

Content

Science News from Chinese Media during the Period of May 2006

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Helmholtz News in China

Dr. Fritz, administrative director of FZK, has paid a visit to China between 05.05 and 09.05, with the companion of Prof. Dinjus. He went to Zhibo and Qingdao in the Province Shandong. A company with German background located in Zhibo has the interest to implement the “Bioliq” (synthesized diesel from biomass) demo-plant in China. With a similar investment of up to 20 million euro, this demo-project will have a 5 times larger capacity in comparison to that pilot-plant to be built in Karlsruhe, which has just been approved as one of the Helmholtz key investments for the next 5 years. Dr. Fritz is convinced this project is the most ideal in China from various aspects. This project has already raised enough political attention in China. The provincial governor and his colleagues have vowed to provide all the assistance and sufficient financial flow is already secured from various resources in China.

On the 9th May, while Dr. Fritz meeting Mr. Lauk, Minister Councilor of German Embassy in Beijing, coordinated and accompanied by Dr. He from Beijing Office, this project echoed great interest and had been recommended to put into the list of signing projects for Mrs. Merkel’s China visit. On 22.05, this agreement of cooperation was signed between Dr. Fritz on behalf of FZK and his major partner Mr. Chu, witnessed by high ranking officials.

From 17th to 24th May, Prof. Steiner, scientific director of HMI, has paid a visit in Beijing. He is invited by the CIAE (China Institute of Atomic Energy) and is awarded as honorable professor through the CIAE president, Prof. Zhao. CIAE is a prestigious Chinese institute with over 3000 coworkers and it is just building several big-facilities, such as a Fast-Breeder and a Neutron Scattering Source. In his address, Prof. Steiner attributes this honor to the long term cooperation between HMI and CIAE. It is certainly also a clear wish from Chinese side to learn more on the construction and operation of their on-build neutron scattering source. He believes both sides could prepare an agreement on cooperation in terms of scientific exchange. By accompanying him visiting CIAE, Dr. He has learned that there are also many contacts between CIAE with FZJ and FZK, for instance, a FZJ group, led by Prof. T. Brueckel, has also donated recently a special spectrometer to this neutron scattering source.

Between 23rd and 30th May, Dr. W. Jaek, Dr. Hoppstock and Dr. M. Bram from FZJ came to Chengdu to participate the China West International Expo. It is an interesting experience. They were also invited to visit the South-West Jiaotong University. The material science department is of a certain special interest: they have a leading group in China for plasma coating and sputtering of Titanium Oxide onto biomaterials; another excellent group in this department is testing the friction of these materials.

Aside from accompanying FZJ colleagues on the Expo, Dr. He has also taken the opportunity visiting the SWIP (South-West Institute of Plasma-Physics), the Sichuan University and the Chengdu Institute of Organic Chemistry. He has exchanged information with Prof. Pan Chuanhong and Prof. Liu Yong, president and vice president of SWIP. It is interesting to know that China is under pressure for training and selecting its leading scientists for the ITER project, as China promised 10% of the total contribution, including manpower. The meeting with the vice president of Sichuan University and also those others are also very informative, for instance, an investment company is desperately searching for photovoltaic technology from Germany, etc.

Helmholtz Beijing Office

1 Science News

1.1 Energy

China's "man-made sun" to begin physical experiment

(China News, 2006-05-10)

The Chinese Academy of Sciences (CAS) revealed on its official website that China has completed adjustment for the "man-made sun" and is about to commence the first round of physical experiments.

With the code name "EAST", the "man-made sun" is an energy project that aims to generate infinite and clean nuclear-fusion-based energy.

According to related experts, the discharging operation experiment of the "man-made sun" project is scheduled to begin in July or August. If this experiment succeeds, China will become the first country to have set up the EAST superconductive nuclear reaction device and possess the first "man-made sun" in the world.

Chinese scientists started to establish the "man-made sun" device in 2000 and began final assembly in 2003. The whole project cost nearly 300 million yuan (US\$37.5 million), only accounting for about one fifteenth to one twentieth of other countries' spending on similar projects.

China's largest nuclear generator connected to power grid

(China News, 2006-05-14)

China's largest nuclear power generator has been connected to the national grid, the China National Nuclear Corporation (CNNC) announced Saturday.

The trial launch of the number one generator of Tianwan Nuclear Station in Lianyungang city, Jiangsu Province, marked the success of the largest cooperation project between China and Russia. The generator is expected to go into commercial operation at the end of this year.

The number two generator, which has the same installed capacity of 1.06 megawatts (MW) has been completed and is expected to begin generating later this year.

When both are in commercial operation, they are expected to boost China's nuclear power capacity by 30 percent from the current seven MW to over 9.1 MW, said a CNNC statement.

The two generators at Tianwan are expected to produce 2.12 MW each year for east China, which boasts the fastest economic growth in the country.

The construction of Tianwan Nuclear Power Station began in 1999 and has cost 26.5 billion yuan (3.3 billion US dollars). Both generators feature Russian pressurized-water technology.

The connection of the number one generator to the grid reflected the strategic partnership between China and Russia, said Sergei Razov, Russia's ambassador to China.

The advanced technology was more secure than most pressurized-water facilities.

The Chinese government is relying on nuclear power to meet the rising energy demands of its booming economy.

In its 11th Five-year Project for economic and social development from 2006 to 2010, the government opted for a "positive" nuclear power development strategy. Under the plan, nuclear

capacity is to reach 40 MW, accounting for four percent of the total national capacity.

China has nine nuclear generators in commercial operation with a total capacity of seven MW, but the potential for growth is attracting interest from international firms such as US-based Westinghouse, France's Areva and Russia's AtomStroyExport (ASE).

Razov said the two new generators were a sound basis for Russia to participate in more projects in China.

The number three and four generators at Tianwan are still out to tender as part of the second phase of the station.

Safety was the chief principle for Tianwan Nuclear Power Station, said an official with the CNNC.

Nuclear plant links reactor with energy grid

(China News, 2006-05-15)



Tianwan nuclear plant, the biggest joint investment between China and Russia, has connected its first reactor with the national grid, the China National Nuclear Corp (CNNC) announced on Saturday.

Two reactors have been planned for the nuclear plant in eastern Jiangsu Province, and when both are connected they will increase China's nuclear power output by as much as 30 per cent.

"The Tianwan project is the largest Sino-Russian joint investment in the technology and business field, and marks a new start for the two countries to work together for peaceful utilization of nuclear energy," Beijing-based nuclear builder CNNC said in a statement.

The first reactor is expected to begin commercial operations later this year, and the second should be connected with the national grid by the year-end, the company said.

Each has an installed capacity of 1,060 MW (megawatts), together boosting the country's nuclear capacity to 8,707 MW from the current 6,587 MW, according to statistics from CNNC.

The plant uses Russian pressurized-water technology, and has cost 26.5 billion yuan (US\$3.3 billion) since construction began in October 1999.

China is working hard to diversify its energy mix to reduce its heavy reliance on air-polluting coal and high-priced oil. This effort involves pushing the use of nuclear energy and renewable sources such as wind and solar power.

The world's second-biggest energy consumer after the United States, China is aiming to increase the contribution of nuclear energy to 4 per cent of the country's electricity demand by the year 2020, from the current level of less than 2 per cent.

New nuclear power project launched in E. China

(People's Daily, 2006-05-18)

A joint venture company for construction of a new nuclear power project was inaugurated Thursday in Fuzhou City, east China's Fujian Province, symbolizing the start of preparation for the nuclear project.

The project, named Fuqing nuclear power station, is a joint venture between two major Chinese energy companies -- the China National Nuclear Corporation (CNNC) and the China Huadian

Corporation.

CNNC holds 51 percent of the stake while Huadian Fujian Power Generation Co. Ltd., the local subsidiary of Huadian, holds 49 percent.

The station will house six generating units, each of 1 gigawatt.

The hydrological and geological conditions, transmission distance and surrounding environment were suitable for a nuclear plant, said a CNNC official.

The new project was expected to supply power for economic growth west to the coast, said the official.

Huadian, one of China's five major state-owned electricity producers, signed a strategic cooperation agreement with CNNC, the country's leading nuclear power producer.

The newly established company will take charge of the development, construction and operation of the Fuqing nuclear power project.

The company is still awaiting approval of feasibility studies and site examinations before starting construction, said the CNNC official.

China to play role in global fusion reactor

(Xinhua Net, 2006-05-26)

China will be involved in the development of all the core technologies needed to build the world's biggest experimental nuclear fusion reactor.

On Wednesday China signed a historic deal with the European Union, the United States, Russia, India, Japan and the Republic of Korea to build the US\$14 billion International Thermonuclear Experimental Reactor (ITER).

The project is believed to be the most expensive science experiment ever, with China contributing 10 per cent of the funding.

Scientists hope ITER will unlock the secrets of nuclear fusion, which could solve the world's energy crisis and bring an end to global warming caused by burning fossil fuels.

Last night Yang Changchun, an engineer with China's ITER office, told China Daily that Chinese scientists will be involved in 12 of the project's key programmes, including manufacturing superconductors and power supply sets.

"China will take part in the research and development of all core technologies in this project," said Yang.

All participants are expected to ratify the agreement to build ITER by the end of the year, with construction beginning in Cadarache, France, in 2007, said the Xinhua News Agency.

Under the new accord, which was signed in Brussels on Wednesday after three years of talks, the EU will pay 50 per cent of ITER's total cost with the rest divided amongst the other participants.

The entire project is expected to last 30 years, with the first 10 years spent constructing the facilities.

The finished reactor will have a power capacity of 500 megawatts.

Experts predict that by the end of the century 10 to 20 per cent of the world's energy could come from nuclear fusion.

Huo Yuping, the leading scientist in China's ITER Office, said it was ITER's significance in solving the energy problems confronted by all humanity that had encouraged China to lend its scientists to the project.

He added that the nation could also take advantage of ITER to develop related advanced

technologies.

Although fusion experiments have only taken place in a few countries around the world, they could hold the key to unlocking vast untapped supplies of energy.

Theoretically, a fusion power plant could generate 1,000 megawatts of electricity from only 1 kilogram of deuterium and 10 kilograms of lithium.

A conventional nuclear fission power station would need 500 kilograms of highly radioactive uranium to generate the same amount of power, while a coal power station would need 10,000 tons of coal.

As scientists are able to extract deuterium from sea water, with fusion power the world's oceans would contain enough energy to meet human use for the next 6 billion years.

1.2 Earth and Environment

Plateau life science research institute set up in China's Hoh Xil Nature Reserve (People's Daily, 2006-05-08)

A life science institute was opened on Saturday on the high plateau of the Hoh Xil Nature Reserve. The Hoh Xil Plateau Medical Science Research Institute is engaged in the research in an area covering 45,000 square meters of land in the heart of Qinghai-Tibet Plateau, which stands over 4,000 meters above sea level, the highest such research base in China.

The fragile nature reserve harbors many endangered plateau animals and plants such as the Tibetan antelope, wild yak, snow leopard and snow lotus in northwest China's Qinghai Province.

Gerili, dean of the plateau medical science department at Qinghai University, said the institute was set up mainly due to concerns that plateau tourism will soon draw a great number of tourists following the completion of China's Qinghai-Tibet railway, which will begin trial operation on July 1 this year.

Studies by the institute will give primary focus on health problems of human beings living in the plateau region, according to Gerili.

The world's highest and longest plateau railroad will facilitate travel to the Tibet Autonomous Region. About 800,000 more travelers will visit Tibet via Qinghai, according to the Qinghai tourism administration.

The institute has been designated to carry out a series of key life science research projects concerning human and animal medical research as well as plateau plant research. The base is an open research platform for scientists from home and abroad, said Gerili.

Scholars from internationally renowned higher learning institutes such as Harvard have made applications to carry out field studies in the institute. High-level academic research will help achieve the goal of the research in the Hoh Xil Nature Reserve which is to integrate biological protection and medical research.

China's grassland ecosystem degrading in general (China News, 2006-05-08)

The latest result of the strategic research on the sustainable development of China's grasslands shows that China's grassland ecological environment still faces a stern situation, and the trend of

"improved in some parts but deteriorating on the whole" has not been effectively controlled.

China is a large country with nearly 400 million hectares of varied types of natural grasslands, ranking second in the world. According to the above research result, abundant grassland resources provide a vast space and great potentials for the development of grassland-based industries.

Nonetheless, the public still hold inadequate understanding towards the importance of the development of grassland-based industries, and the overall level of grassland-based economy is relatively low. In northern China, the overstocking rate exceeds 36% on average, which leads to continuous decrease of productive capacity of grasslands. The yield of grass shrank one-third to two-thirds compared to the level in the early 1960s. More than 90% of utilizable natural grasslands in China suffered from deterioration, desertification, salinization and stone desertification to some extent. Desertification is spreading at a speed of 262,000 hectares annually, mostly in arid and semiarid grasslands. Sand and earth from grasslands constitute 35% of the river load of Changjiang River every year. Since the 1950s, about 20 million hectares of grasslands in China have been cultivated, and nearly half of them have been abandoned and become barren or sandy.

The research result also indicates that the strategic train of thought of the sustainable development of China's grassland-based industries should transform from economic benefit-oriented to equal focus on economic, social and ecological benefits with ecological balance as a top priority.

China announces water and soil conservation zones

(China News, 2006-05-10)

The Ministry of Water Resources announced on Monday a list of 42 places designated as China's national-level key zones for water and soil conservation. The 42 places are categorized into three types, those under protection against possible soil erosion, those to be closely monitored, and those to be remade. This is the first time that China published a list of national protection zones for water and soil conservation since the founding of the People's Republic in 1949.

Vice Minister of Water Resources E Jingping said that these zones were scattered in 25 provinces, municipalities and autonomous regions in China, with the total area reaching 2.22 million square kilometers, accounting for 23.2% of the national territory. The area with soil erosion problem mentioned in the list amounts to 954,600 square kilometers, accounting for 26.8% of the total area stricken with such problem.

E Jingping said that China has the most serious soil erosion problem in the world, the country at present having 3.56 million square kilometers of land, or over one-third of the national territory, that suffer from soil erosion. The aim of publicizing the list is to make sure that appropriate measures are applied to each place in regard to its specific conditions, so that soil erosion problem in the country can be resolved in a more scientific way.

Three Gorges Project to complete ahead of time

(China News, 2006-05-12)

Cao Guangjing, deputy general manager of China Three Gorges Project Development Corporation, recently indicated that the Three Gorges Dam will be completed nine months ahead of schedule and the dam is expected to fulfill the function of flood control two years ahead of time.

