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Supreme Leader Kim Jong Un inspects military units

Kim Jong Un, chairman of the Workers' Party of Korea, chairman of the State Affairs Commission of the DPRK and supreme commander of the armed forces of the DPRK, inspected the Changrin Island Defending Unit on the western front.

He said that all the soldiers who fulfil their sacred duty to defend the country with arms of the revolution in their hands on a remote island on the frontline are our precious comrades-in-arms and beloved children of the people and that we should take responsibility for their growth before the people. In order to make the service personnel further train themselves to become staunch revolutionaries and true human beings through their military service, he said, it is important to help them learn the spirit of collectivism and develop their identity, independence, assiduity and devotion through the fulfilment of military tasks and life experience, to educate and lead them to voluntarily observe steel-strong military discipline and cherish a sense of patriotism and comradeship and to get them to have the revolutionary world outlook properly. To this end,

constant attention should be paid to the political and ideological, moral and cultural education, he noted.

He acquainted himself with the conditions of school and kindergarten of the island defending unit, taking meticulous care of the education of the children of officers' families.

He met the soldiers on duty to defend the frontline as he looked round the gun emplacements of the coastal artillery company of the island defending unit.

The military equipment of the defending unit is important, but more important is to arm the servicemen in defence of the country's frontline with

a high sense of class consciousness, he said. He said that he visited the defending unit without notice on an ordinary day like that day, he feels relieved to see all the service personnel keep a close watch over the frontline with high vigilance and the frontline of the country is firmly defended thanks to the servicemen's high political awareness, sharp vigilance, will to defend the country and devoted efforts. As it has such reliable KPA service personnel, the country's security and people's happiness are firmly guaranteed, he added.

At the observation post he was

briefed on the deployment of subunits of the island defending unit and their combat missions and ordered the accompanying chief of the General Staff to build up the combat capability of the defending unit and change its combat mission.

He chose a target for Gun 2 of the coastal artillery company on combat duty and gave an order to fire at it.

The artillerymen fully demonstrated marksmanship they cultivated in their day-to-day training.

Saying that for the KPA, combat preparedness

and buildup of combat capability constitute the greatest patriotism, he noted it should hold fast to the line of developing it as a powerful army in political and ideological, moral, military and technological terms, give scientific, pragmatic, real war-like military training to the service personnel with a higher degree of intensity so that they can carry out any operations and combat missions readily and continue to stoke the flames of crack shot movement.

He gave the island defending unit a pair of binoculars, automatic rifle and

SEE PAGE 2



Supreme Leader oversees super-large rocket launcher test fire

Kim Jong Un, chairman of the Workers' Party of Korea, chairman of the State Affairs Commission of the DPRK and supreme commander of the armed forces of the DPRK, inspected the test fire of the super-large multiple launch rocket system conducted by the Academy of Defence Sciences.

The Supreme Leader was greeted at the launch site by Ri Pyong Chol, first deputy department director of the WPK Central Committee, Kim Jong Sik, deputy department director of the WPK Central Committee, and Jang Chang Ha, Jon Il Ho and other leading officials in the defence science research sector.

Army General Pak Jong Chon, chief of the General Staff of the Korean People's Army, and commanders of the KPA large combined units also saw the test fire.

The volley of test fire, which was aimed at finally examining the applicability to combat of the super-large multiple launch rocket system, proved the military and technical superiority of the weapon system and its firm reliability.

The Supreme Leader expressed great satisfaction with the results of the test fire.

The commanders of the KPA large



combined units sincerely extended their congratulations and gratitude to the Supreme Leader who saw to

it that lots of arms and equipment of powerful performance were developed and perfected this year for the military

and technical buildup of the KPA.

Compiled from KCNA



Inspection: Kim Jong Un inspects island-defending unit and women's company

FROM PAGE 1

machine gun as gifts and had a photo session with the service personnel and families of the island defending unit.

Supreme Leader Kim Jong Un inspected a women's company under KPA Unit 5492.

He visited the company without prior notice on an ordinary day and saw the company servicemen perform their duty of frontline defence with high vigilance, he said, and praised them for their efforts.

Conducted by the company commander and company political

instructor, he looked round the monument to the field guidance of Chairman Kim Jong Il.

At the education room he learned about the use of educational means and cultural and amusement facilities and was very pleased to see the servicewomen leading a life without any inconvenience at the cosy and harmoniously furnished bedroom, mess hall and wash-cum-bath room.

Saying that the company has set an example in all aspects of combat preparedness and economic life of the company including barracks management and livestock, fish and sideline farming, he spoke highly of the proud successes the servicewomen achieved true to the Party leadership.

He saw a performance given by the company art group and sports game,

boosting the militant morale of the servicewomen.

He told the company commander and company political instructor that they should always remember the days when their company worked hard to be honoured as a crack shot company two years ago and that only when they train harder, can they continue to preserve and glorify the honour given by the Party. And he called on all the servicewomen of the company to stoke the flames of revolutionary and voluntary training more fiercely within the company in hearty response to the Party policy of bringing about a drastic turn in military training so as to continue to strengthen the company as that of crack shots.

