparks collaboration-

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Geoparks is a “bottom-up” or community-led program. Local people approach to recognize geological significance of each Geopark and they conserve and promote geological heritage and regional resources for science, education and tourism etc.
Basically, local people know local culture, traditional custom and human connection in each area but they are not understand scientific significance of their area. The other hand, scientists understand scientific information but they could not understand local culture, traditional custom and so on. So, it is important that resident earth scientists lead each Geoparks and they share knowledge and experience between Geopark networks.
In San’in Kaigan UNESCO Global Geopark and Lesvos UNESCO Global Geopark, we share knowledge and experience and promote various Geopark activity by each resident earth scientists. Lesvos UNESCO Global Geopark and San’in Kaigan UNESCO Global Geopark are two Geoparks that share many common features like spectacular volcanic and coastal landscapes, geothermal fields, protected areas, reach biodiversity and endemic species, reach cultural heritage, common approach in geotouristic and educational activities as well as innovative local development initiatives on food and handcrafts. On the 12th of February 2011 they have signed a sistering agreement, aiming to the close collaboration of the two territories in various fields of mutual interest like geotourism, educational programmes and networking.
The geographical distance between them was not an obstacle for fruitful collaboration, Concrete results during the last years shown that there is great potential and opportunities for common activities among Global Geoparks. As a result of the collaboration between Lesvos Global Geopark and San’in Kaigan Global Geopark several visits from both sides have led to the exchange of knowhow and experiences, to a comparative study, collaboration in conferences, capacity building activities and courses, research and educational activities, presentation of Geopark collaboration and preparation for exchange of exhibitions.

Keywords: Resident Earth Scientists , Geoparks, Networking

Geoparks as Vehicles of Change in Attitudes of People

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Geoparks are not only about communicating knowledge of earth science to people. they are 'bottom-up' movements that result in changes in people's attitudes. This presentation will introduce a number of people whose lives were changed due to geopark movement. The examples show that geoparks can act as a vehicle to change the attitudes of people.

Keywords: Geopark, bottom-up management , life