Cao said that the Three Gorges project is a crucial backbone project to water control and development of the Yangtze River and will give rise to huge social and economic benefit in terms

of flood control, power generation and shipping. Flood control is the prime task of the Three Gorges project and no other projects can take its place.

Cao remarked that upon completion of the dam, it will be basically equipped with the function of water-retaining. Even if a rare flood in 20 years comes, the dam is able to control the flood on the upper reaches of the Yangtze River in accordance with the standard of safe flood discharge. In the case of a rare flood in a century, the dam can curb the safe let-down flow rate to not more than 60,600 cubic meters per second, which is the safe let-down flow rate standard after the Yangtze River embankment was reinforced. At the same time, water level on the upper reaches of the dam will be not more than 154 meters in altitude, indicating that the dam can fulfill the function of flood control ahead of time.

Based on analysis of experts on water resources, if the Three Gorges dam were completed when the Yangtze River regions saw a deluge in 1998, and reasonable reservoir operation were adopted, water level on the middle and lower reaches of the Yangtze River would decrease by about one meter on average and the flood control situation of the river's middle and lower reaches could be changed from the stump.

As the largest prestressed concrete dam in the world, it is 2,309 meters long and consumes 16.1 million cubic meters of reinforced concrete. The project officially commenced on Dec.14, 1994. Judging from the present schedule, the dam will be built to the prescribed altitude on May 20 this year, nine months ahead of schedule.

Scientists identify routes of sandstorms in China

(Xinhua Net, 2006-05-13)

Chinese meteorologists claim to have identified the "routes" used by winds that cause sandstorms in China.

A ten-year research project found that sandstorms affecting China were closely related to the cold front from Siberia, said Kang Ling, deputy head of the Inner Mongolia Autonomous Regional Meteorological Station.

The front swirls through large desert areas, including the Gobi Desert, often combining with cyclones in Mongolia and bringing sandstorms to China, said Kang.

Kang said the front arrived in China via three routes.

On the east, the front runs southward through central and eastern Mongolia, affecting northeast China, central and eastern Inner Mongolia, Shanxi and Hebei Provinces and areas to the south of these regions.

The central route goes southward through central and western Mongolia, affecting central and western Inner Mongolia and eastern areas of northwest China, central and southern parts of north China and regions to the south of these areas.

To the west, the front blows southward through western Mongolia and northeast Kazakhstan, affecting northeastern part of Xinjiang, the westernmost region of China, north China and areas to the south of these regions.

Kang said the routes were exactly the same passages through which sandstorms came to affect China.

Sandstorms influencing Beijing and Tianjin came mainly through the central route, which runs through a desert area in Inner Mongolia and is the closest route to Beijing and Tianjin. "Sandstorms from the central route are the worst for Beijing and Tianjin areas," Kang said.

He said some of the sandstorms originated in China and others came from abroad.

"Most of the sandstorms influencing Beijing and Tianjin areas this year came from abroad and mainly through the central route," Kang said.

Scientists from the China Meteorological Administration, the Inner Mongolia Autonomous Regional Meteorological Bureau and Japanese meteorologists have participated in the research program. They used satellite, remote sensing, radar and other high technologies to study the source regions, routes and their influences on Beijing.

They suggested that Beijing should establish a shelterbelt forest, and plant more trees to curb desertification in Inner Mongolia.

Scientists suggested that China should work with Mongolia to draft a long-term plan to prevent and curb the occurrence of sandstorms originating from the desert areas of southern Mongolia.

To date, China has invested 55.8 billion yuan (6.97 billion U.S. dollars) in projects, including tree planting, designed to prevent and curb sandstorms in Beijing and Tianjin areas.

Ecosystem of the Yellow River turns better

(China News, 2006-05-15)

The runoff of the Yellow River now stands at 895 cubic meters every second, at the highest level in the corresponding period since 1997.

The river has not been running out of water for seven years in a row since 1999 when the Yellow River Affairs Bureau began to control the river flow on a unified basis. The once worsening eco-conditions along the Yellow River have begun to take a turn to the better.

The Yellow River runs through northwest and north China from west to east. Running out of water had caused shrinking of the river way, decreasing of aquatic organisms, and reduction of wetlands. Moreover, it had also resulted in the accelerated eroding of the coastline. Statistics show the whole Yellow River Delta lost nearly 284 square kilometers from 1976 to 2000.

As the Yellow River Affairs Bureau has begun to control the river flow on a unified basis since 1999, the lower Yellow River has maintained certain runoff in every non-flood season.

According to a survey, more than 200 square meters of river way wetlands damaged due to running out of water have recovered nowadays. In addition, protection of the wetlands along the river has also led the wetlands into stable growth.

Stable river flow guarantees the multiplication of fishes. Some missing fish species since the 1980s such as *Coreius septentrionalis* have reappeared in the lower Yellow River.

Increasing of water flow has stopped the shrinking of wetlands in Yellow River Delta, to the benefit the ecosystem and biological diversity of the delta.

Xinjiang has greatly alleviated land desertification

(China News, 2006-05-17)

According to the third desertification monitoring results of northwest China's Xinjiang Uygur Autonomous Region, Xinjiang's current land desertification area has reduced approximately 5,000 square kilometers (sqkm) compared to that of five years ago. Its land desertification is slowing down.

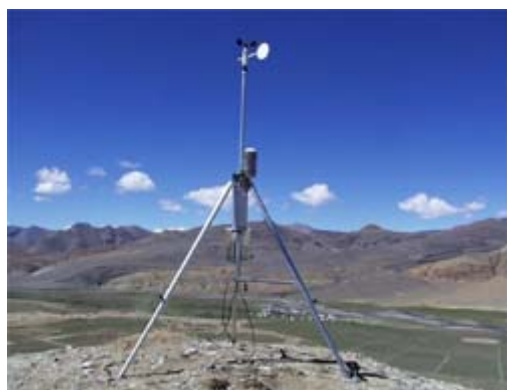
Officials from the forestry administration of Xinjiang introduced that Xinjiang's new desertified area has decreased from 380sqkm every year to approximately 100sqkm at present. In recent years, Xinjiang's desertification is slowing down.

Xinjiang has a desertification area of 420,000sqkm and occupies nearly 60% of China's total desert area. Desert expands most seriously in the Tarim Basin, the southern margin of the Junggar Basin and the lower reaches of the Tarim River.

Eco-construction projects implemented by Xinjiang in recent years, including the sand prevention and control project and the reforestation of cultivated land, have gradually improved the ecologic condition of desert areas. The overall expansion trend of desertification has been restrained initially, and the general condition has improved from "destruction outdoing protective efforts" to "protective efforts making up for destruction".

Xinjiang's forestry administration has also constituted a scheme for desertification prevention and control. It is estimated that by 2010, Xinjiang's desertification condition will have been further improved.

Atmospheric experiment over Mt. Qomolangma kicks off (CAS, 2006-05-18)



A team of researchers from the CAS Institute of Atmospheric Physics (IAP), the CAS Institute of Tibetan Plateau Research and the China Association for Scientific Expedition started a scientific experiment on the atmosphere over the Mt. Qomolangma (Everest) on May 17. It is a field monitoring part of the Land-Atmosphere Exchange in the Himalayas, a key research project jointly supported by CAS and National Natural Science Foundation of China.

Monitoring carried out by IAP scientists on the Qomolangma environment from 2000 to 2004 showed that there exists a unique local composite system of atmospheric circulation in the region. The strong wind along the Himalayas caused by the system brings atmospheric substance and energy from the upper air down to the ground, playing an important role in the global changes and the climate and environment variations in East Asia. To have an insight into the energy exchange process of the substance brought about by the atmospheric circulation, the researchers have conducted studies through a method combining observation, theoretical analyses, and digital simulation.

Prof. ZOU Han, chief scientist of the project from IAP, says that the research will offer a comprehensive and in-depth understanding of the role played by the Qinghai-Tibetan Plateau in the changes of China's climate and environment. It will greatly upgrade the forecasting level of climate and environment.

Over the next 45 days, the research team will set up a multi-level observation system by ways of a vertical profile detection of wind and temperature with radio- and sonic-radars, ultrasonic atmospheric circulation monitoring towers, seven-pointed atmospheric and solar radiation observations, as well as air and aerosol sample collection. On the basis of the experiments in 2006 and 2007, it is expected that the researchers will develop multi-scale numerical modeling to be used in the Himalayas and other regions for the exploration of the roles of the large high land on the land-atmospheric exchanges of plateaus.

iodiversity plan curbs desertification**(People's Daily, 2006-05-23)**

China's efforts to curb desertification will get a push from a programme announced yesterday by the European Commission (EC) and the United Nations Development Programme (UNDP).

The European Union (EU)-China Biodiversity Programme (ECBP), with a total budget of close to 52 million euros (US\$66.4 million), is designed to assist China in its goal to manage the ecosystem and help implement the international conventions related to biodiversity.

The five-year programme will receive contribution of 30 million euros (US\$38.3 million) from the EU, and 405,000 euros (US\$517,000) from the UNDP. The rest will come from the State Environment Protection Administration (SEPA) and partners willing to join the programme.

"The government of China is committed to reversing biodiversity losses across the country," said Franz Jessen, deputy head of the EC delegation in Beijing. The EU-China Biodiversity Programme will provide support to China in designing biodiversity policies and strategies, and in implementing those on the ground."

Arid and semi-arid areas account for more than half of China's total area, mainly in the western and northern regions.

"Biodiversity conservation in these areas is facing grave challenges posed by the harsh natural conditions coupled with the impact of irrational economic development activities of human beings, thus giving rise to the endangerment of quite a number of species," SEPA Vice-Minister Wu Xiaoqing said at yesterday's launching ceremony.

"China is one of the top nations in terms of richness of biodiversity, which is not only a huge natural life resource for China, but also a treasure for the whole world."

About 40 per cent of China's land is classified as dry-land ecosystems, and approximately half of this area has been affected by land degradation and desertification, said Kishan Khoda, assistant resident representative of UNDP China.

China signed the Convention on Biological Diversity in 1993, a treaty that seeks to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity in the world.

According to the convention, biodiversity loss in the country should be stopped by 2010.

"Though China has taken great steps to conserve biodiversity and meets its international commitments, at present, biodiversity is still being degraded," said Wang Yexu, deputy division chief of SEPA's Foreign Economic Co-operation Office.

"High-level commitment does not always lead to action in the field, and the roles and responsibilities are dispersed, sometimes overlapping and sometimes duplicating."

Part of the money will be used in policy making, monitoring and raising awareness about the importance of biodiversity in the government. Most of the money will be spent on co-financing half of the "field projects" in western and southern China.

Wang said that the EU picked western and southern China after considering their biodiversity richness and poverty.

Three Gorges Dam facing sewage threat**(China News, 2006-05-26)**

China's Three Gorges Dam that has just finished its main body construction is now confronted with the threat of one million tons of waste water every day.

Several garbage disposal plants located near the dam in Chongqing Municipality refused filthy mud from sewage treatment works in succession starting early this year, hence the latter claimed that they had no choice but to discharge about one million tons of sewage directly into the Changjiang River every day. This will render a serious threat to the Three Gorges Dam.

"If it can not be solved properly, the sewage problem in Chongqing will become the biggest threat to the Three Gorges Project," said a Chinese irrigationist.

It is introduced that from the beginning of this year, garbage disposal plants in many districts of Chongqing began to turn down filthy mud from sewage treatment works, because they were unable to deal with it. As a result, sewage plants had their regular operation affected and had to consider draining about one million tons of waste water directly into the Changjiang River every day.

It is learned that on May 16, Chongqing municipality government issued administrative orders requesting sewage treatment works and garbage disposal plants to rebuild rapport and appropriately handle sewage problems in order to prevent the Three Gorges Dam from being polluted.

International Society of Digital Earth inaugurated in Beijing (CAS, 2006-05-25)



The inaugural ceremony for the International Society of Digital Earth (ISDE), the first global collaborative research program initiated by Chinese scientists, was held on May 21 in Beijing. Digital Earth, a virtual reality planet which collects geological, geographical and space resources into one database, is expected to help economic development, environmental protection, disaster control and prevention, heritage preservation and tracking of terrorism.

CAS President LU Yongxiang, who is also the founding president of ISDE, said at the ceremony that the new academic organization will serve as "a common homeland" for the workers of the Digital Earth across the world. With its sincere commitment, indomitable efforts and efficient work, ISDE would provide an ideal platform for the researchers in the field to build up a Digital Earth in the welfare and benefits of the human race and promote the harmonious and sustainable development of the whole world, he assured.

ISDE is an international non-governmental science body initiated CAS with the joint support from a dozen or so countries such as China, Canada, the US, Japan, Czech. Headquartered in Beijing, it aims at promoting academic exchange and cooperation under the concept of Digital Earth, playing a constructive role in sustainable development of the national economy and social progress, environmental protection, mitigation of calamities, protection of the world's cultural heritage and natural resources, anti-terrorism and maintenance of the political stability worldwide.

LU said at the inaugural ceremony that it is the common responsibility of the whole of human society to explore and utilize resources on the Earth rationally and protect the environment.

"The coming of the era of an information and knowledge-based economy is changing, quietly but dramatically, people's way of living," Lu said. "The future of human development is closely

related to digits and information in every possible sense."

"It is reasonable to believe that Digital Earth is significantly important to sustain the development of human society, improve quality of life and advance science and technology," Lu said.

"We have every reason to expect the ISDE to make its own unique contribution to development of Digital Earth," Lu said.

Chinese Minister of Science and Technology Xu Guanhua and Mario Hernandez, an official with the United Nations Educational, Scientific and Cultural Organization, jointly unveiled the nameplate of the ISDE.

Seedlings of Three Gorges rare species plants stored permanently

(China News, 2006-05-29)

The seedlings of some 93 plants of rare species growing in the Three Gorges area have recently been stored permanently at low temperatures in the local rare species DNA bank, the Chutian City Newspaper reported.

These seedlings, which are preserved as the first batch, keep the genetic information of their species, and whenever needed, scientists can withdraw their DNA for reproduction purpose.

Li Xin, senior engineer of the Yichang Forestry Bureau, said that at minus 80 degrees Centigrade, these plants will be in a "dormant" status, and in theory, they can be preserved for ever. In order to find these plants, scientists had been working hard for months.

The Xiao Er Gou Tea, a species that appears on the second-tier of the national plant protection list, was first discovered by a British botanist in Xinshan, Hubei, during the early 19th century. It had never appeared since then until 2001. At present, there are only about ten such plants existing in the world now. Another plant, called Shu Hua Bo Zhi in Chinese, does not exist any more in the Yangtze River main stream. Scientists brought one seedling of such species from the Sixi Plant Protection Base in Zigui, Hubei province.