National defence is the highest

expression of patriotism, he said, earnestly requesting the servicewomen of the company to do military service more devotedly for the country's prosperity and people's wellbeing and happiness. Hoping that all of them would become women revolutionaries and true daughters of the Party thoroughly armed with the revolutionary spirit of the Party, he gave a pair of binoculars and an automatic rifle as gifts and had a photo session with them.

On both inspection tours he was accompanied by Army General Pak Jong Chon, chief of the General Staff of the Korean People's Army, and senior officials of the WPK Central Committee.

Compiled from KCNA

Flagship research centre helps boost chemical industry growth

Projects carried out to upgrade industry

The Hamhung Branch of the State Academy of Sciences has undertaken a series of scientific research projects to stimulate the growth of the national economy.

It now focuses on solving scientific and technological problems arising in applying heatproof and anti-corrosive top coat to the inner walls of combustion furnace, an important issue for the construction of the Sunchon Phosphatic Fertilizer Factory.

After setting up a basic experimental process, it pushes ahead with preparations for the trial run on an expansion basis while taking immediate measures to solve the problems arising in the composition of process and test run.

It also steps up the undertaking to make equipment and devices needed for the operation of the Sunchon Phosphatic Fertilizer Factory.

Scientists of the branch

intensify research to establish C1 chemical industry.

They have already made and installed over 100 pieces of equipment in some 40 kinds. On the basis of this achievement they conducted the test run of the ethylene generation and vinyl acetate and aldehyde acetate production processes to fix technical indices of each process.

Marked successes have been achieved in their research to solve scientific and technical problems arising in upgrading the Sinuiju Chemical Fibre Factory.

Scientists are now pressing on with the work to fix the condition of making a paper sizing agent and select suitable raw materials for paper production stage by stage. And they have established a process of retrieving caustic soda from pulp waste.

They are making careful technical preparations for the

making of a Lyocell fibre spinning solvent and the production of a fuming sulphuric acid for Lyocell fibre spinning, while taking immediate steps to solve scientific and technical problems that arise as various production processes have been set up.

A project is under way to establish a caustic soda trial production process based on the ion-exchange membrane method.

They have also undertaken research projects to improve the performance of ultraviolet-visible spectrophotometer while solving scientific and technological problems arising in the introduction of blood gas analyser as part of a programme for the domestic production of essential medicine intermediates and medical appliances.

They are also carrying on the project to regulate the reaction conditions of gas generator including the temperature and remodel measuring facilities at the Hungnam Fertilizer Complex.

They have introduced a real-time density measuring system in the water electrolysis process to ensure the density of alkaline electrolyte and are now working to introduce a magnetized treatment device for the prevention of scale into various water cooling systems.

After remodelling the speed measuring device of the horizontal spinning workshop of the February 8 Vinalon Complex, they properly solved problems arising in normal operation of refractometer.

By Yun Kyong Il PT



PHOTOS BY PAK KWANG HUN / THE PYONGYANG TIMES

Researchers at the insecticide laboratory of the organic chemistry institute of the Hamhung Branch of the State Academy of Sciences work on germicide thiram synthesis.

Key players

Ri Jong Su at the scientific information lab of the revolutionary relics preservation institute of the branch academy is a Merited Scientist, candidate academician, professor and PhD.

He has conducted scientific research at the branch for nearly five decades as a researcher, section chief and deputy director for scientific research, making a notable contribution to the development of the country's science and technology and eternal preservation of relics.

He developed four kinds of antioxidant acrylic plastic coating materials which are used for the preservation of relics to solve the problem arising in producing ultraviolet masking plastic and metal product discoloration prevention filming material, which have been introduced across the country. And he invented a new silverware preservation method.

In the course of it, he was awarded a February 16 Science and Technology Prize and trained many academic degree



Ri Jong Su, candidate academician, professor, PhD and researcher.

and title holders and competent researchers.

In his eighties he authored a book this year, which comprehensively deals with the effect of external environment on relics, methods of preserving photo, film, paper and fibre relics and application of nanotechnology.

He is now working as chairman of the academic degree thesis deliberation committee in high polymer chemistry panel.



Choe Jong Gil, PhD, associate professor and researcher.

Choe Jong Gil, associate professor and PhD at the organic chemistry institute, is also a proficient researcher.

He recently developed a method of making and recycling a catalyst for synthesizing ethylene-based vinyl acetate, an important component part for establishing C1 chemical industry.

Vinyl acetate is one of the per unit of product.

"With the help of the newly developed method we have raised the actual synthetic fuel production rate from the

raw materials of organic chemical industry which is used in the largest amount in the world at present.

According to experts, it is the key issue to set up a process of producing vinyl acetate from ethylene which starts from anthracite coal, especially to obtain a catalyst for synthesizing vinyl acetate which is used in this process.

