

NO.631

CHINA SCIENCE AND TECHNOLOGY

# NEWSLETTER

The Ministry of Science and Technology  
People's Republic of China

NO.631

September 20, 2011

## IN THIS ISSUE

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- \* Attracting More Overseas Talents
  - \* New Marine S&T Planning Outline Released
  - \* WAN Met with Costa Rican Guests
  - \* China Wants More Nuclear Talents
  - \* Golden Monkey Selects Winter Habitat for Sunshine
  - \* Super Rice Landed a Yield over 900kg
  - \* Chinese Herb Fights Hepatitis-B Virus
  - \* A Large Rong Men's Cemetery Found
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## SPECIAL ISSUES

Attracting More Overseas Talents



The Chinese Ministry of Science and Technology (MOST) and the State Foreign Experts Bureau jointly inked on September 13, 2011 a framework agreement to recruit overseas talents for major national projects. The two sides will work together bringing in more high caliber talents for major national projects, taking advantage of their respective strength in management and resources.

Both sides will accommodate the needs of major national projects for talented people, taking advantage of international collaboration opportunities commonly seen at a major national project. They will tap up high-end innovation talents from overseas sources, ensuring the smooth operation of major national projects that are designed to produce major strategic products and key generic technologies. The two sides will also strengthen international academic exchanges and the training of academic leaders in the area of science and technology, enhancing the capacity building of S&T personnel and innovation teams.

According to the accord, the State Foreign Experts Bureau will initiate a special talents recruitment program for major national projects, sponsoring talent recruitment projects and associated training courses, and rendering the needed support to the endeavor. The Ministry of Science and Technology will coordinate the recruitments in a categorized manner, rendering reviewing services to recruitment applicators, and assisting the State Foreign Experts Bureau to supervise and govern the recruitments projects.

ZHANG Jianguo, Vice Minister of Human Resources and Social Security and Chief of State Foreign Experts Bureau, said during the 11th five-year period (2006-2010), the Bureau has launched more than 700 projects to recruit overseas talents for major national projects, assisted international cooperation and exchanges by ten thousand person-times, and rendered a wisdom contribution to major national projects.

XU Jing, Director of MOST Major Projects Office, told reporters that as of September 2011, some thousand talented people have been recruited for major national S&T projects via a thousand talents program. In addition, each year many overseas high caliber S&T personnel would become part of major national S&T projects through collaborative research, visits, and exchanges.

## New Marine S&T Planning Outline Released

A national conference was held on September 16, 2011 to discuss marine science and technology issues in Beijing. At the meeting, a range of government agencies, including the State Oceanic Administration, Ministry of Science and Technology, Ministry of Education, and National Natural Science Foundation, jointly released an outline for preparing the national marine science and technology development planning for the 12th five-year period (2011-2015), which will deploy marine S&T activities for the coming five years, with some deployments running through 2020.

The Outline says in the coming five years, China's economic development will become more depend on marine activities. As a result, during the 12th five-year period, the contribution rendered by marine S&T activities to the marine economy will go up to 60% from 54.5% in the previous five-year period. China will generate more proprietary marine technologies, enjoying an increased number of patents by 35%. The Outline also says by 2020, China's overall level of marine S&T activities will sit among the world's most advanced, supported by a marine research system and an innovation contingent that are able to meet the needs of the national economic and social development. China will foster a service and support capability that covers China's territorial waters, adjacent waters, and major areas in the world. Meanwhile, China will see a noticeably enhanced innovation capability that meets the needs of maritime activities, including the development, protection, and utilization of marine resources.

INTERNATIONAL COOPERATION

WAN Met with Costa Rican Guests



WAN Gang, Chinese Minister of Science and Technology met with Alejandro Cruz, Costa Rican Minister of Science and Technology, on September 5, 2011 in Costa Rica's capital San Jose. The two sides had an in-depth exchange of views on furthering the bilateral ties in the area of science and technology. WAN said since the signing of the S&T cooperation agreement between the two countries, scientists in the two countries have worked together in a range of areas, including agriculture, biodiversity, and high technologies. The bilateral S&T cooperation between the two countries has proceeded well on a solid foundation with broad perspectives. Both sides are willing to establish a long-term cooperation mechanism, deepening pragmatic collaborations in the priority areas, strengthening the collaborations between research institutions and industry, and facilitating the exchanges of young scientists.