Located in the sub-tropical area in the Northern Hemisphere, the Three Gorges area was once a place where many ancient plant species living in the Tertiary period once grew. There are more than 6,000 plant species living here, 47 of them being rare species, and 37 considered unique in the area.

Studies on interaction between aridification and human activities kick off

(CAS, 2006-05-30)



The launch-meeting for a national key basic research development project (dubbed the 973 project) entitled "aridification over northern China and human adaptation" was held recently in Yangzhou City in east China's Jiangsu Province.

Based on CAS, this five-year project is to focus on the interaction mechanism between aridification and human activity, says Prof. FU Congbin, a climatologist and the project's chief scientist from

the CAS Institute of Atmospheric Physics.

Aridification over northern China is one of the most serious environmental problems in China.

Although preliminary results have been achieved by a previous "973 project" on the aridification prediction and its impacts on agriculture, water resources and ecological systems, the mechanisms on the formation of aridification still not well understood.

The project will address some fundamental problems, such as the evolution of regional environmental system and its adaptation to global change, relative contributions of natural forces and anthropogenic activity on environmental change, particularly, the transition or abrupt changes. Its main research content will cover the following four aspects: Land surface and atmospheric processes in arid/semi arid regions and their interactions with human activity; evolution, transition, or abrupt change of aridification and its predictability; impacts of aridification and its transition on food, water and land security, and corresponding adaptation measures; and development of Asia regional model of the earth system and its application to aridification prediction, impact assessment and adaptation.

The research project has the following six subcomponents: Field experiments and studies on the land surface-atmosphere interaction over different land use/cover conditions; studies on the land surface ecological/hydrological processes and their interactions; transition of dry and wet period and abrupt change of aridification and their predictability; comparative study of the aridification between that over northern China and in central Asia, northern Africa, and northern America; impacts of aridification and its phase transition on food, water and land security, and corresponding adaptation measures; and development and application of a regional model of the earth system.

1.3 Health

Bird flu outbreak reported in Northwest China

(China News, 2006-05-06)

The Chinese Ministry of Agriculture Friday confirmed outbreak of bird flu among wild birds in a remote area of Qinghai Province, northwest China.

The outbreak was confirmed by the national bird flu laboratory on Wednesday, and the number of dead wild bird had risen to 123 by Thursday, the ministry said on its website.

Dead bar-headed geese were first spotted by local herdsman in a wetland in Yushu County on April 23. Veterinarians rushed to the site and found 17 dead geese.

The samples were first sent to the provincial veterinary laboratory and later to the national bird flu laboratory for test.

The test result on Wednesday confirmed it was highly contagious bird flu.

The epidemic area is 800 kilometers from the provincial capital Xining and 60 kilometers from the county town. There are no residents nor domestic fowls in the epidemic area, which is very high and cold, the ministry said.

The area has been put under close surveillance with due disinfection measures taken.

As a precaution, cattle and sheep in nearby areas have been moved to farther pastures.

Local residents have been informed of the bird flu outbreak and told to take preventive measures.

Genetic diagnosis to be widely used by 2015: scientists**(Xinhua Net, 2006-05-09)**

Chinese scientists predicted that the genetic technologies will be in extensive use to diagnose diseases by the year 2015.

A research team under the Chinese Academy of Sciences (CAS) said recently that a great breakthrough has been made in the biotechnology over recent years, and the genetic technology will help determine the difficult and complicated diseases that were often very hard to diagnose.

Experts cited the genetic diagnosis as a very convenient one since only the samples of saliva or hair of the patients are needed. But the cost of the technology is still very high at present.

Mu Rongping, head of the research team, acknowledged that more technologies will be widely used by the year 2015 to help change the life of human beings.

Other scientific spheres highlighted by the research team which aims to forecast the key technological growth in China in the next two decades include the utilization of solar energy, building construction technology, intelligent space technology and the forth-generation mobile communication technology, as well as electronic currency, nanometric materials, combination of biotechnology and traditional Chinese medicine and treatment.

Mouse study may lead to enhanced memory**(Xinhua Net, 2006-05-10)**

Shanghai local scientists announced yesterday they have discovered a key mechanism in the function of mouse brain neurons, hinting at the possibility of enhancing human memory.

Their findings were published in the May 4 issue of the international scientific journal *Neuron*.

"Hopefully, our discovery will enlighten the future of brain research as well as the potential of human memory," said lead researcher Duan Shumin from the Shanghai Institute for Biological Sciences.

Over the past three years, Duan and his colleagues have conducted more than 1,000 tests on mice brain tissues to learn why some brain neurons cannot function. The researchers tested the function of a part of the nerve called a synapse, which transmits chemical signals to other nerves. The ability of synapses to transmit these signals is at the heart of how nerves function.

For this study, scientists focused on unfunctional or "silent synapses." Research has suggested that large proportions of silent synapses may contribute to poor memory and learning ability.

The key finding featured in yesterday's paper: that some silent synapses are caused by a failure within unfunctional nerves related to release of glutamate. Further, they found that those unfunctional nerves became functional by enhancing glutamate release using electrical stimulation.

The work grew from an accidental discovery three years ago, Duan said, when he found that silent synapses could become functioning synapses with electrical stimulation. But at the time scientists didn't know why. The latest discovery demonstrated the vital role that glutamate plays in this.

Duan's team acknowledged, however, they remain far from finding a way to activate the silent synapses in the human brain, let alone applying the research to make people "smarter."

In an accompanying commentary in the journal, Deniz Atasoy and Ege Kavalali, neuron science professors at the University of Texas Southwestern Medical Center, wrote of Duan's paper, "Their results provide a fresh look at these silent synapses and their switching to active ones."

Health experts call for mandatory flour additives**(Xinhua Net, 2006-05-11)**

Nutritional health experts have called on the Chinese government to legislate for mandatory nutritional additives to flour in order to remedy many of the country's major health problems.

The simple and inexpensive addition of nutrients in flour -- consumed in the Chinese staple of steamed buns, or man tou -- could significantly improve national health standards, an international forum in Beijing heard.

NUTRITION DEFICIENCY A MAJOR ISSUE IN CHINA

More than 200 experts heard evidence of the benefits of flour fortification at the Forum on Fortification of Wheat Flour hosted by the Chinese Cereals and Oils Association and the Center for Public Nutrition and Development of China.

Nutrition deficiency was a major issue in China, said Alan Court, director of programs with the United Nation Children's Fund (UNICEF).

UNICEF and the Ministry of Health jointly launched a Vitamin and Mineral Deficiency Damage Assessment in September 2004, which found that iron deficiency disrupted the mental development of 40 to 60 percent of the nation's six-to-24 month-old children.

Each year, up to 1,000 young women die in pregnancy and childbirth from severe iron deficiency anaemia. Folic acid deficiency causes about 35,000 to 40,000 birth defects in China annually, including infantile paralysis.

Under-nutrition resulted in lack of strength and vulnerability to chronic diseases, said Yu Xiaodong, director of the Public Nutrition and Development Center of China.

TRIAL PROGRAM TO INTRODUCE FORTIFIED FLOUR

The fortification of staple foods was "a safe, efficient and controllable, with low costs and long-term effect", said Liu Fuhe, head of the State Council Leading Group Office on Poverty Alleviation and Reduction.

He said the addition of nutrients would cost just 0.04 RMB per kilogram of flour. "People don't need to change their cooking and dietary habits to improve their health and nutrition levels -- it can be done for them."

A three-year trial program was begun by the Health Ministry and the National Grain Administration in 2002. Fortified flour was provided to farmers as compensation for converting arable land into forestry in Chengde, north China's Hebei Province, and Lanzhou, capital of the northwestern Gansu Province. The flour was supplemented with vitamins A, B1, B2, folic acid, nicotinic acid, iron, zinc and calcium.

Doctor Huo Junsheng, of the Chinese Center for Disease Control and Prevention, said the results were significant.

Before the introduction of fortified flour, the center's survey of women in Lanzhou showed daily vitamin A intake was 491 micrograms, 61 percent of the recommended international daily consumption; vitamin B1 was 0.8 milligrams, or 50 percent of recommended levels; vitamin B2 1.1 milligrams, 69 percent; and nicotinic acid 12.8 milligrams, or 80 percent.

After a year of fortified flour, the villagers' nutritional indices had all increased: vitamin A intake had risen 25 percentage points to 86.5 percent of international standards; vitamin B1 by 31 percentage points to 81 percent; vitamin B2 to 100 percent; and nicotinic acid to 106 percent.

The situation in Chengde was similar: after three years with fortified flour, the prevalence of anemia had declined by 4.7 percent; the deficiency rate of vitamin A had dropped by 28.2 percent;

while zinc levels were up by 0.04 mg per liter of blood.

A survey by the Public Nutrition and Development Center showed 74 mills in China producing fortified flour in August last year and 18 out of 31 provinces had it on the market.

STILL FACING MANY CHALLENGES

The center is experimenting with fortifying rice, another Chinese staple, but there are no successful international precedents.

"The promotion of flour fortification in China still faces many challenges," said the center's Doctor Chai Weizhong, whose research in Gansu showed 83.4 percent of people had never heard of fortified flour. Most consumers rated taste the top priority in choosing a flour and a third the whiteness of the the flour.

Chai believed technical and skills obstacles in flour-producing enterprises and fears over food safety had retarded the spread of fortified flour. "Some people think fortified flour isn't as good as 'natural' flour," he said. "Others wondered if any harmful chemical additives were added."

Participants in the forum are urging the government to legislate in favor of enhanced flour.

Representatives from Australia, Indonesia and Jordan discussed their experience of mandatory flour fortification. The United States and United Kingdom have been adding nutritional additives to flour since the 1940s and more than 70 countries have since followed.

China legislated the addition of iodine to salt in 1996 when less than 40 percent of salt contained iodine. Today, more than 95percent of the population eats iodine-enhanced salt, according to a Health Ministry report, which revealed that goiters among children aged eight to 10 had fallen from 20.4 percent in 1995 to 5.8 percent in 2002.

"Now that food nutrition has been written into the eleventh five-year plan, it is time to legislate for flour fortification," said Yue Songdong, director of the Development Research Center of the State Council.

"The National Grain Administration has formulated the National Standard for Fortified Flour, which has been submitted for approval," says Chen Jiayi, head of the macro-management division of the State Grain Administration. "Based on that, we will issue guiding principles on the management of flour fortification in order to standardize the practices of companies, and to promote flour fortification effectively."

China has basically eradicated iodine deficiency disorder

(China News, 2006-05-11)

China's Ministry of Health media spokesperson Mao Qun'an announced on May 10 at a news conference that as one of the world's countries that were most afflicted by iodine deficiency illnesses, China has on the whole succeeded in its goal to eradicate this curse.

The 2005 fifth nationwide iodine-deficiency illness medical survey shows that the country's adequate consumption of iodized salt proportion has reached 90.2 percent, goiter in children affliction ratio has been lowered to 5%, all reaching international standards of eradicating iodine-deficiency diseases. The nationwide median figure of iodine in urine samples of children between the ages of eight to ten is 246.3 microgram per liter, indicating that Chinese average iodine level are basically in line with what is acceptable, maybe even better than acceptable. At present, China no longer has new cases of cretinism.

There are 720 million Chinese living in areas lacking iodine. Since the 1950's, China has been actively organizing activities to prevent iodine deficiency. At the end of 1995, the entire country

began to implement combined preventive measures against iodine deficiency for all the people. This not only enables all citizens to show obvious improvement in the level of iodine consumption, with a reduced affliction rate of related diseases, it also effectively protects the mental health of children and raising the quality of the population by significant amount.

The survey shows that Chinese children's average IQ is 103.5, indicating that the danger of underdeveloped brains due to iodine deficiency has receded to historic low levels. United Nations World Health Organization and International Council for the Control of Iodine Deficiency Disorders have labeled China as a country with suitable iodine nutrition.

Cloned lamb died after birth

(China News, 2006-05-11)



(The first cloned Boer goat in Anhui was born on May 8.)

The first cloned Boer goat in Anhui, the second case of a Boer goat cloning in the world, died Tuesday morning eight hours after its birth because of a mechanical injury during the birth process.

Dr. Tao Yong from the Animal Science Department of the Anhui Agricultural University, who is responsible for the project, said the cloned lamb was born at 19:50 Monday morning. Since the lamb was too large (weighed 4 kilograms) and it was the first time for the mother goat to give birth, the mother goat experienced some difficulty during the birth process, and medical experts had to assist the delivery. After the lamb came out, however, it showed some abnormalities such as breathing difficulty and arrhythmia. Medical experts immediately sought help from doctors of pet hospitals and pediatricians from provincial hospitals, and at the same time consulted some famous local veterinarians and zoological experts via telephone. Despite these efforts the lamb died at 4 o'clock on Tuesday morning after having survived for eight hours.

The autopsy carried out later showed that the dead lamb's heart, lung, skin, kidney, thymus, lymph node, and reproduction system were all well developed. Yet seven ribs in its right-side chest were broken, probably due to a mechanical injury during the delivery process, which caused the lamb death.

In November 2005, a team of experts from the Anhui Agricultural University led by Professor Zhang Xiaorong conducted the cloning research by inserting the somatic cell of the Boer goat into the egg cell of the Huanghuai white goat, producing some 600 embryos. These embryos were later inserted into the bodies of 37 female sheep. The cloned lamb which was just dead was given birth by a female Huanghuai white goat. Yet its appearances showed much of contained marked features of a Boer goat.

Dr. Tao said afterwards that the autopsy result showed their cloning technology was mature overall. He expressed his regret over its death and said the team would learn lessons from the failure and do a better job in the next step.

Health official calls for tighter controls on organ transplants
(People's Daily, 2006-05-12)

China needs to improve management and laws regarding human organ transplants in order to improve recovery rates among transplant patients, a senior health official said Thursday.

China is the world's second largest performer of organ transplants, but the overall recovery rates lag behind international levels, said Vice-Minister of Health Huang Jiefu at a conference.

Poor management of organ sources, sharing, registration and monitoring of transplant patients had raised concerns in the international community, and urgent improvements were necessary, he said.

Huang called on major domestic health associations like the China Medical Association and associations of medical practitioners to set up self-regulation mechanisms to help health departments regulate transplants.

"The associations should play a role and cooperate more with health authorities," he told the annual Chinese hospital management conference.