The vinyl acetate synthesizing technology with ethylene as a raw material has been set as a patent.

Choe conducted intensive scientific research despite lack of materials and succeeded in making in Korean way a catalyst for vinyl acetate synthesis with ethylene on the basis of abundant local raw materials.

He said that domestic production of vinyl acetate is possible as the activity, selectivity, lifetime and mechanical strength of the catalyst are high.

By Kim Kum Myong PT

previous 75 percent to over 95," said key developer Ho Yong Song.

By Jong Hwa Sun PT

Sci-tech hits for recycling

Scientists at the Coal Chemistry Institute of the branch have developed a method of producing aluminium from carboniferous kaolin.

"The method of producing aluminium from carboniferous kaolin we have developed this time is of great significance in recycling," said Kwon Son Hwa, key developer and section chief of the institute.

The new method comprises crushing, calcination, iron removing and chemical treatment processes and is very

effective in terms of economic utility.

It can extract high-purity aluminium from carboniferous kaolin and quartz, which can be claimed to be a remnant of extraction, and can be used as a raw material for liquid glass by treating it with caustic soda. And ammonium chloride can be retrieved from the liquid which is produced in the course of reaction and treated to be used as a raw material.

Scientists also developed an industrial method of making a catalyst for synthetic fuel.

They established a synthetic fuel process and conducted its trial run successfully for the industrial introduction of the catalyst, providing a scientific guarantee for mass-producing synthetic fuel products with local raw materials.

They also newly added a carbonic acid gas removing process to the gas purification process, one of the main processes in the production of synthetic fuel, to increase the content of effective gas 1.5 times while lowering the amount of materials consumed

ECONOMY

Weekly roundup

Different economic sectors are stepping up efforts to round off this year.

The Komdok Mining Complex set up Vertical Pit No. 21 to start its operation on November 20.

The completion of the pit has made it possible to secure abundant mineral deposits in the southern section of the deep mining area of the complex and open up a prospect for boosting production.

The number of innovators is on the increase at the Pyongyang Kim Jong Suk Silk Mill as the days go by in the course of the drive for setting new standards and records.

Through the multi-spindle and multi-loom tending campaign dozens of silk reelers carried out their daily assignments twice and thrice, thereby overfulfilling their yearly silk thread production plans. Workers of the preparatory workshop who implemented their yearly plans ahead of schedule are continuing to register good results in cocoon cooking and silk cotton production. The repairs and power-supply workshop has ensured the normal operation of heating furnace to produce necessary materials for the processing of parts and established a production process of a

variety of special component parts and materials in order to contribute to increasing silk thread output.

The Sinuiju Disabled Soldiers' Knitwear Factory developed more than 100 kinds of new products.

It introduced lots of technical innovation plans in order to develop garment designs reflecting the needs of people.

The Haeju Smeltery has newly established the production process of nutritive phosphatic compound fertilizer.

The process makes it possible to more than double the productivity while saving much more labour and electricity than before. The fertilizer contains sufficient nutrients

that are suitable for the growth of crops. The smeltery is now overfulfilling its daily production plan by 20 percent in order to fully satisfy the demands for grain production.

Builders of the General Tideland Reclamation Enterprise of North Phyongan Province undertaking the second-stage Honggondo tideland reclamation project carried out tens of thousands of cubic metres of stone covering in a little over two months as of November 19. They are now concentrating all efforts on stone covering with an eye to completing tide embankment No. 1 within this year.

By Ri Sang Il PT



RI TONG GYU / RODONG SINMUN

Machines are in full operation at the Komdok Mining Complex to increase mineral output.

R&D

Hydrofoil makes motion stable further

The marine engineering faculty of Kim Chaek University of Technology has developed a new technology of building hydrofoil.

"Hydrofoils are built only by a few countries as they require sophisticated technology. The most important and difficult thing here is to ensure the stability of motions," said key developer Jang Tong Hyon.

According to him, other countries employ a very expensive auto-control system to solve this problem. But the research group of the university settled it theoretically without using such a system, in other words, the boat ensures the stability of motions by itself.

The other characteristic of the technology is that an ordinary outboard motor is used.



BY COURTESY OF KIM CHAEK UNIVERSITY OF TECHNOLOGY

A hydrofoil built by the marine engineering faculty of Kim Chaek University of Technology.

The motor is readily available and easy to install.

The speed of the boat is 25-60kn and the relative wave height related to displacement is about 0.6.

It excels in turning and can make rapid turning.

According to information available, the existing hydrofoil boats are high in the centre of mass and low in the restoring moment of foils. They are 200-1 600m in turning diameter.

However, the turning diameter of the boat developed by the university is 2-3 times the length of the hull.

The transition time is short, specifically 5-8 seconds, and the mooring condition is excellent as the span of foils is shorter than hull width.

The hydrofoil consumes 30-50 percent less fuel than gliders, thereby causing less environmental pollution in the water area.

The material for the hull and foils is glass fibre reinforced plastic and miniaturization of the boat is possible with the number of riders being 1-40. It is also low in building cost.