Cruz shared some suggestions made by WAN, pointing out that China and Costa Rica shared similar views on innovation policy, priority areas of development, and young scientists' training, and are highly complementary to one another. Costa Rica will continue to promote pragmatic bilateral collaborations between the two countries in the area of science and technology, facilitating the economic and social development in the two countries.

### China Wants More Nuclear Talents

With the approval of Chinese Ministry of Education, a Nuclear Engineering and Technology School, jointly established by Sun Yat-sen University and the French Civil Nuclear Engineer



Teaching Alliance (FINUCI), was inaugurated on September 14, 2011 at the campus of Sun Yat-sen University in Zhongshan. The new school will bring out high-end nuclear engineers for China, taking advantage of the training models and experience enjoyed by FINUCI.

According to the plan, one has to study for six school years to complete the entire courses, with first three years for basic courses, and the rest three years for engineer courses. During the first three years, courses will be delivered by French professors under a discussion oriented teaching model. Engineer education courses will be taught by both French and Chinese specialists in line with the French model for nurturing an engineer. Students will have their internships at Chinese and French research institutions.

The School admitted its first batch of students in July 2010. Of the first enrollment, 99 students are the freshmen. In 2011, the school admitted 100 freshmen in the second enrollment.

## RESEARCH AND DEVELOPMENT

### Golden Monkey Selects Winter Habitat for Sunshine



CAS Kunming Institute of Zoology announced on September 16, 2011 that the latest research results derived from the collaborations between its Environmental Protection Center and CAS Xishuangbanna Tropical Botanical Garden shows that the so-called "sunshine scenario" is able to explain Yunnan snub-nosed monkey's choices of their winter homes.

According to a briefing, before the arrival of winter, some migratory animals would shift from high latitudes to lower latitudes, while some others moving vertically from high altitudes to lower altitudes. However, the non-human primates dwelling on the highest elevation in the world, such as Yunnan snub-nosed monkeys, prefer to live through winters at medium and high altitudes. Researchers studied the 'abnormal' behavior of snub-nosed monkey by tracking down their migration in southeastern Tibet. Geographic information analysis shows that snub-nosed monkeys prefer to live through winters at an altitude ranging from 4100m to 4400m, though they would habitually make the altitudes of 3500-4500m their desired homes. Researchers found that the target sites enjoy a raised solar radiation intensity and sunshine duration over an increased altitude, though the temperature would come down over the same increase of altitudes, suggesting that snub-nosed golden monkeys select their winter habitats in line with solar radiation intensity and sunshine duration. In addition, snub-nosed golden monkeys would, after a snow fall, move to high altitudes where snow usually melts quickly and main food lichens are exposed earlier, under stronger solar radiation and longer sunshine duration.

Researchers believe that the findings confirm the fact that solar radiation makes an important factor for snub-nosed monkeys choosing their winter habitats, though it differed from the previous explanations that wildlife's seasonal migration patterns have to be determined by food abundance, temperature, and predators. In this context, "sunshine scenario" makes a rational explanation to Yunnan snub-nosed monkey's unusual preference for their winter habitats.

## Super Rice Landed a Yield over 900kg

Y-Liangyou-2, a super hybrid rice line grown by Father of Hybrid Rice Yuan Longping in Yangguao Township, Longhui County, Hunan Province, embarked on harvesting on September 18, 2011. Farmers harvested the ripen rice under the guidance of a Ministry of Agriculture expert panel led by CHENG Shihua, witnessed by hybrid rice specialists from different parts of the country. The expert panel selected 18 plots in 107.9 mu (1 mu= 0.0667 hectare) of super hybrid rice for harvesting. The harvested rice went through a range of procedures, including threshing, screening, moisture measuring, before getting weighed. According to a briefing, the new rice line has hit a record high unit yield at 926.6kg per mu.

## Chinese Herb Fights Hepatitis-B Virus

Not long ago, CAS Kunming Institute of Botany researchers found for the first time that the ethanol extracts derived from a Chinese herb named Qingyedon, mainly grown in Yunnan, is significantly inhibitory to HBV activities. Researchers also unveiled major active components in the herb that are inhibitory to hepatitis B viruses.