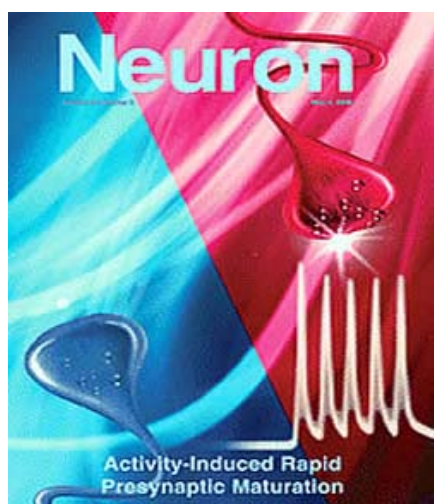
It is estimated that two million Chinese need transplants each year, but only 20,000 operations are conducted because of a shortage of organs. This has resulted in an illegal organ trade in some regions.

Foreign media have reported that organs are taken from executed criminals, but the Ministry of Health explicitly denied this in April, labeling the reports "untrue" and "malicious slander" of the judiciary system.

"Most organs in China have been voluntarily donated by ordinary citizens on their deaths, and a small number from executed criminals who voluntarily signed donation approvals," said ministry spokesman Mao Qun'an.

But he admitted that the government needed to enhance supervision and to ban improper conduct related to human organ transplant.

The Ministry of Health on March 27 issued a temporary regulation on transplants, banning the sale of organs and tightening approval standards for transplant. It will take effect as of July 1.

A new mechanism for neuron-synapse maturation discovered
(CAS, 2006-05-15)


(The cover of May 4 issue of *Neuron* highlighting the work by Dr Duan et al. The cover depicts the conversion of the silent synapse (lower left, blue) into the functional one (upper right, red), induced by high-level neuronal activity (red background and the white spike train).)

A group of CAS scientists recently made a research breakthrough in the development of synapse, the key structure of the nervous system that transmits signals from one nerve cell to another. This work was reported as cover story by the May 4th issue of prestigious journal *Neuron*.

Headed by Prof. DUAN Shumin from the Institute of Neuroscience under the CAS Shanghai Institutes for

Biological Sciences, the research group includes Duan's doctorate students SHEN Wanhua and

WU Pei, and co-workers from CAS Graduate University.

In the nervous system, the neuron, or nerve cell, is the fundamental unit that works by conducting electrical and chemical signals throughout the brain. These signals are transmitted across synapses. Previously, scientists made observations on the silent synapse, which has the synaptic structure but cannot spread the signals. Scientists discovered that, under certain circumstances, the nonfunctional synapses could be converted into functional ones. They believed that the conversion would be the basis for maturation of synapses and the human neurological functions such as learning and memory. This phenomenon sparked great interest among neurologists. According to a classical interpretation, the change is caused by the postsynaptic membrane which has NMDA receptors but lacks the AMPA receptors so that it cannot transmit signals.

However, Prof. Duan and colleagues have found another scenario in which the silent synapse was found to have AMPA receptors and the reason responsible for its silence lies in the pre-synaptic neuron that cannot release the transmission agent: glutamate acid. Also, the team discovers that the enhancement of the pre-synaptic activity can rapidly transform a "silent synapse" into a functional one. Their further research reveals that the transformation comes from the activation of the small G-protein's signaling molecule, leading to the increased polymerization of skeletal protein at the presynaptic terminals. In this way, the glutamate acid is released and thus the silent synapses can be rapidly converted into functional ones.

In his comments, Ege T. Kavalali, a renowned neuroscientist from the Center for Basic Neuroscience, the University of Texas Southwestern Medical Center, points out the work "provides a fresh look at these silent synapses and their switching to active ones," and "brings a clear mechanistic insight to this type of off/on switching, which occurs during early synaptic development contributing to the plasticity of synaptic networks." He notes that "a major strength of this study stems from its ability to bring together several disparate earlier observations... in a single coherent model."

Experts say the work will exert far-reaching influence on the synapse development and its plasticity.

Cholera cases in China may rise this year

(China News, 2006-05-16)

According to China's Ministry of Health, experts predicted that cholera cases might continue rising in China in 2006 with rather severe epidemic situation.

The ministry has urged to reinforce prevention and cure of intestine infection with the attention focused on cholera.

It is reported that after decreasing for three years in a row, cholera cases rebounded greatly in 2005 with 298% up from that in 2004. The trait of the cholera epidemic in 2005 was that the outbreak was relatively high in inland countryside due to holding dining parties, as well as in littoral areas because of dining at unclean food stalls and eating crude or half-crude marine products.

The ministry has requested that infectious disease faculties (especially intestine disease clinics) in medical institutions should exert more efforts in their work and publicize epidemic situation timely during May to October.

It is also requested that epidemic inspection should be strengthened especially on cholera cases, with the major target at working staff in catering industry, school people, and floating population. Moreover, supervision and management should also be reinforced on the sampling and inspection

of marine products.

More women infected by AIDS in Yunnan

(China News, 2006-05-16)

An international seminar titled “Preventing AIDS: Sharing the Experience and Reflecting on It” was recently held in southwest China's Yunnan province. Participants of the seminar blamed unprotected sexual intercourse as the main reason for the fast increase of the AIDS-infected women in Yunnan.

According to an official from the Yunnan Public Health Office attending the seminar, there are some changes in the way people are infected by AIDS virus in Yunnan: the number of women infected by the AIDS virus has increased drastically in recent years and the ratio of women infected to that of men has increased from 1:9 in the 1990s to the present 1:3. While drug injection still accounts for 65% of the total infection cases, infection through sexual intercourse has increased rapidly, from 0.4% in the early 1990s to the present 12%.

AIDS has been prevalent in Yunnan for over 16 years and Yunnan is considered as a place most seriously hit by the disease. It is reported that at least 80,000 people have been infected by the disease in the province and the disease shows signs of being spread from a small high-risk group to ordinary people. Experts predict that the disease might reach its peak period in 2007.

CAS scientists clone purified conotoxin

(CAS, 2006-05-17)



A group of CAS scientists have succeeded in purifying many conotoxins and cloning more than 100 new genes from six species of cone snails living in waters off the coast of the South China Sea, paving the way for the development of new drugs to relieve neuropathic pains. The work has been honored with a first prize from the 2005 Awards for S&T Progress in Shanghai.

The cone snail is a family (Conidae) of fish-, mollusk- or worm-eating marine gastropods, living in tropical coral reefs and associated habitats. They produce venom to paralyze preys before killing and eating them. The composition of the venom differs greatly between species. So far about 500 species of various cone snails have been identified, which are believed to be able to produce more than 50,000 different pharmacologically active components. Some conotoxins have shown potential for treating pains, epilepsy and other neuropathic disorders. They will be a promising treasure house for biological toxicants in addition to those of snakes, spiders and scorpions.

A research team headed by Prof. Qi Zhengwu, a CAS member from the Institute of Biochemistry and Cell Biology under the CAS Shanghai Institutes for Biological Sciences, has carried out penetrating studies on the protein structure, gene cloning and physiological functions of the conotoxins. They have been successful in identifying over 40 conotoxins and cloning of more than 100 new genes from different species of cone snails.

Although the conotoxins feature smaller molecules in comparison with other animal toxins, containing 10-40 amino-acids, says Prof. Qi, they are noted for their diversity and stable structure, easy to be synthesized and developed into new drugs with independent intellectual properties. Besides, conotoxins are highly specific, able to distinguish between nerve cells and muscle cells. This is to say, when used as a medication, a conotoxin tends to deal a telling blow more directly to the vital part and leaves no side effects.

According to informed sources, the Food & Drug Administration under the US Government has ratified a conotoxin to be used as a pain killer for advanced cancer sufferers, showing better analgesic efficacy than morphine derivatives without addiction. So far, Chinese researchers have actively joined the international community in this field.

SW China launches joint program to help brain paralytics

(People's Daily, 2006-05-21)

A Chinese-foreign cooperative program was launched in Nanning Sunday to help China's brain paralytics and the mentally challenged get better therapy and education.

It is the 16th National Day for Helping the Disabled Day Sunday. The program is conducted by the Disabled Persons' Federation of China's Guangxi Zhuang Autonomous Region and international organizations for aiding the handicapped.

The program will take four years. The international organizations for aiding the handicapped will do survey and research in this region, based on which they will set up a database and information system for brain paralytics and the mentally challenged. Specific aiding plans will then be designed according to analysis of the database and information system.

Statistics show that 70 percent of China's brain paralytics and mentally challenged children live in poor regions.

"Due to poor economy and lack of resources of rehabilitation, education and information, many children in Guangxi do not have opportunities to get timely treatment as well as education," Li Xiaofeng, an official with the regional disabled persons' federation said.

This program aims to help these children live and study as normal children and it is also considered a step to implement the country's goal of providing rehabilitation service for every disabled by 2015, Li said.

At present, China has over six million brain paralytics with an annual increase of 40,000 to 50,000 new patients. It also has 13 million mentally challenged people, including over six million minors.

Frogs communicate by means of ultrasonic sounds

(CAS, 2006-05-22)



People are always fascinated by ways that some members of mammalian species (such as dolphins, bats and some rodents) communicate using sounds that we cannot hear. But think twice if you say the capacity of producing and detecting ultrasounds (frequencies greater than 20 kHz) is limited to mammals. A study implemented by Prof. SHEN Junxian from the CAS Institute of Biophysics (IBP)

and colleagues in CAS and abroad showed that a rare frog species in China should also add to that list. It is the first documented case of a non-mammalian species being able to use ultrasonic communication. Their work was reported in the March 16 issue of the journal *Nature*.

Of the eight authors of the *Nature* paper, five come from CAS institutes. Prof. SHEN is one of its three lead authors. The other two are Albert S. Feng from University of Illinois and Peter M. Narins from University of California, Los Angeles.

The concave-eared torrent frog (*Amolops tormotus*) lives in east China's Huangshan Hot Springs alive with noisy water falls and wildlife. The small brown frogs caught attention of scientists several years ago because they do not have external eardrums and their males can produce high-pitched, bird-like melodic calls that extend into the ultrasonic range. Some of the sounds are so high that they exceeded the maximum capability of 128 kilohertz set for the researchers' recording devices. What puzzled them was if the ultrasounds were a byproduct of the frog's sound production system or were heard and responded to by other males of the species.

To test if the frogs actually communicated with their ultrasonic sounds, Feng, Narins and Shen joined forces in designing a research project by using recording equipment and a special device that allowed playback of recorded frog calls in the audible or ultrasonic ranges. With financial support partly from the Key Basic Research Program and the National Natural Sciences Foundation of China, the researchers first wanted to know if *A. tormotus* can hear ultrasounds. They recorded a male's call, split it into the audible components and ultrasonic components, and observed the responses of eight *A. tormotus* males to each of the split sounds. Five of the eight frogs produced calls in response to the audible, ultrasonic, or both components of the frog's call and three did not. Results of the behavioral observations showed that males were capable of hearing and responding to the ultrasounds.

The researchers then measured the electrical activities in the frog's midbrain that is involved in sound processing and found marked electrical responses to sounds extending into the ultrasonic range both in the averaged response of a population of nerve cells in the brain and in single nerve cells, confirming the frog's capacity for hearing ultrasounds.

The frog does so, the researchers report, to make itself heard above the din of low-frequency sounds produced in its surroundings so that it can communicate territorial information to other males of its species. It is a typical example of so-called cocktail party effect. In a noisy crowded environment, people intend to raise the frequency of their voice to offset the background noise, says Shen.

The researchers believe that, because frogs are a distinct evolutionary lineage from bats and dolphins, ultrasonic perception in the species represents a new example of independent evolution. And ultrasonic communication likely will be found in other amphibians and birds, according to Feng, a renowned auditory neuroscientist.

"Now we are getting a better understanding of why their ear drums are recessed," said Feng. "Thin eardrums are needed for detection of ultrasound. Recessed ears shorten the path between eardrums and the ear, enabling the transmission to the ear," he added in a statement.

The discovery has also drawn attention of medical research community. In addition to helping researchers puzzle out how the ear evolved, the research may one day enable scientists to develop new strategies or technologies that help people to hear in environments in which there is a lot of background noise, notes a news release by the National Institute of Deafness and other Communication Disorders (NIDCD) under the US National Institutes of Health.

"In the study of communication and communication disorders, researchers can gain a great deal of insight by looking at the natural world," says NIDCD Director James F. Battey. "The more we can learn about the extraordinary mechanisms that *A. tormotus* and other animals have developed to hear and communicate with one another, the more fully we can understand the hearing process in humans, and the more inspired we can be in developing new treatments for hearing loss."

Celastrol's Anticancer Mechanism Discovered

(CAS, 2006-05-23)



Thunder of God Vine (*Tripterygium wilfordii* Hook F.), or Lei Gong Teng in Chinese, is a plant that has been used for ages by traditional Chinese medicine to treat inflammatory conditions. In recent years it has been paid great attention by scientists around the world because of its proved efficacies in treating rheumatoid arthritis etc.. Although Celastrol, an active compound extracted from its root bark, induces leukemia cell apoptosis in for passed research, its anticancer molecular target involved has not been identified yet.

A recent joint research conducted by Prof. YUAN Xiao from the CAS Wuhan Botanical Garden (WBG) and co-workers from US shows that Celastrol is a natural proteasome inhibitor that has a great potential for cancer prevention and treatment.

Their findings were reported as cover story in a recent issue of the most prestigious journal *Cancer Research* 2006, 66(9).

Their experiments indicate that Celastrol, a triterpene induces cancer cell apoptosis by inhibiting cancer cells' proteasome. Multiple assays using the animal tumor tissue samples from both early and end time points showed in vivo inhibition of the proteasomal activity and induction of apoptosis after a Celastrol treatment.

The plant resource research of Celastrol has been undergone in WBG for years. The research has proved that the plant resource of Celastrol is abundant in China. To be a new drug in clinical trials, one of the most challenges remains to be addressed regarding with its structure optimization with high efficacy and low toxicity.

New bird flu outbreak in migratory birds reported

(China News, 2006-05-25)

China confirmed a new outbreak of H5N1 bird flu among migratory birds in western Qinghai province and Tibet Autonomous Region, the Ministry of Agriculture (MOA) said Wednesday.

The outbreak in Tibet's Nagqu Prefecture and Qinghai's Golog Tibetan Autonomous Prefecture occurred on the same migratory route where another outbreak in Yushu of Qinghai was reported early this month.

A total of 399 wild birds have been found dead in the two areas, the ministry said, noting that all

were in the wild areas where few people live and no poultry are raised.

Local governments have disinfected the areas where the dead birds were found, and no domestic poultry have been affected.