"Our technology can be applied to building hydrofoils of different sizes and speeds such as water motorcycle, private boat, water taxi and high-speed passenger ship," said Jang.

By Jong Hwa Sun PT

DRIVE

All eager to keep abreast of latest developments

All the people in the DPRK are bubbling with the enthusiasm to be well versed in science and technology.

It is a steadfast will of the government to bring a satisfactory life, affluent and civilized, to all the people by encouraging all units including industrial establishments and cooperative farms to increase production and create more on the strength of science and technology and thereby perform miracles and innovations everywhere.

Ensuring that all the people are well versed in science and technology is an undertaking to prepare all the members of society as intelligent workers with the intellectual level of a university graduate and the developers of science and technology.

Sci-tech development is no longer the preserve confined to scientific research institutions or certain professionals.

Now that knowledge resource is considered to be the most important strategic resource, everyone needs to accept the possession and application of modern science and technology as a pressing task and a call of the times.

Such requirement can be met when the spirit of prioritizing science and technology and the zeal for learning them become a national trait.

In the DPRK where people are masters of everything and everything serves them,

there are all conditions and foundations needed for making them well versed in science and technology.

Centring on the Sci-Tech Complex, a temple of all-people study and multifunctional hub of sci-tech dissemination, latest technological data is diffused to all terminals across the country through the national network. Institutions, enterprises, factories and cooperative farms raise the intellectual level of employees at their sci-tech learning spaces and have them contribute to technical development.

In recent years, many industrial establishments have built up their sci-tech development capacity and on that basis boosted production.

It is their common view that constant upgrading and development of small things make them big and lead to surprising results.

As required by the undertaking to make all the people well versed in science and technology, study-while-you-work colleges like those for workers, farmers and fishermen have soared in number and everyone is now able to enrol on online courses from any part of the country.

The provision and constant improvement of educational conditions and environment for all-people learning is a guarantee for training an army of talents.

Chae Mi Gyong

ENERGY

Various energy resources exploited

A variety of national and local programmes are now under way in the DPRK to exploit diverse energy resources.

According to data available, this year alone has witnessed an increase of tens of thousands of kilowatts of generating capacity based on different energies across the country. Of them, solar energy makes up over 86 percent and biomass and coal gasification over 7.7 and 4.7 percent respectively.

A regional survey of the development of various energy resources says that South Phyongan and North Hwanghae provinces lead others with 15.4 percent and 14.9 percent of their total power generating capacity.

All city and county post offices under the South Phyongan Provincial Telecommunication Management Bureau established a power production system based on coal gasification to

supply electricity needed for their operation and management, while several cities and counties in North Hwanghae Province are building up the power generating capacity based on solar energy and biomass.

Most noticeable is the fact that many families in Taesong District, Pyongyang, are now making effective use of electric power in close combination with the national power grid by employing a systemic parallel inversion technology in the solar power generation system.

A series of government measures and growing interest of many people give renewed impetus to the development of various energy resources which prove profitable and promising without damaging the ecological environment.

Compiled from KCNA

HONOUR

Entire class wins scientific search prize

In the country the university students scientific search prize is awarded to those who finish the whole university course with honours and come up with more than one invention.

This year the prize has been awarded to all the students of the fifth-year engineering talents class at the information science and technology faculty of Kim Chaek University of Technology.

According to Ryang Tong Chol, chairman of the faculty youth league committee, the university has produced more

winners of the prize than other universities, but it is rare for an entire class of students to be given the honour.

They all graduated from middle schools No. 1 in Pyongyang and provinces.

"When entering the university, we were all ambitious and enthusiastic," said So Yong Jun.

Rim Kuk Jin was the first in the class to take up research project.

He contributed to solving difficult IT problems arising in practice already in his second

year at the university and carried out more than ten projects during his university days.

His achievements generated motivation in his classmates and fired the entire class with the zeal for collective study and research.

Therefore, all of them were involved in the scientific research group to apply what they learnt during lectures as they conducted intense research activities.

Experienced lecturers and researchers of the faculty gave them a big help.

The programs they developed came first at the national exhibition of IT achievements of university students in 2018 and won software copyrights.

They are now working on their graduation theses on the sci-tech themes of great significance.

"Scientific research is difficult even for us lecturers and researchers. But our students achieved amazing success with youthful enthusiasm and united efforts. I am satisfied with their attitude to research and cooperative spirit," said Kim Won Ok, lecturer in charge of the class.



RYU KWANG HYOK / THE PYONGYANG TIMES

A class honoured with the university students scientific search prize at Kim Chaek University of Technology.

By Pang Un Ju PT

EATERY

Fish dishes made on spot allure diners

The Pyongyang Taedonggang Fish Restaurant is well-known for its fresh and tasty fish dish service.

Locals call it a "restaurant of fresh fish".

According to manager Choe Hyon Gil, the restaurant serves more than 1 000 people every day and hundreds of thousands of people have so far enjoyed various fish dishes there since its inauguration last year.