Researchers isolated 52 individual compounds, including 26 new compounds, from the active parts of the herb. They spotted seven Swertia lactone with novel structures, 4 split dimerization iridoid glycosides, and a string of split iridoid aglycones and glycosides. Researchers defined the possible biogenic pathways for Swertia lactones AD and HK. A study of the herb's activity shows that 15 compounds are HBV inhibitory, with Swertia lactone HK, in particular, enjoying a significant inhibitory effect on HBV DNA replication, equivalent to the effect of clinical anti-HBV drug Lamivudine. A preliminary study also indicates that it has an inhibitory mechanism that is differed from the clinically available anti-HBV drugs.

## Egg Reprogramming Secrets Unveiled

Two study teams, led by XU Guoliang and LI Jinsong respectively at Institute of Biochemistry and Cell Biology under CAS Shanghai Institutes for Biological Sciences, reported their latest findings on egg reprogramming mechanisms in the September 5, 2011 issue of *Nature*, helping people to improve their knowledge of reprogramming mechanisms in natural fertilization and cloning processes, and in early embryos' development.

Financed by the Ministry of Science and Technology, National Natural Science Foundation, Chinese Academy of Sciences, and Shanghai Municipal Science and Technology Committee, researchers found in their study that the egg cells' female parent protein named "Tet3" can oxidize sperms' DNA, regulating the expression of male parent genes and supporting the smooth development of early embryos. Animal experiments showed that female rats, when removed from "Tet3", would register a significantly declined fertility, which may make most parts of the embryo shrunk, and eventually be absorbed by the conceived. "Tet3" also plays a similar important role in animal cloning processes.

According to XU, protein and nucleic acid methylation plays an important modification role in regulating genes' expression and on-and-offs, closely associated with animals and plants' growth, development, and diseases. As a result, DNA methylation can deactivate certain genes, while demethylation is able to induce genes to be re-activated and expressed. Previously, scientific communities are not clear about how methylation works on its chemical modification and why. The finding provides a new theoretical ground for developing right means to treat female infertility, and for raising the efficiency of animal

cloning.

## Fine Pig Species Cloned

Beijing Genomics Institute (Shenzhen) announced on September 15, 2011 that it has managed to see the birth of six healthy cloned piglets on August 31 and September 2, respectively. Physically fit, the cloned piglets looked almost exactly the same, with the largest birth weight at 1.6kg. The piglets' eyebrows have inherited the black birthmark of their donor father, nicknamed "strong pig".

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After a strong earthquake occurred on May 12, 2008 in Wenchuan, a domestic pig survived being buried in an extreme environment for 36 days. Unfortunately, the 5-year old "strong pig" lost its fertility completely after the earthquake. To inherit the strong pig's unusual tolerance traits, Beijing Genomics Institute studied the pig's tolerance and health at the molecular level, starting from February 16, 2011. Researchers collected tissues from the pig's ear, making them into fibroblasts for embryo cloning. On May 12, researchers transplanted healthy embryos into two surrogate sows. After 110 days of vivo embryonic development, surrogate sows gave birth to the offspring of the "strong pig".

NEWS BRIEFS

## New Communication Satellite Launched





At 00:33, September 19, 2011, China successfully blasted off Chinasat-1A aboard a CZIIIB launch vehicle, from the Xi'chang Satellite Launch Center. The satellite has entered the preset transfer orbit. Developed by China Academy of Space Technology, the satellite is able to provide high-quality voice, data, radio, and television transmission services, desirable for upgrading China's communication and broadcasting services.

### A Large Rong Men's Cemetery Found



Archaeologists unearthed a large Rong Men's cemetery in the Huangling County, Shaanxi Province, providing important information on the Xirong Men, an ethnic group originated from the Zhou Dynasty. To rescue possible ancient remains at a worksite that will be built into a water reservoir at Nanmengou in Yan'an, Shaanxi Provincial Archaeological Research Institute sent an archaeological team to the site. Researchers have since last April unearthed some 80 tombs of more than 100 tombs built in the Warring States period, unveiled bronzes, potteries, and iron tools. SHAO Jing who heads the excavation told reporters that the unearthed objects, especially the copper Ge and bronze swords, are bearing a close tie with the Wei State. In this context, researchers believe that the nature of the unearthed objects suggest that the site is a place where the Rong Men used to live.

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