China sees no human-to-human transmission of bird flu

(China News, 2006-05-26)

"The research and development of bird flu vaccine for human has achieved initial success in the first-phase project in China," indicated Zhong Nanshan, president of the Chinese Medical Association and vice chairman of Guangdong Science and Technology Association (STA), at the seventh conference of the China Association for Science and Technology (CAST) on the 25th. He also said that China has not seen any breakout of human-to-human transmission of bird flu at present.

According to Zhong, the research and development of human bird flu vaccine has been in progress. In this March and April, researchers found out in clinic experiments that after injection, the vaccine produced corresponding antibody. The volume of antibody markedly increased 20-odd days later after the third vaccination.

Zhong introduced that currently, bird flu mostly breaks out on birds, and there is no proof that human-to-human infection has occurred. There have been two suspicious cases of human-to-human transmission in Sumatra Island (Indonesia) and Thailand. No human-to-human transmission of bird flu has ever happened in China so far.

Beijing to build Asia's largest bio-tech incubator

(Xinhua Net, 2006-05-29)

Work began on Asia's largest bio-technology incubator in the west of Beijing on Monday.

China Bio-tech Research Center proposed by the Ministry of Science and Technology is a 250,000-square meter building with lab and office space for at least 500 research groups and about 100 intermediaries.

The building will include offices for representatives from government departments who will provide administrative support for bio-tech start-ups, research entities, incubators and branches from financial institutes and offices of global venture capitals.

Wang Hongguang, director of the China Center for Bio-technology Development which is under the ministry, said, "We're going to provide a world-leading platform for bio-technological research and development, which can be used by hi-tech start-ups and even individual researchers."

Statistics show that more than 40 percent of senior-level biologists are working in the Great Beijing Area for some 40 percent of China's total national biological research programs. Another 40 percent of public funds for biological research are channeled annually to research academies based in Beijing.

Owing to a shortage of high-quality incubators, however, many innovative technologies developed in Beijing have been commercialized in other cities.

"We try to streamline the value chain from the powerful R&D capability to business profits," Wang said.

Notable progress made in key technologies R&D for HPAI prevention and control

(MOST, 2006-05-30)

Notable progress has been made recently in the key technologies R&D for highly pathogenic avian influenza (HPAI). Firstly, the aetiological research has been strengthened in earnest and the molecular mechanism of pathogenic mutation and trans-species transmission of avian influenza virus has been preliminarily elucidated, which laid the theoretical basis for the prevention and control of the human infections of HPAI. Secondly, the development of new types of animal vaccine has been highlighted and a number of avian influenza animal vaccines such as H5N2 avian influenza inactivated vaccine, H5N1 inactivated vaccine for gene recombination virus and avian influenza recombination chicken pox live carrier vaccine have been developed, which will play an indispensable role in the effective prevention and control of HPAI. Thirdly, the technical integration has been intensified and a batch of technologies and protective products for the prevention and control of HPAI have been introduced, which provides the S&T support to meet the urgent needs of the frontline of HPAI prevention and control. Fourthly, the research into the human avian influenza vaccine and antiviral drug has been sped up with notable progress, which greatly reinforced the ability for prevention and control of human avian influenza. Fifthly, the monitoring of the migration of migrant birds has been enhanced to provide the scientific basis for cutting off the channel of viral transmission.

Human stem cells go into goat embryos

(Xinhua Net, 2006-05-30)

A team of Shanghai scientists reported yesterday that it has performed the world's first successful transfer of human stem cells into goat embryos - taking an important step toward using genetic engineering to prevent disease.

The research was published in the May 16 edition of the Proceedings of the National Academy of Sciences, a US scientific journal.

"Our eventual purpose is to use stem cells to treat hereditary diseases," said Huang Shuzheng, a professor at Jiao Tong University's medical genetics institute and leader of the project.

Over the past five years, Huang's team has transplanted stem cells taken from human umbilical cords into embryos carried by 50 goats.

When the offspring were born, 39 were found to have some human genetic characteristics in their blood and internal organs.

The research showed that stem cells, unspecialized cells that give rise to specialized cells, can be taken from one biological organism and transplanted into another without rejection, the scientists said.

The 39 goats are now being raised on an experimental farm in Shanghai's suburban Songjiang District.

Researchers eventually hope to use transplants of healthy human cells to treat hereditary diseases such as hemophilia. Injected into a developing embryo, normal stem cells could be used to "fix" a genetically linked disease, scientists believe.

Previously, Huang said her team demonstrated that healthy stem cells can supplant liver-disease cells in embryonic mice.

Huang and her fellow researchers admitted that developing a stem cell therapy to cure human diseases is still a long way off.

The challenges are not only technological; there are ethical issues as well.

Qiu Xiangxing, a professor of biological ethnics at the Chinese National Human Genome Center

in Shanghai, said Huang's research so far is on safe grounds.

But he also stressed that scientists should be extremely careful in carrying out genetic studies that mix material from animals and humans.

"In China, it's not allowed to implant animal organs with human gene characteristics into human bodies," he said.

"Nor can scientists use stem cells from human embryos that are more than 14 days old."

He said Shanghai is now preparing to draw up a comprehensive code of ethics for biological scientists.

Center for stem cells and regeneration medicine opens

(CAS, 2006-05-31)



To accelerate interdisciplinary studies and cooperation with local institutions, two CAS institutes, the Institute of Zoology (IOZ), and the Institute of Genetics and Developmental Biology, have joined hands with the Central Hospital for Gynecology and Obstetrics in Tianjin, coastal city under the direct jurisdiction of the central government, in setting up a Center for Stem Cells and Regeneration Medicine.

The opening ceremony of the Center and a workshop on basic and applied research on stem cells were jointly held on May 18 at IOZ.

As the Binhai New Area in Tianjin has been listed as a region enjoying priority development in the national social and economic development plan for the next years, the Economic Development at the Bohai Sea Rim will see another high tide, says CAS Vice President CHEN Zhu. "The cooperation between CAS and Tianjin Municipality embodies the concrete efforts of the both sides in implementing the national development strategy. The newly established center will help the city to develop new industrial clusters based on latest development of life sciences."

1.4 Key Technologies

China develops robot for extra-high tension power line inspection

(People's Daily, 2006-05-03)

China's first robot for inspection of extra-high tension electricity transmission lines has been developed in Shenyang, capital of northeastern Liaoning Province.

The robot, which can move freely on and examine conditions of 500 kW power transmission lines, is the first of its kind in the world, according to the inventor, the Shenyang Institute of Automation (SIA) under the Chinese Academy of Sciences.

With growing demand for power supply, higher requirements for power supply security and stability call for replacement of human operation in the inspection of extra-high voltage power transmission lines.

The Shenyang institute's invention of the robot was funded by the 863 program, China's high technology advancement plan initiated in March 1986, and the Northeast China Grid Company. It took the SIA over four years to turn out the prototype.

Chinese robots can "wink" and "draw"

(China News, 2006-05-10)



(These two versions of robots were individually China's first robot, called Tong Tong (R), that can mimic human expressions and China's maiden robot called Bei Qi that can draw like humans.)

Two newest robots to mimic humans developed by the Institute of Automation of the Chinese Academy of Sciences faced the public in the afternoon of May 9th at the foundation

laying ceremony of the China Science & Technology Museum's new facility at Beijing's Olympic Park.

These two versions of robots were individually China's first robot, called Tong Tong, that can mimic human expressions and China's maiden robot called Bei Qi that can draw like humans. The former can show expressions through its eyes, using winks and blinks and the latter can draw on the spot. Both represent the current highest level of achievement of China's robotic research aiming to mimic humans.

Research analysts said that these two types of robots were both first of its kind to be created in China and exhibit some unique characteristics in certain critical technological areas. They can be used extensively in arenas such as science exhibition halls, malls and toy land and have very expansive market prospects.

1.5 Transport and Space

CAS President visits German Aerospace Center

(CAS, 2006-05-10)



CAS President LU Yongxiang held talks with Chairman of German Aerospace Center (DLR) Sigmar Wittig on May 8 at the DLR headquarters in Bonn.

President Lu gave an account of three research priorities in China's space science: basic research, sustainable development research and strategic high-tech research. He also briefed the DLR chairman about recent development of applied

space technology, materials science under extreme conditions and space science in China. President Lu said that there was extensive room for cooperation between China, DLR and European Space Agency. He suggested that DLR set up an office in Beijing to further the rewarding partnership between the two sides. Chairman Wittig said that the rapid development of China's aerospace would facilitate collaboration between the two sides in both basic and applied research. After the meeting, President Lu visited the DLR Institute of Materials Research and training center for astronauts.

**China begins development of positioning and navigation system for lunar probe
(Xinhua Net, 2006-05-12)**

A key project of China's Natural Science Funds, "Research of fundamental theory and key technology for modeling, sensing, navigation and control of the lunar probe system" was inaugurated in Institute of Intelligent Machines, Chinese Academy of Sciences (CAS), on Wednesday. The project was ratified in Dec 2005, and will be undertaken by Institute of Intelligent Machines, CAS, Harbin Institute of Technology and Shenyang Institute of Automation, CAS.

Aiming to develop the positioning and navigation system for the lunar probe, the project sets forth the computation of the control of soft landing of the lunar explorer, positioning and navigation system based on electronic, light and force sensors and wireless sensor network technology, and two-level control strategy comprising remote control and regional self-control. In addition, an experiment base made up of numeric model, multimedia simulation, experimental ground and simulated lunar surface, will give full support to the moon probe project.

The project, headed by Institute of Intelligent Machines, CAS, is to be completed in four years.

**Remote Sensing Satellite No. 1 starts on-orbit management
(People's Daily, 2006-05-12)**

By 8:30 a.m on May 11, Xi'an Satellite Observation and Control Center had performed tracking and observation for Remote Sensing Satellite No.1 for the four laps after the satellite started on-orbit operation. The satellite and ground systems are operating well, fully meeting technical requirements for orbit management. Data show the satellite has switched into on-orbit operation.

The Remote Sensing Satellite No. 1, blast off atop a Long March 4-B carrier rocket from the Taiyuan Satellite Launch on April 27, has completed the initial orbit flight and entered the on-orbit operation management.

Weighted 2,700 kg, the satellite is used in the fields of scientific experiment, national land resources survey, estimation of crop yield and disaster prevention and relief.

**China's home-made maglev trial line operation
(People's Daily, 2006-05-18)**

China has successfully developed and built its first medium and low speed maglev line in Sichuan Province in the southwest.

That marks China's full command of the maglev rail technology and capability of applying it into practical use.

Located in Dujiangyan city, the trial line is 419.925 meters long and the maglev train in the pilot project runs at the speed of 80 to 160 kilometers per hour.

China to develop new space transportation system**(People's Daily, 2006-05-19)**

Wu Yansheng, head of the China Academy of Launch Vehicle Technology, said on an "innovation of Beijing" summit of Beijing's social and natural science experts on May 17 that China would develop its space transportation technology by three steps and independently research and develop a new space transportation system.

Wu stated that the three-step development strategy is, firstly, to improve the existing one-off carrier rocket to meet the launch demand of actual load including satellites at home and abroad. The second step is to expedite research and development of non-toxic, non-pollution new-generation carrier rockets so as to replace the one-off launchers. The last step is to independently develop a new space transportation system and meet the demand of China's space development strategy in order to realize the target of space probe and strengthen the overall power of China's space industry.

It was learnt from a commander responsible for the launch of Shenzhou spaceships for several times that certain toxicity existed in the liquid nitrogen tetraoxide (N₂O₄) and unsymmetrical dimethyl hydrazine (UDMH) in the propellant of Long March series rockets. This toxicity was reduced through combustion and volatilization in the upper air. From now on, non-toxic propellants such as kerosene, liquid oxygen, and liquid hydrogen will be adopted, as they will only produce non-toxic and non-pollution water after burning. But this is still in experimental stage at present.

Highest speed of Shanghai-Hangzhou maglev to reach 500 kph**(People's Daily, 2006-05-24)**

Aboard the Shanghai Maglev train (Shanghai Transrapid) to the Pudong International Airport, German Chancellor Angela Merkel heard refreshing news: the designed highest speed for the Shanghai-Hangzhou maglev line will be raised to 450 kph, and it can reach 500 kph for demo purpose.

"The Shanghai Maglev line is too short. Every one wishes to make the line longer," Wu Xiangming, Chief Commander of Shanghai Maglev train project, told Ms. Merkel.

The 30-km-long Shanghai Maglev rail has only two stations, the origin station and the terminal. The proposed 200-km-long Shanghai-Hangzhou maglev line will be 200 km in length, and will allow dozens of maglev trains to run in both directions. Once built, it will announce to the world that maglev technology is complete, safe and practical.

"China is working closely with Germany to optimize the design in an attempt to lower the cost of the project and improve the competitiveness on the market. We wish to get full assistance from the German government," Wu Xiangming said.

According to the newly signed agreement, the core technology will be in the hand of the Germany, other technologies will be transferred to China. Siemens will transfer the traction power supply system and control system to its three joint ventures in China, which will be supplier to the Shanghai-Hangzhou maglev. Thyssen Krupp will transfer the technologies for carriage, switches and long stator via technology permit; the dynamic guidance system will be supplied in parts, and China will be responsible for the general assembly. The track system technology developed from the operation of Shanghai Maglev will be applied in the Shanghai-Hangzhou maglev line.

Hearing Wu's introductions about the operation and management of the Shanghai Maglev and the

plan for the Shanghai-Hangzhou maglev, Merkel commented, "Now I understand why it was that difficult when China and Germany began to build the first commercial maglev line."

She said German government will vigorously support the technological and engineering cooperation with China in the field of maglev, and she believed the high speed and market value of the Shanghai-Hangzhou maglev line is "bound to attract passengers who are willing to spend on it".

The Shanghai Maglev (Shanghai Transrapid), built in 2002, is the first commercial high-speed maglev in the world. The landmark of China-German cooperation passed the state appraisal one month ago. The line was free from any accident in the past three years. The maglev line has become a tourism attraction and transportation vehicle for numerous travelers, as well as a symbol for the rapid development of China's economic center Shanghai.

China to manufacture its first home-made ARJ21 regional jet (Xinhua Net, 2006-05-26)

China is set to manufacture its first home-made ARJ21-700 regional jet, sources with the China Aviation Industry Corporation I (AVIC I) have said.

The corporation said the designing draft and techniques of the jet have won approval from the experts and the key technical difficulties have been resolved after testifying.

Up to now, the jet's preliminary designing is about to close and most of its components are ready for the jet's installing.