The instant food service counter is the favourite haunt of diners as fresh fishes in the keeping and breeding ponds are prepared into delicious foods in an instant by cooks.

The restaurant works to promote the real taste of dishes and devise special foods that can be claimed to be the signature food of the eatery. Steamed seafood and turbo *sinsollo* are now most popular.

Waitress Jon Hyang Sim said that the steamed seafood is made by putting rice in the pot for boiling and putting shellfish on it before steaming and the boiled rice saturated with the sweet taste of shellfish presents delicate flavour.

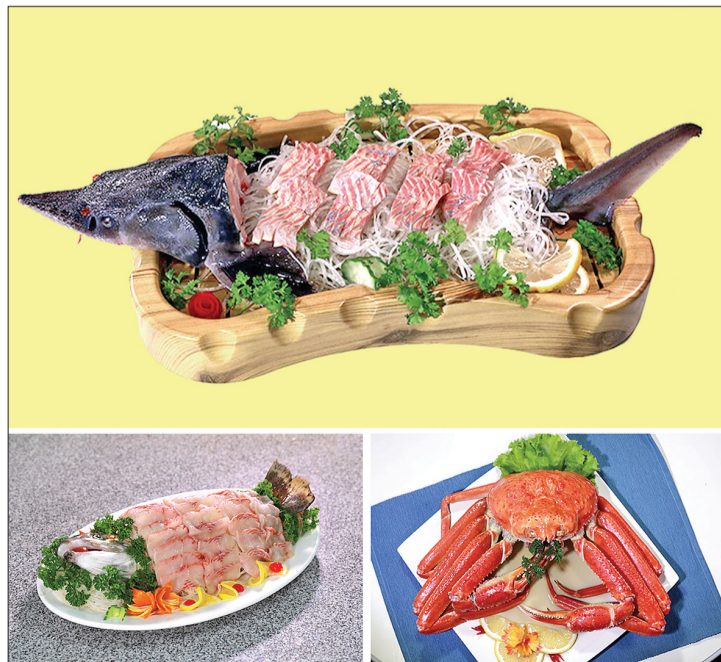
"Attracted by its unique name and appetizing aroma, I had turbo *sinsollo*, and it tasted very nice. It is an excellent food showing the novel idea and high culinary skill of a cook," said Kang Su Jong, a resident living in Taedonggang District,

Pyongyang. She hoped that the restaurant would make more superb foods in the future.

The restaurant has different forms of dining rooms, including Hwanggumhae dining hall and circular, buffet, traditional dish, Oriental dish, Western food and sushi rooms.

Employees of the restaurant are working hard to make the restaurant another distinctive service centre representing the Korean food culture.

By Ri Sung Ik PT



PAK KWANG HUN / THE PYONGYANG TIMES

Slices of raw sturgeon and salmon and steamed big crab served at the Pyongyang Taedonggang Fish Restaurant.

EDUCATION

Higher education updated

The technical college sector is notching up successes as all the educational institutions are striving to hit the targets for building a socialist educational power.

"All the technical colleges are working to innovate teaching methods in order to make teaching content practicable, comprehensive and modern and help students become active learners and searchers," said Pak Il, department director of the Education Commission.

Kim Chaek University of Technology has put all study subjects on a higher theoretical and popular basis, made thousands of teaching plans practicable, comprehensive and up-to-date and worked out lots of electronic teaching plans to apply them to education.

The same is the case with Pyongyang University of Architecture and Sinuiju University of Agriculture.

Kim Chaek University of Technology and Hamhung University of Hydraulic Engineering respectively developed more than 950 and 250 new teaching methods incorporating modern educational science and technology.

The Hamhung Branch of the University of Sciences is channelling big efforts into improving students'

practical ability. It actively involves students in scientific research to encourage them to solve practical problems. Phyongsong University of Veterinary Science and Animal Husbandry has run a scientific research group of students positively, with the result that 15 students have been awarded the university students scientific search prize this year.

Efforts have also been made to improve educational conditions and environment.

Kim Chaek University of Technology has been furnished with more than 180 kinds of modern experimental apparatuses and facilities and over 470 classrooms equipped with comprehensive multifunctional facilities.

Hamhung University of Chemical Industry has upgraded more than 170 kinds of experimental apparatuses and facilities and furnished 35 practical training rooms in line with the requirements of informatization.

Meanwhile, practice workshop, postgraduate school building, gymnasium and the like have been set up at Pyongyang University of Mechanical Engineering and many other technical colleges.

By Kwon Hyo Song PT

DENTAL CARE

Natural fluorine water developed

"Fluoride is the most effective means of preventing decay in teeth in communities and such a trend would not change in future," said an international medical study report on fluorination of drinking water.

Fluorine is known to be effective against many diseases including caries and osteoporosis and regular use of fluorine-containing products is widely recommended by the medical community.

A long-term test in several countries showed that the fluorinated water reduced caries cases by more than half.