The corporation said here Friday that the jet's systems and parts, provided by different suppliers, have get through preliminary joint design assessment. Some systems and parts will be available for installing in the third quarter of 2006.

The ARJ21 program was formally approved in 2002. The jet is expected to go into batch production in 2009. Currently, 40 orders for the jet have been received.

ARJ21 is the first regional jet that China has developed on its own in line with the standards set by the General Administration of Civil Aviation of China, Federal Aviation Administration and Joint Aviation Authorities.

2 News from Universities

Growth rate of university enrollments slows in China (People's Daily, 2006-05-26)

University enrollments will increase by five percent this year, a growth rate five percent slower than last year, the Ministry of Education said on Thursday.

China's State Council, or the cabinet, ordered universities to focus on improving teaching standards rather than increasing the number of students earlier this month.

Education experts believe the decision indicates an end to the rapid growth of China's universities since 1999.

The college enrollment rate stood at about 3 percent in the mid 1980s, lower than many developing countries, which rose to five percent in the early 1990s.

In 1999, when the government launched a higher education expansion program, universities enrolled 1.59 million students, up 48 percent from the previous year.

Last year, 5.04 million students enrolled, 4.7 times more than in 1998. The number of students in

higher education institutions hit 23 million last year, the highest in the world.

Many experts, students and parents believe the enrollment expansion beginning in 1999 had led to a decline in teaching quality and conditions in universities.

3 Innovation Management

CAS graduate school places more emphasis on interview in enrollment

(People's Daily, 2006-05-07)

The Chinese Academy of Sciences (CAS) Graduate School plans to increase the weight of interview on its enrollment process.

Bai Chunli, deputy CAS president and also dean of the graduate school, said on Sunday in an interview with Xinhua, that prioritizing interviews in graduate student enrollment will contribute to a fairer environment that brings the most talented students into the country's largest graduate school.

The interview will focus on logic, analysis and comprehensive abilities of candidates, as well as test their curiosity and perseverance in pursuit of scientific research, Bai said.

The CAS graduate school now allocates advisors to graduate students at the beginning of new academic years.

"We are now considering giving professors and students one year to get to know each other and then encouraging them to make their own choices," Bai said.

The existing graduate student enrollment policy was developed by state planning, Bai said, criticizing it for not ensuring the best students were admitted into the scientific research community.

Bai reiterated that the CAS graduate school will not charge tuition fees from students. Besides financial support and fellowships from the state, Bai said, the CAS will also encourage lead scientists to sign part-time contracts with their students, specifying remunerations and liabilities for their work.

Prominent scientist stresses quality not quantity of academy students

(People's Daily, 2006-05-08)

Bai Chunli, deputy president of the Chinese Academy of Sciences (CAS), said Sunday that the CAS Graduate School needs to sharpen the innovation ability of its students.

In the past five years, Bai, also dean of the graduate school, said, the enrollment had increased by an average annual rate of 22 percent. The enrollment in 2006 is kept at a similar level to that of 2005.

"We need to transfer our priority from expansion of enrollment to quality of our students," Bai said.

"In order to cultivate outstanding students," Bai said, "we should improve our education system, management system, monitoring system and appraisal system."

The education system includes syllabus designing, guidance of research papers, advisors and students. The management system is concerned with enrollment, examination, internship, academic discussion, and science paper writing, among others.

The monitoring system focuses on quality control of enrollment, courses, advisors and degree grants. The appraisal system connects performance and incentives.

"The graduate school should cultivate more promising young researchers and make new contributions to the country that has decided to pour huge investment into a knowledge-based economy," Bai said.

Leading scientist punished over chip research fraud

(Xinhua Net, 2006-05-12)

Shanghai Jiaotong University told Xinhua Friday that the Hanxin computer chip series are fake and the state-funded chip research is fraudulent, and a leading scientist has been punished.

The government-organized investigation said that Chen Jin was leading his team to conduct fraudulent research and development of the Hanxin chips for digital signal processing (DSP).

Chen, who formerly chaired the Micro-electronics School at Shanghai Jiaotong University, was found to be deceiving technological appraisal teams from the government, Shanghai Jiaotong University, Shanghai municipal government and relative ministries that invested public funds in his research project.

Shanghai Jiaotong University has dismissed Chen from his post as the dean and professor.

The Ministry of Science and Technology and the State Development and Reform Commission announced they would stop financing Chen's research project. Chen was ordered to give back the investment.

In December 2005, the university received a letter reporting possible fraudulence in the research project of Chen, who is also general manager of the Hanxin Sci-Tech Company. The university management began primary investigations and then asked the state authorities to investigate.

The Ministry of Science and Technology, the Ministry of Education and government of Shanghai organized a joint investigation team on Jan. 28, 2006.

Over the past two months, the investigation team has extensively interviewed Chen himself, whistle-blowers, research team members and other people who had access to inside information. They verified technical reports on the research, analyzed technical data and verified performance of the chips in the series from Hanxin I to Hanxin IV.

A few days ago, the investigation team notified Shanghai Jiaotong University of its technological appraisal of the Hanxin chips.

The team recognized that the Hanxin I, a simply-designed DSP chip developed by Chen, could not fulfill the functions of verifying fingerprints or playing MP3s.

The computer chip Chen displayed in Shanghai was the one the research team claimed they had worked out.

Hanxin company was mandated by another company to design the DSP soft core, which was named as Hanxin II. But the key technologies of the whole DSP are not possessed by the company.

The so-called Hanxin III was just a simple extension of Hanxin II, which could not perform well enough, the investigation team said.

Hanxin company claimed that their chips were at the high-end of world-level DSPs, but this was not proved by the investigation.

The company was also found to have made false claims that their system-on-chip (SOC), which was based on central processing units manufactured by other companies, had dual DSP cores.

On the basis of the investigation summaries, the university concluded that Chen's deeds had flaunted academic, ethical codes and the university constitution, and had brought the research

community into disrepute.

The Ministry of Science and Technology and the State Development and Reform Commission have also banned Chen from conducting any further state research and development projects.

Shanghai Jiaotong University has warned its professors and researchers to be disciplined and to comply with ethical codes in scientific research.

MOST made arrangements for the acceptance of State-level Productivity Promotion Centers and National University Science Parks

(MOST, 2006-05-18)

In order to carry out the acceptance check of projects relating to the productivity promotion centers and national university science parks of the Tenth Five-year Plan, MOST's Department of High and New Technology Development and Industrialization decided to commission the local departments (commission or bureau) of science and technology to organize relevant work. The acceptance check is expected to finish at the end of September this year.

In this acceptance check, the local departments (commission or bureau) of science and technology shall be responsible for the acceptance check of the productivity promotion center and national university science park project undertaken by the units under its administrative division during the Tenth Five-year Plan. Each unit is asked to submit to MOST's Department of High and New Technology Development and Industrialization the comment on projects that have undergone the acceptance check. With reference to the procedure and provisions of the key technologies R&D program, acceptance check shall be organized for projects that have been fulfilled but have not undergone the acceptance check. The acceptance check comment should be submitted in due course.

China to recruit foreign experts through Internet

(People's Daily, 2006-05-23)

Foreigners who intend to work in China can have interviews with employers in China through the Internet.

From May 29 to June 4 this year, an online recruitment campaign will be launched by China Association for International Exchange of Personnel.

Foreign job hunters just log on www.e-jobfair.com, view the vacancies, submit their resumes, and ask to "meet" and "talk" with the employers through an audio-visual interaction system on the web.

The whole process is free and there is no need of downloading any plugs. It is the first time that such face-to-face online international recruitment has been made possible in China.

More than 500 Chinese educational institutions and companies have registered on the web site and more than 4,000 foreign job seekers have put forward their resumes there.

The web site also links with the world's top three English teacher associations: TESOL, TESL Canada and IATEFL.

An incomplete statistics show that some 100,000 foreign teachers and experts are working in China. Nearly 5,000 universities and colleges have been approved by the State Administration of Foreign Experts Affairs to have foreign teachers.

Nation to invest \$625m in ground-breaking research in next 5 years**(Xinhua Net, 2006-05-26)**

The National Natural Science Foundation of China (NSFC) on Thursday announced an investment of five billion yuan (625 million U.S. dollars) in around 10,000 projects of bold research in the coming five years.

The investment will encourage "bold and transforming" discoveries in natural scientific research, Chen Yiyu, NSFC president, said at the Forum on Science Frontiers and China's Opportunities in the 21st Century.

"We will not necessarily invest in consensus-oriented scientific investigations," Chen said, adding that incremental public funds for research and development should be used for high-risk but high-yield research.

While allocating some funds for autonomous frontier research conducted by early-career researchers, the NSFC still emphasizes the importance of "strategic planning" of scientific research, which includes 1,800 key projects, 30 large projects and 15 research programs.

The NSFC also encourages the brightest young scientists to focus on developing ground-breaking theories, methods or tools.

Chen, who is also member of the Chinese Academy of Sciences (CAS), said the NSFC needs to tolerate fruitless research endeavors and create an innovation-friendly environment for talented scientists.

"The NSFC should be the most transparent and effective mechanism for boosting innovation in China," he said.

Based on the National Science Foundation of the United States, the NSFC was kicked off in February 1986. In the past two decades, it has channeled about 18 billion yuan into more than 100,000 research projects.

"The foundation helps China attract outstanding researchers from overseas and stabilize the home research forces," Chen said.

China has largest number of sci-tech team in the world, but lacks senior talents**(People's Daily, 2006-05-25)**

Chinese science and technology staff has totaled 21.74 million, ranking No. 1 in the world. Among them are 1.2 million researchers, according to news from the 7th national conference of the China Association for Science and Technology.

Zhou Guangzhao, president of China Association for Science and Technology said notable changes on structure have taken place in Chinese science and technology workers as the reform of science and technology system is deepened.

The ratio of senior talents has kept on increasing, with scientists and engineers accounting for 80 percent. The change in age structure was also obvious. Young and middle-aged talents below 45-year-old make up 70 percent of China's sci-tech arms.

Notwithstanding the huge bulk of the science and technology workers, senior talents are still in short supply. Strategic scientists who are capable to participate in international competition are rare. The sharp contrast deserves attention from related departments.

Only 2.26 percent of the 158 international top level scientific organizations and 1,566 2nd level organizations have Chinese scientists join their leadership. Only one Chinese scientist takes presidency of a top-level scientific organization. And only 1 percent of chiefs of the second level

international science organizations are Chinese scientists.

China's dependency on foreign technology exceeds 50%

(China News, 2006-05-25)

According to Beijing's media, Cheng Siwei, deputy chairman of the Standing Committee of the National People's Congress, revealed on May 24 that at present, China's dependency on foreign technology has exceeded 50%. Namely, half of China's technology has to be imported.

At the International Forum on the Development of China's High-tech Enterprises of the 9th China Beijing International High-tech Expo, Cheng indicated that at present science and technology only contribute 30% of China's economic development. More than half of China's technology has to rely on imports and only 0.03% of domestic enterprises own independent intellectual property rights.

He believes that if China wants to build an innovative country, it must make domestic enterprises become the main body of innovation.

It was learned that due to lack of core technology, domestic enterprises have no choice but to pay foreign patent holders 20% of the price for each China-made cell phone, 30% of each computer's cost and 20% to 40% of the price of each computerized numerical control machine.

Based on incomplete statistics, China puts out approximately 30,000 items of science and technology findings each year. However, less than 20% of these findings can become products and probably less than 5% can really be transformed into an industry. Finally, Cheng remarked that building an innovative country is neither a catch phrase nor a speedy activity. It takes long-term, down-to-earth and painstaking effort to accomplish this objective.

Premier pledges innovative conditions for scientists

(Xinhua Net, 2006-05-27)

(Chinese Premier Wen Jiabao (C) meets with the Chinese and overseas scientists attending the Forum on Science Frontiers and China's Opportunities in the 21st Century in Beijing, May 26, 2006.)



Chinese Premier Wen Jiabao has pledged to offer an innovative, fair and free academic environment for the growth of Chinese scientists, especially young scientists.

Wen made the remarks in Beijing Friday while meeting with the Chinese and overseas scientists attending the Forum on Science Frontiers and China's Opportunities in the 21st Century.

The forum was hosted by the National Natural Science Foundation of China (NSFC).

The premier urged the NSFC, which has played an important role in promoting research in basic science and frontier science, to enhance international cooperation in science and technology.

The two-day forum concluding on Friday invited lots of world elite scientists and heads of research institutes. They include Chinese-American Nobel laureates Samuel Chao Chung Ting and Tsung-Dao Lee, Ernst-Ludwig Winnacker, chairman of the German Association for Research and Arden Bement, director of the U.S. National Science Foundation.

China set up the National Natural Science Foundation in February 1986.

China to fund more scholars to study abroad

(People's Daily, 2006-05-30)

The Chinese government is to fund more scholars to study abroad to help meet the demand for skills in its social and economic development, the Ministry of Education said in Beijing Monday.

Cao Guoxing, director-general with the Ministry's International Cooperation and Exchanges Department, said the central budget allocated 2.2 billion yuan (275 million U.S. dollars) to fund scholars studying abroad from 2001 to 2005, up nearly 50 percent from the previous five years.

The central budget had increased funding for the next five years, Cao said, although he did not specify the amount of the money being added.

Statistics from the China Scholarship Council (CSC) show that 22,031 people studied abroad with government funding or resources from 1996 to 2005, including a record 7,000 last year, up 75 percent from the previous year.

Most students went to the United States, Great Britain, Germany, Australia and Canada, according to the CSC.

"As well as government funding, we'll send more scholars abroad by developing, consolidating or renewing international cooperation and exchange programs," Cao said.

The government was looking forward to selecting more graduates in key research areas, such as communications, life sciences, new materials, and energy sources and environment, said Cao.

"We aim to dispatch 10,000 graduates abroad in the next five years if adequate funding can be found," Cao said.

4 China's International Science Cooperation

Sino-French mission to explore Sun eruptions kicks off

(CAS, 2006-05-09)



(The Sun is not as quiet as it looks: the eruptions, including solar flares and corona mass ejections, occur frequently and periodically, which may bring a disaster influence on the Earth. To explore the nature of these eruptions is the task of SMESE.)

The Sun is not as quiet as it looks: its eruptions, including solar flares and corona mass ejections that occur frequently and periodically, may bring about a disastrous impact on the Earth. It can influence the performance and reliability of space-borne and ground-based technological systems and

can endanger human life or health. To get a better understanding of this fire ball, a group of Chinese and French astronomers have joined hands to start a micro-satellite mission recently.

The Small Explorer for the Study of Solar Eruptions (SMESE), a Chinese-French micro-satellite mission to make explorations in the field of solar physics, was jointly proposed by French and Chinese scientists in 2004. After over one-year preparations and evaluations, the official kick-off meeting for SMESE was held at the headquarters of the French Space Agency (CNES) in Paris from March 22 to 24, 2006, marking the formal initiation of its phase-A study.

The main scientific objective of SMESE is to observe two most eruptive phenomena on the Sun -- solar flares and coronal mass ejections (CMEs) for the next peak of solar activity predicted to occur during the period from 2010 to 2013, explains Prof. Gan Weiqun, a Chinese collaborator of the project and vice director of the CAS Purple Mountain Observatory (PMO).

According to Prof. Gan, three instrument packages will be onboard the micro-satellite: LYOT, DESIR, and HEBS. LYOT is composed of a Lyman alpha (121.6 nm) coronagraph, a Lyman alpha disk imager, and a far UV disk imager. DESIR is an infrared telescope working at 35 μm and 150 μm . HEBS is a high energy burst spectrometer working in X rays and γ rays, covering a range from 10 keV to 600 MeV. The weight of the payloads is about 70 kg, and power assumption about 90 W. The instruments will be accommodated on a French Myriad platform launched by DNEPR. The orbit will be dawn to dusk heliosynchronous at 750 km.

Astronomers expect that mission would make some breakthrough findings in the research into solar physics and in its extended scope known as space weather. It will perform the first ever solar far-infrared observation from the space, the first ever full disk Lyman-alpha routine imaging with a high spatial resolution, the first ever inner corona imaging at Lyman-alpha, and the first ever simultaneous observations for both flares and CMEs with such a combination of instruments in a single satellite, notes Prof. Gan.

The launch of the Sun exploring mission is scheduled for around 2011. Its Phase-A study is now under way with the supervision from the national space agencies of the two countries. The achievements of the Phase-A study will be evaluated by March 2007, and then the engineering stage could commence.

In addition to PMO, the principal investigator of the project from Chinese side, other major

Chinese cooperators include the CAS Center of Space Science and Application Research, Nanjing University, and National Astronomical Observatory at CAS.

Georgetown University, China Scholarship Council establish post-doctoral fellowship program

(People's Daily, 2006-05-09)

Washington, D.C. -- Georgetown University and the China Scholarship Committee (CSC) announced on May 8 the establishment of the "China Scholarship Council-Georgetown University Fellowship Program" to support graduate and post-graduate education programs for students from the People's Republic of China at Georgetown University.

Under the agreement signed by Georgetown University President John J. DeGioia and CSC Deputy Secretary General Yang Xinyu, Georgetown will support one-year post-doctoral fellowships for studies at Georgetown in fields of mutual interest such as physical, life and health sciences, public policy, applied social sciences, and international affairs. The Fellowship Program will begin accepting applicants for academic year 2007-2008, and the number of Fellows selected each year will depend on mutual needs and agreement between Georgetown and CSC.

"Through the new Fellowship Program, Georgetown will strengthen important ties with leading Chinese universities and research centers," said DeGioia. "As these scholars complete their programs at Georgetown and return to China, they will serve as vital links between Georgetown and Chinese academic communities further enhancing the relationship between the peoples of China and the United States."

"The Fellowship program will provide a significant platform for promising young scholars and teachers to broaden their research and academic experience in a vibrant international environment, which is expected to bring a positive long-term impact on the transformation process of Chinese universities and research institutions," said Yang. She added that the new program will advance CSC's objective "to develop China's exchanges with other countries in the fields of education, science and technology" and "to strengthen the friendship and understanding between the Chinese people and people around the world."

Applicants to the program should have completed a doctoral degree (Ph.D.) from a university in China within the previous five years, must be currently employed at a university or research institute in China, possess advanced English-language skills, and express a compelling and explicit statement of interest in Georgetown research and teaching projects.

Fellows will receive a stipend and travel support, as well as access to academic facilities at Georgetown, selective auditing of graduate classes and space in which to work and conduct research. At Georgetown, Fellows will contribute to the intellectual life on campus by participating in seminars, undertaking joint research with Georgetown scholars, and pursuing additional academic activities as agreed to with the host department.

China launches joint chronic disease center with WHO

(People's Daily, 2006-05-10)

The World Health Organization (WHO) and the Chinese Ministry of Health opened a joint center for controlling chronic diseases on Tuesday in Beijing.

The center will be under the Chinese Center for Disease Control and Prevention (CDC). It will focus on improving prevention measures against various chronic diseases in residential

communities, according to Wednesday's China Daily, the country's main English-language newspaper.

Chronic diseases, including cancer, diabetes and cardiovascular problems, caused 80 percent of deaths in China from 1991 to 2000; the paper quoted the ministry's statistics as saying.

Lack of timely medical treatment and efficient prevention measures such as changing bad living habits and promoting public health education are the main reasons for the high incident rate of the chronic diseases.

Wang Yu, director of both CDC and the new center, said that the chronic disease control center will collect and monitor the latest information on chronic diseases from around the country and spread update disease control advice from WHO.

"WHO can gain experience from the center and enhance cooperation with the Chinese authorities through the joint disease control effort," Henk Bekedam, WHO representative in China, was cited as saying.

Sino-German workshop on Tibetan Plateau convenes (CAS, 2006-05-12)



The 3rd Sino-German Workshop on Tibetan Plateau Research was held from April 20 to 24 in Etta, Germany. Headed by Prof. YAO Tandong, director of the CAS Institute of Tibetan Plateau Research (ITP), a group of 30 or so CAS scientists attended the conference, which also brought together 35 German scholars.

The workshop concerned Sino-German joint projects on Tibetan Plateau research. The principal project leaders and scientists who are working within the frame of the German Research Foundation (DFG) bundle project "The Tibetan Plateau Geodynamics and Environmental Evolution" and the scientists who applied for participation within that bundle project recently came together to present first results and discuss the planned research together with the cooperation partners from China. In addition, the participants made discussions on cooperation plans for 2006, 2007, and the next decade.

China-UK Joint Committee Meeting for S&T Cooperation held in Beijing (MOST, 2006-05-22)

The 4th China-UK Joint Committee Meeting for intergovernmental S&T cooperation was held in Beijing on April 28. At the meeting, both sides extensively exchanged opinions on cooperation in renewable energy, clean coal technology and modernization of traditional medicine and such key fields as infectious diseases including avian influenza, climate change, environment and sustainable development, nanometer and new materials and space technology and discussed the mechanism and mode of future S&T cooperation. After the meeting, the two sides signed the minutes of the meeting.

The Chinese delegation consisting of people from the Ministry of Science and Technology, China National Space Administration, Chinese Academy of Sciences and National Natural Science

Foundation was led by SHANG Yong, Vice Minister of Science and Technology. The British delegation consisted of representatives from the Department of Trade and Industry, Office of Science and Innovation, Department for Environment, Food and Rural Affairs and Research Council and S&T diplomats from the British Embassy in China. The meeting was chaired jointly by Vice Minister SHANG Yong and Lord Sainsbury, Parliamentary Under-Secretary of State for Science and Innovation of the Department of Trade and Industry (also known as Minister for Science and Innovation).

To further develop the copartner relationship between China and Britain for science & technology and innovation, the two sides decided to establish the liaison system for key cooperation fields and designated experts from both sides will coordinate the seminars on target fields. The meeting also set forth the fund arrangement and model of implementation scheme for in-depth cooperation in key fields, which includes the incorporation of enterprises into the innovation cooperation. The two sides will carry out further discussion on the cooperation projects relating to the establishment of joint laboratories, 2+2 model, science parks or incubators.

China, EU launch biodiversity protection program

(Xinhua Net, 2006-05-23)

China and the EU jointly launched here Monday a multi-million-euro program to protect biodiversity in the most populous nation of the world.

Supported by 30 million euros from the E.U., the program will assist China in its goal to manage its ecosystem sustainably and contribute to the implementation of international conventions on biodiversity.

"China is facing grave challenges in biodiversity protection," said Wu Xiaoqing, deputy director of the State Environmental Protection Administration (SEPA), at the launching ceremony.

He cited grave losses of biodiversity and bio-hereditary resources as well as increasingly severe invasion of alien species.

The deputy director pledged that China would continue to implement relative international conventions in an earnest manner and draw on international experience to tackle the issues.

With a total budget of 52 million euros, the project activities will mainly cover the western and southern provinces of China, focusing on desert ecosystems, alpine and plateau ecosystems, tropical and sub-tropical ecosystems as well as agro-ecosystems.

Apart from the 30 million euros grant from the E.U., the UNDP will contribute 405,000 euros and SEPA 235,000 euros. The rest of the funds are expected to come from environmental groups interested in participating in the program.

Meanwhile, the deputy director also hosted the launching ceremony of the China biodiversity Partnership Framework Project, which aims to establish a cooperative framework for China and its international partners to protect biodiversity in the country.

The project will mainly be funded by the Global Environmental Fund.

"The Chinese government is committed to reversing biodiversity losses across the country," said Franz Jessen, deputy head of the EC delegation in Beijing, at the ceremony.

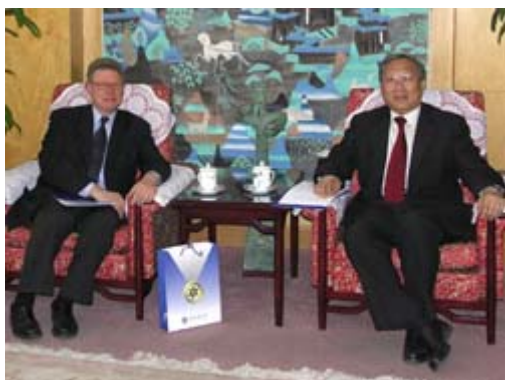
The EU-China Biodiversity Program will provide support to China in designing biodiversity policies and strategies, and in implementation, he said.

The launching of the two projects coincided with the International Biodiversity Day, and government officials and experts from China, EU countries and international organizations took

the opportunity to exchange views on how to strengthen cooperation in biodiversity protection.

CAS leaders meet with IAC executive director

(CAS, 2006-05-24)



On May 19, CAS President LU Yongxiang, CAS Vice President LI Jinghai, and member of CAS Presidium FANG Xin met with Dr. J. Campbell, visiting executive director of the InterAcademy Council (IAC), on separate occasions in Beijing.

While meeting with Prof. Lu, who is also IAC co-chair, Dr. Campbell made a brief report on the current IAC work and its research projects in the pipeline on issues such as sustainable development, S&T indices, women for science, world heritage

protection, disease prevention as well as funding arrangements for these projects. Prof. Lu expressed his satisfaction with Dr. Campbell's efforts at the IAC.

On the topic of the proposed IAC project on S&T indices, Prof. Lu stressed that the S&T evaluation and its indices are the critical factors for guiding a sound development of S&T innovations and upgrading related R&D capacities and their assessment approaches have to involve hi-tech growth, manufacturing development, technical transfer and basic research. The key in this aspect lies in building up a harmonious society, and in particular, contributing to the sustainable development and eco-environmental protection.

Regarding the IAC research projects to protect natural and cultural legacies, Prof. Lu pointed out the advisory panel for the project should have experts from advanced countries such as the US, Japan, and European countries because they are rich in experience and state-of-the-art expertise specializing in the monitoring and protection of the world heritage. In addition, the enforcement of these IAC projects should have clearly defined objectives and feasible methods as well as experts' assessment before their implementation.

Prof. Lu noted that future IAC projects should address such issues as water resources and reduction of disasters, emphasizing the founding of a worldwide monitoring & foresight system based on new knowledge and technology. He urged that a panel of experts has to set up as soon as possible to make feasibility studies.

When talking about the IAC global project against worldwide epidemics proposed by five national academies of sciences at the eve of the G8 summit, Prof. Lu stressed the multi-disciplinary teamwork composed by scientists from various fields, including those from social sciences. While making plans for future research projects, IAC should put the availability of the research funds into consideration. His advice in this aspect includes not too many projects to be initiated in a single stroke, and all priorities or key projects should be defined in a prudent and deliberated way. In the same time, he proposed an appropriate reduction of the printing expenses on its research reports.

On the same day, Prof. FANG Xin, member of the CAS Presidium and also vice president of the Third World Organization for Women in Science (TWOWS), held talks with Dr. Campbell. Fang gave an account of the research project on women scientists hosted by CAS to the guest at the

meeting. She noted that CAS is planning to host the TWOWS executive board meeting and an international workshop on women & S&T development to be held in May 2007. Also, she expressed hopes that Dr. Campbell would recommend outstanding women scientists to attend the Beijing meeting.

**Int'l conference on string theory to convene in Beijing
(CAS, 2006-05-26)**



The International Conference "Strings 2006" will be held from June 19 to 24 in Beijing. It will be jointly hosted by the CAS Institute of Theoretical Physics (ITP), the CAS Morningside Center of Mathematics (MCM), and the CAS Academy of Mathematics and Systems Science (AMSS).

About 50 leading figures in the fields of theoretical physics and mathematics will make presentations highlighting the recent advances on the subject. Prof. David Gross and Prof. Stephen W. Hawking

will offer public lectures in the Great Hall of the People.

As an annual meeting series, the Strings Conference has been held in Cambridge, UK; Kyoto, Japan; Paris, France; and Toronto, Canada in recent years.

**Int'l meeting on continental volcanism convenes in Guangzhou
(CAS, 2006-05-26)**



Under the joint auspices of the International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI), CAS, the National Natural Science Foundation of China, and local government and organizations, an IAVCEI meeting on Continental Volcanism (IAVCEI 2006) was held from May 15 to 18 in Guangzhou, capital of south China's Guangdong Province. Chaired by Prof. XU Gangyi from the CAS Guangzhou Institute of Geochemistry, the meeting brought together more

than 180 scholars from 30 or so countries and regions.

Under the central theme of the conference is continental volcanism and magmatism, this meeting offered an important forum in which geologists, petrologists, geochemists and geophysicists with diverse approaches and methodologies met and discussed and change ideas on a wide range of topics related to the origin and evolution of continental magmatism, relationships to tectonics and implications for environmental impact.

This was the first time for China to organize an IAVCEI meeting. Volcanology, igneous geochemistry and igneous petrology are growing rapidly in China and many igneous provinces just begin to reveal their secrets. I am sure we will hear a lot on those. China has a lot to offer on

this topic, says IAVCEI President Oded Navon.

China, Italy jointly invent prototype robotics system for moon exploration

(People's Daily, 2006-05-29)

Italian and Chinese scientists have jointly invented a prototype robotics system for Moon exploration, professor Carlo Ghezzi of the Polytechnic University of Milan (PUM) told a visiting Chinese journalist delegation in Milan.