Recently, a research team of the natural treatment institute of the Ministry of Public Health found out a mineral water containing a great deal of dissociated fluorine particles and, on that basis, brought out natural fluorine water.

What draws attention is that as the water wells out of the ground with fluoric elements already in it, it is more beneficial

to people's health than those made by dissociating valuable fluorides.

According to Kim Hye Gyong, director of the institute, it took decades for them to develop the natural drink with a fluorine concentration of 0.7ml which is the most rational intake for humans.

"Fragile bones and bad teeth run in my family and I suffered a lot for that, too," said Jong Kyong Hui living in Sosong District, Pyongyang. "Then I heard about the natural fluorine water and drank it for about a month and now I don't feel any ache in the teeth and joints at all and it is marvellous," Jong said.

"My one-year-old son has been relieved of indigestion after drinking the fluorine water and his appetite has improved and he has already seven teeth," said Pak Yong Sim in Mangyongdae District, Pyongyang.

By Jong Tang Song PT

PERFORMANCE

Scenes revive memories of sensation decades ago

A performance of famous songs and scenes from revolutionary operas produced by the Phibada Opera Troupe is running on at the Pyongyang Grand Theatre.

Starting on July 16, it is now going on amid the enthusiastic interest of the audience.

"Seeing the performance, I looked back upon the days of the revolution in the operatic art which stirred up the hearts of all the people in the DPRK in the 1970s," said Kim Hyang Sim, a 72-year-old spectator. "At that time when an epochal turn was being brought about in the themes and representation of operas, revolutionary operas *The Sea of Blood* and *The Flower Girl* were created to strike the world with wonder."

Korean-style operas were new and original in the themes and general artistic representation, and they were created under the guidance of Chairman Kim Jong Il in the early 1970s.

Innovation was made in the content of opera by setting socio-political problems for glorifying the dignity and value of humans

as social beings as the main task of description and representing them meaningfully and emotionally. Verse songs, off-stage songs, dance, orchestral music and stage arts were also introduced, and a new ground was broken in dramaturgy.

The first product was *The Sea of Blood*, which was followed by *The Flower Girl*, People's Prize-winning *Tell O Forest*, *Song of Mt Kumgang* and People's Prize-winning *The Story of a Nurse*.

In the period when these five "Sea of Blood"-style revolutionary operas were created, the Chairman gave detailed instructions with his brilliant artistic insight and energetically led the whole process of their production.

Amid the playing of solemn music pieces making the audience recollect his devotion, scenes from the operas are projected on the screen, during which a silent yet overwhelming emotion surges in the auditorium as they trace back the history of operatic development spanning some 40 years.

"Similar performances were given in the past, but this time we have compiled the performance by selecting typical songs and scenes from the five revolutionary operas so as to make them flow in a plot," said Hwang Chol Ung, director of the performance.

The scenes feature heroes and heroines of the operas including a pitiful mother who cannot serve her children with enough meals; a pathetic Kkot Bun who devotedly takes care of her ailing mother and blind younger sister but loses her mother and is taken to the landlord's to serve him unable to pay debts; Choe Pyong Hun who carries out his assignment given by the revolutionary organization while pretending to be a stooge of the enemy although he is rejected even by his daughter; and a nurse who guides wounded soldiers to her unit by displaying self-sacrificing spirit as she misses the Supreme Headquarters of the Korean People's Army. The performance is appealing to the audience for the consummate singing skills, good interpretation of works and unique and affluent means of representation.

In the performance, famous songs *Bumper Harvest of Apple* and *Beautiful and Nice to Live in* from revolutionary opera *Song of Mt Kumgang* have been represented into national instrumental concert and female vocal quintet to enhance the mood of the play.

The performance is concluded with theme music *Revolution Is the Only Way Out* from the epilogue of *The Sea of Blood*, bringing the general theme of the five revolutionary operas into bold relief.

By Ri Myong Jun PT



PAK KWANG HUN / THE PYONGYANG TIMES

A scene from the performance of popular songs and scenes from revolutionary operas created by Phibada Opera Troupe which is staged at the Pyongyang Grand Theatre.

MINERAL WATER

Famous for medical efficacy

Okryu mineral water in Pyongyang is well known from long ago for its unique taste and marvellous treatment efficacy.

It is called a "mineral vitamin" as it contains plenty of positive and anion ions. One of a few complex brine spring waters in the country, it gushes out at the depth of 192 metres under the Taedong riverside.

Some 2 052 mg/L of minerals are included in the mineral water, which contains potassium, sodium, calcium and magnesium and iron, chlorine, hydrogen carbonate and sulphuric acid ions as well.

According to its regular drinkers, the mineral water is effective in curing different diseases including digestive and urinary troubles and retarding aging. It is specially good for the treatment of slight diabetes and secondary anaemia.

Pang Won Ho living in neighbourhood unit No. 7 of Pothonggang-dong No. 2, Pothonggang District, Pyongyang, is a regular customer of the Okryu mineral water shop.

Noting that regular drinking of the mineral water cured him of chronic gastritis, he said that

he has drunk the mineral water for 15 years. "Since I started drinking the water, it remarkably improved my appetite and promoted digestion. It was really amazing," he added.

"I've often been told about the good efficacy of the Okryu mineral water, but it is the first time for me to drink it. Its irony taste is very impressive. After having Pyongyang cold noodles in the Okryu Restaurant, drinking the mineral water is another delight that can only be enjoyed in Pyongyang," said Pak Il Nam from Unsan county town, South Phyongan Province.

The mineral water shop, which has rendered services for over 30 years, installed a card-type mineral water supplier in 2016 to promote the convenience of drinkers.

By Kil Chung Il PT

SHOWS

Home-made medical products highlighted



RYU KWANG HYOK / THE PYONGYANG TIMES

Visitors attentively look at an exhibit at the National Exhibition of Sci-Tech Achievements in Public Health-2019 that opened at the Sci-Tech Complex in Pyongyang on Monday.

The National Exhibition of Sci-Tech Achievements in Public Health-2019 was held at the Sci-Tech Complex in Pyongyang from Nov 25 to 29, attracting many visitors.

The recent exhibition was geared to developing public health service a level higher by widely introducing successes and exchanging experience gained in realizing domestic production of medicines and medical appliances and briskly conducting technical exchange activities, according to Kim Kyong Ae, department director of the Ministry of Public Health.

On display there were over 2 500 items of technical achievements in the production of medicines and medical appliances, homemade medicines, advanced medical appliances and equipment and relevant production technologies and therapies and prophylaxes, which were presented by more than 240 units.

Lots of medical appliances, traditional medicines, health foods and medical supplies were on show at the booths of medical equipment, appliances and supplies, of medicine, health food and sanitary goods, of diagnosis, treatment and books, of medical information technology and of occupational technology and day care.

The mobile fluoroscope, portable ultrasonic prostate

gland treatment device, general ophthalmic electronic diagnostic device and multipurpose abdominocentesis needle were highly appreciated as they rely on local materials and technologies.

According to Choe Song Chol, chief of the ophthalmic department of the Waudo District People's Hospital in Nampho, the general ophthalmic diagnostic device enables simultaneous execution of different eye tests which were previously done separately by fluorescent ophthalmoscope, ultrasonograph and optic axis tester and can operate at any time as it works on DC power.

Visitors showed keen interest in Pyongyang Medical University's kidney function-diagnosis method for nephriasis case, the Kim Man Yu Hospital's program for differentiating between chronic obstructive pulmonary diseases and bronchial asthma and such medicines and functional health foods as Koryo insam activator pill, nano-silver eye drops, green musk which is effective against cerebral thrombosis and aftereffects of cerebral haemorrhage and wild raspberry honey and chicory extract which are good for invigoration.

Sci-tech presentations and intellectual property exchange were made on the sidelines of the exhibition.

By Jong Chol PT



PAK KWANG HUN / THE PYONGYANG TIMES

The 9th national liquor and condiment show is held at the Pyongyang Yokjon Department Store.

COMMENT

Japan races towards re-invasion and war

There might be no country like Japan which likes to use the word “peace” when talking about itself, especially “peaceful state”, “pacifist constitution”, “peaceful development” and “proactive pacifism”.

But Japan is behaving quite contrary to these terms.

It recently put on the table the issue of dispatching an escort warship of the Self-Defence Forces to the Middle East and commissioned an ultra-modern submarine, the biggest diesel sub in the world capable of conducting underwater operations longer than other subs.

Although the Japanese authorities are insisting that the sub is for ensuring the safety of its vessels and defending peace, Japan’s uncommon behaviour disagrees with their assertion.

Japan’s past wars of aggression are now openly embellished as “liberation wars” in the country and such a brazen-faced notion that there will be no apology and reparations for them is gaining

ground.

Japan instituted the “security-related law”, “emergency-related law”, “law on special measures against terrorism”, which are de facto evil war laws intended to legally guarantee Japan’s military operations anywhere on the globe with the right of belligerency and the right to participation in war. It is now pushing the constitutional revision at the final stage to legitimize the existence of SDF.

Under such circumstances, the military principle of “exclusive defence” advocated by Japan in the post-war period has been replaced by an attack-oriented strategy with the offensive character and operational scope of SDF expanding further.

Even some emboldened Japanese politicians are making reckless remarks that Japan should take others’ territories through wars.

Therefore, no country will be taken in by Japan’s wordplay, no matter how desperately

it may work to justify the overseas operation of SDF and arms buildup under the signboard of “protection” and “peacekeeping”.

All the military moves of the archipelagic nation are aimed at turning itself into a military power and realizing its wild ambition for overseas expansion.

Its bids for a military power and overseas expansion are oriented to the re-invasion of Korea and other Asian countries and a war for conquering the world in the long run.

Japan is a bellicose nation, against which the international community should keep a special eye.