"The prototype robots are under control test," Ding Xilun, a Chinese professor who heads the Space Robots Laboratory of the Beijing University of Aerospace and Aeronautics, confirmed to Xinhua in a telephone interview on Sunday.

He said that current research was being centered on intelligence control and communication.

The project was initiated in 2004 with Alberto Rovetta, director of the Robot Lab of PUM's Mechanic Department.

Besides the prototype, scientists have also completed system design, structure design, sampling arm, sensors selection, locomotion planning and simulation of lunar environment.

The Novel Robotic System for Space Exploration, or "NOROS-1" for short, involves a robot family with one host robot and four assistants.

Upon the project's completion in 2008, these robots, each measuring 40 to 80 cm in diameters and weighing 12 to 30 kilograms, would be equipped with a wheel/leg locomotion system which allow them to move as they want and respond to the land situation on the Moon.

These intelligent robots would cooperate with each other like human beings and remain unaffected by the malfunction of other robots.

Ding said that the final test of the whole system would be conducted in Beijing.

"Once the products are put to use, there will be an automatic robotic system on the Moon to manage and improve satellite communication. They can also be used to explore the environment of the Moon and collect soil samples on the Moon," he added.

The research program has been listed into the Sino-Italian Science and Technology Cooperation Plan in early January.

5 Miscellaneous

China to build world-class science museum

(People's Daily, 2006-05-09)

China has undertaken to build a world-class national science and technology museum in the 2008 Olympic Park north of Beijing.

By investing in this project, the Chinese government hopes to show the world during the Beijing Olympics the scientific and technological attainments scored by the Chinese in recent decades, said Deng Nan, Vice President of the China Association for Science and Technology (CAST).

The proposed project will cover a floor space of 48,000 square meters. The mainly rectangular building, which is designed jointly by the Beijing Architectural Design Institute and its American partner, will have a unique shape against the backdrop of other buildings and stadiums inside the Olympic Park.

The whole building is expected to open to the public in 2009, but some areas will be accessible by the inauguration of the Beijing Olympics on August 8, 2008. The museum is scheduled to arrange sports, science and technology and culture exhibitions for Olympic athletes and visitors.

The existing national science and technology museum is located in the northern part of downtown Beijing.

China maps out Informatization development strategy

(Xinhua Net, 2006-05-10)

The State Informatization Development Strategy (2006-2020) published by General Office of the CPC Central Committee and General Office of the State Council sets forth China's goals in informatization development for the next 15 years.

The goals for informatization development in the next 15 years are: providing information infrastructure nationwide; strengthening capacities of independent innovation of information technology; optimizing the information industry structure; improving information security; making effective progress on building more information-oriented national economy and society; establishing the new type of industrialization model; building a perfect national policy and system for the informatization process; enhancing the capability of applying the information technology among the public.

In the Strategy, nine key aspects are emphasized: promoting informatization of the national economy; popularizing e-government; establishing advanced Internet culture; pushing ahead social informatization; popularizing information infrastructure; exploiting information resources more efficiently; improving information industry competition; building national information security system; improving people's ability in using information technology and cultivating more talents in information technology.

Implementation of the Strategy will lay a good foundation for China which is striding toward the information society.

After years of development, China has stepped into an all-around, multi-level period of informatization development. As China is in the process of building a moderately prosperous society in all respects, vigorously pushing forward informatization development will be crucial in promoting social and economic development.

The informatization development is advocated when China urgently needs to grasp opportunity and meet challenges as well as the requirements for the change of the pattern of economic growth, upgrading development concept.

Great success in China's research into key technologies of exploration and development of large and medium-sized oil fields

(MOST, 2006-05-10)

As a project of the National Key Technologies R&D Program in the “10th Five-year Plan”, “China’s Research into Key Technologies of Exploration and Development of Large and Medium-sized Oil Fields” was unanimously accepted recently by the experts of the Acceptance Committee organized by MOST’s Department of Social Development.

Implementation of this project resulted in 36 new products, 56 new technologies and processes and 3 kinds of new materials. During the “10th Five-year Plan”, the newly proven petroleum in place was 1.52 billion tons and the recovery ratio in the experimental area of the old oil fields in the eastern China increased by 3%. The research project involved 1,405 people in a number of disciplines and specialties such as petroleum geology and petroleum reserve engineering.

Dunhuang faces serious ecological crisis

(China News, 2006-05-12)

Dunhuang, a city known for the Mogao Caves in northwestern China, is facing a serious ecological crisis owing to shortage of water.

In Dunhuang, wetland is shrinking at a speed of 20,000 Mu (3,294.7 acres) per year. By the year 2005, wetland there had reduced almost one-third to merely 2.7 million Mu. On the oases there, 80% of the 10,000-odd Mu salt water lakes and 1,000-odd freshwater lakes have disappeared.

500,000 Mu of land in Duhuang City suffer from desertification. Since 1994, the area of desertified land on the periphery of the oases in Duhuang has increased 200,000 Mu, equal to nearly 20,000 Mu annually. Desert has eaten up four meters of oasis there.

"Without effective control, Dunhuang will become the second Loulan, a lost ancient kingdom on the Silk Road, in 50 years," warned Prof. Luo Juxiang with Beijing Forestry University five years ago.

The world-famous Mogao Caves have also been threatened by wind and sand erosion as well as dust. "Strong sandy wind blows on the statues and frescos in the caves like a sand paper abrading them," said Fan Jinshi, director of the Dunhuang Academy. "The sandy wind is blowing more and more powerful and can even abrade off the paint on cars, not to mention that these statues and frescos have endured over 1,000 years of weathering."

Plenty of sites to keep surfers busy

(Xinhua Net, 2006-05-18)

The number of Websites registered in the country reached 2.6 million at the end of last year and 1.1 million have a ".cn" domain.

Websites increased 40 percent last year over 2004, said a report released by the Informatization Office under the State Council. Websites with the domain .cn increased 154 percent in 2005, becoming the largest national domain in Asia and sixth largest in the world. Companies launched 60 percent of those Websites and individuals started 21.9 percent.

CAS institutes open doors to the public
(CAS, 2006-5-22)



During the National Science and Technology Week from May 20 to 26, CAS institutes offered open days to the general public on May 20 and 21. The opening ceremony for the event was held on May 20 at the CAS Institute of Geographic Sciences and Natural Resources Research in Beijing.

It is an important mission for CAS to contribute to the upgrading of public scientific literacy, says CAS Vice Secretary-general SHEN Baogen at the ceremony. By opening the doors of its institutes and

labs, CAS scientists strive to help the general public understand the latest S&T development and their social and economic impact.

Under the theme of Science and Technology for an Innovation-oriented Country, the event involved more than 1,000 scientists, including 60 or so CAS members, from 70 CAS institutions. They offered public lectures, held talks with school students, and show visitors around their labs.

Interview: perseverance makes success
(Xinhua Net, 2006-05-24)

"Science development attributes to the pulling down of predecessors' ideas," the third Chinese Nobel Laureate in Physics Samuel Ting told the reporters at an interview on Tuesday.

The 70-year-old scientist, who works at the Massachusetts Institute of Technology in America for Nuclear Science, was invited to Hong Kong to be one of the four speakers of the Nobel Laureates Distinguished Lecture, which was held on May 22 to 23, organized by the Chinese University of Hong Kong.

One can find that it is the unswerving character of Ting that made him a successful scientist.

"When I did my first experiment, most physicist thought it was meaningless, but I insisted on it and finally got the result which proved my assumption," said Ting.

By perseverance, Ting made a lot of new discoveries in Physics and the "J-particle" found in a very precise experiment made him winner of Nobel Prize in Physics in 1976.

"If you do not have pure science, you won't have technology development," Ting emphasized on the importance of pure science and basic research, because without these, after some time, there will be nothing to transfer.

Labeling himself as "not a good student", the scientist with great achievement said that he was not outstanding at school as people might have thought.

"I couldn't remember, but I'd say it will be easier to count from the last," he answered a question about his rank of position in class when he was small.

Ting's parents were professors at universities and they never put pressure on children's performance at school, as they thought having good health was more important than anything else. They gave Ting freedom to develop his own path which has got great influence to his career.

Ting said he became interested in studying when he entered the University of Michigan in America. He was grateful that the university helped him the most in his studies, and was being

very supportive by allowing him to take whatever course he liked.

Talking about family, Ting said his wife, who does research work in psychology, has helped him a lot as well. "She is a person who always put family and children in high priority," Ting was thankful to his wife's sacrifice of putting relatively fewer time on her own job.

Ting is currently busy at doing a large scale research with scientists from America, Russia, Europe and Chinese Mainland to look for antimatter in space which is about to come up with a result.

China encounters technological "firewall" from the West

(China News, 2006-05-25)

As western countries regard "advanced technologies" useful weapons to compete against emerging China, it becomes more and more difficult for China to purchase advanced technologies from the West. China has encountered a technological "firewall" set up by western countries.

For instance, since 2000, the United States has sold no satellites to China, and the US State Department even set up barriers to selling China two satellites according to a contract originally signed in the 1990s. In contrast, Lockheed Martin Corporation, a US military supplier, has signed a contract with Vietnam to build a satellite for that country.

The US satellite "ban" against China made the latter bog down in commercial satellite launch. Until 2005, Chinese companies engaged in launching commercial satellites has not sent out a single foreign satellite, while Europe and Japan have grasped this opportunity to occupy the market left behind after China's retreat.

The European Union has also been enforcing restrictions on exporting advanced technologies to China for half a century, and at one time more than 500 materials were "banned to China".

Sometimes these bans look ridiculous. In 2003, some American congressmen wrote to Colin Powell, the Secretary of State at that time, asserting that the Boeing planes exported to China were equipped with QRS11 chips, which could be used in the "missile control system". That almost blew the Boeing order worth 1.7 billion US dollars signed between China and the US.

In the same year, the French government refused to sell China reconnaissance satellites with a definition of less than one meter because "it might threaten allies". Five years earlier, however, France has sold Taiwan reconnaissance satellites of the same type with an even higher definition.

Chinese specialists pointed out those western countries are building a "firewall" against China's rise with their own advanced technologies. They have switched from initially limiting military technology exports to restricting hi-tech civilian technology exports to China in order to ensure their commanding strength and guarantee that native enterprises holding those technologies can make more profits from China.

Experts advise the only way to break this technological "firewall" set up by western countries is independent innovation. Just like those countries, China should attach importance to intellectual property rights and focus on developing its own original technologies in the future.

More foreigners study in China

(People's Daily, 2006-05-30)

International students in China exceeded 140,000 in 2005 and increased by 32% compared to the number in 1998, according to the press conference held by the Ministry of Education on Monday.

The reasons are that China is more and more influential internationally and the quality of Chinese higher education is improving.

During the last 10 years, the number of international students winning Chinese government scholarship has increased from over 4000 yearly to more than 7000 each year.

In the ten years from 1996 to 2005, financially supported by state scholarship, 22,031 Chinese students went abroad to study and 97.02 percent of them, which are 18,098 students, returned to China on schedule.

From 1978 to the end of 2005, Chinese students studying abroad totaled 930,000, among whom 230,000 have returned. Out of the 700,000 Chinese students still staying abroad, about 160,000 have finished their study and begun to work, while 500,000 are still studying.

From 2000 to 2005, state-funded students abroad make up 7% of the students studying abroad while those self-supported make up 93%.

China Scholarship Council set up Chinese Government Award for Outstanding Self-financed Students Abroad in 2003. For the three years since then, 501 self-financed students abroad won this scholarship which is 5,000 US dollars per person.

2005 Chinese top ten list of sci-tech figures unveiled

(People's Daily, 2006-05-31)

The awarding ceremony of Chinese top ten science and technology persons in 2005 was held at the Great Hall of People on May 28.

The ten sci-tech figures of the year are (in number of strokes sequence of Chinese characters):

Deng Zhonghan, designer of China-made digital video chip, also president of Zhongxing Micro-electronic Co. Ltd.

Deng Yajun, women scientist, helping to find identification of Indonesian tsunami victims with DNA test, from the Beijing Genomics Institute under the Chinese Academy of Sciences (CAC).

Wang Chunsheng, chief scientist of China's first round-world oceanic research expedition team.

Wang Houde, biotechnologist, conferred on Award of Special Contribution by the United Nations

Shi Zhanhua, engineering expert who successfully designed the world longest undersea oil pipeline with longest diameter.

Zhang Qingjun, an associate chief designer of Shenzhou VI manned space flight from China Aerospace Science and Technology Corporation.

Zong Baoning, the top winner of the national technology invention in 2005.

Fei Junlong and Nie Haisheng, who successfully finished the second manned space flight.

Zhan Jiajin, designer of China-made first color TV chip.

Guo Sandui, a leading scientist of the Chinese Academy of Agricultural Sciences (CAAS), who successfully developed a new hybrid variety of genetically modified (GM) cotton that can not only kill worms, but also increase output.

This activity was jointly sponsored by Science and Technology Daily and the China Aerospace Science & Technology Corporation.

6 Information for upcoming Workshops in July

The Fifth International Conference on Information and Management Sciences (IMS)

Date: July 01 – July 08

City: Beijing

<http://orsc.edu.cn/IMS2006/>

The 15th World Congress of Pharmacology

Date: July 02 – July 07

City: Beijing

<http://www.iuphar2006.org/iuphar/>

2006 International Conference on Design of Experiments and Its Applications

Date: July 09– July 13

City: Tianjin

<http://stat.math.nankai.edu.cn/doe.htm>

36th COSPAR Scientific Assembly

Date: July 16– July 23

City: Beijing

<http://www.cospar2006.org/index.htm>

The Joint 19th International Vacuum Nano-electronics Conference and the 50th International Field Emission Symposium

Date: July 17– July 20

City: Guilin, Guangxi Autonomous District

<http://display.sysu.edu.cn/ivnc-ifes06/>

International Conference and Instructional Workshop

Date: July 17– August 14

City: Beijing

<http://qjpam.henu.edu.cn/add/AboutWorkshop.htm>

The Annual Meeting of the Association for Tropical Biology and Conservation

Date: July 18– August 21

City: Kunming, Yunnan Province

<http://atbc.xtbg.ac.cn/announcedetail.shtml>

1st International Conference on Rough Sets and Knowledge Technology

Date: July 24– August 26

City: Chongqing

<http://cs.cqupt.edu.cn/CRSSC/RSKT2006/>

Abbreviations

- CAS** - Chinese Academy of Sciences
MOST - Ministry of Science and Technology