Japan should not act rashly bearing in mind that the mankind, who experienced untold sufferings and misfortunes due to the Japanese imperialists in the past, will never remain an onlooker to its militaristic moves.

Compiled from KCNA

JAPAN-US

‘Blood alliance’ for bloodsucking?

The Japanese Prime Minister reportedly met the US President and finally concluded the US-Japan trade agreement as he toured the US to attend the recent UN General Assembly session.

In this regard, the Japanese Cabinet secretary in a press conference made a long-winded explanation that the agreement was beneficial to both parties.

However, Japan’s Jiji News Agency reported that the agreement was in front of Japan opening its market to American beef, pork and many other agricultural products within the scope of the Trans-Pacific Partnership and highlighted Japan’s concessions to the US’ continued levying of tariffs on automobiles and their parts, though the establishment of limits on duty-free import of rice asked by the US side was turned down.

Late last August, when the basic agreement was made in the bilateral trade negotiations, the Liberal Democratic Party

of Japan announced that the negotiations were successful, but oppositions retorted that they got an impression that the agreement was forced by the US and described it as a humiliating agreement.

In the trade negotiations, the US aimed at opening Japan’s agricultural market, whereas Japan sought the removal of US tariffs on its automobiles.

The US has long demanded Japan open the agricultural market, but Japan has refused it in consideration of the impact it would have on local businesses and the public sentiment.

As it asked for the market opening in the negotiations, the US hinted that it might impose additional tariffs on the pretext of security and put pressure on Japan.

Given that automobiles and their parts take 35 percent of Japan’s total exports to the US, it is inevitable that 25 percent of additional tariffs will deal a hard blow to Japan’s automobile industry.

Consequently, Japan could not express its intention to abolish the US tariffs on its automobile industry, but had to content itself with keeping additional tariffs from being imposed and accept the US’ demand for the opening.

At present, the US is expressing its willingness to hold negotiations with Japan in the fields of service and investment.

It is estimated that in case bilateral negotiations are extended to the new fields, it is likely that Washington would put pressure on Tokyo as shown by the recent agreement and the latter would have to go on with concession.

The US is now coercing Japan into raising the upkeep for the US forces in Japan and buying US-made weapons.

All facts clearly show that the “blood alliance” much hyped by Japan at every opportunity is the relationship between master and servant.

By Choe Yong Nam PT

S. Korea

US-s. Korea confab condemned

A south Korean organization People for Achieving Peace and Unification reportedly published

a commentary on Nov 16 to criticize the US-south Korea security consultative meeting.

The commentary said that a joint statement released after the meeting refers to arms buildup for implementing an offensive strategy against the north and expansion of the scope and level of military cooperation to all domains.

RUSSIA

Facing Western sanctions with growing cooperation

The West continues to ratchet up sanctions against Russia.

The European Council in a recent statement said it would extend the restrictions on natural persons and corporate bodies in Russia by another six months till March 15 2020.

The US has also commenced a new round of sanctions against Russia on the pretext of the Skripal incident.

It is a well-known fact that the persistent Western sanctions are aimed at isolating and suffocating Russia politically and economically.

But the Western sanctions are providing it with opportunities to work to further diversify its economic relations with other countries.

Russia deepens communication and promotes practical cooperation with such strategic nations as the DPRK, China and Belarus, while boosting bilateral, regional and international cooperation with many countries.

It hosted the 23rd St Petersburg International Forum, the 5th Eastern Economic Forum in Vladivostok and other events

to promote economic ties with many countries in the world.

It also boosted regional cooperation and international collaboration through the Eurasian supreme economic council meeting, CIS summit meeting and Russia-Africa summit meeting in October and the council meeting of heads of government of the Shanghai Cooperation Organization member states and the BRICS summit in November.

These efforts help Russia consolidate the foundations for overcoming the Western sanctions and developing its economy in a more proactive and diversified way.

For example, last year the amount of its trade with Belarus exceeded \$30 billion and that with China is estimated to reach \$200 billion by 2020.

Now, Russia derides the EU, saying its sanctions are unproductive and foreign media comment that the Western sanctions have rather boomeranged against the latter without achieving the expected end to isolate the former.

By Min Chol PT

TREND

Nations compete in their push for talent education

According to information available, 36 percent of world wealth is created by physical and mechanical work and 64 percent of it by technical work and intellectual activities of talents.

Therefore, many countries view talents as the most precious assets and give primary efforts to the education of talents.

Iran has taken upon itself a task of accelerating the development of science and technology in the coming two to three decades and directs a great deal of energies to it. Laos has set itself an ambitious goal to increase its scientific personnel over 10 times more than now by 2020 and redoubles efforts for the training of scientists.

Vietnam has put forward a plan for training a million technical personnel in the

future.

Western nations are taking an active part in the competition for attracting more talents from across the world by widely advertising cutting-edge science research and technical projects at home and abroad to collect, officially invite and lure talents who can undertake the projects.

African countries also concentrate efforts on the training of talents.

They are pushing programmes to find out many talents, give them early science education and enrol them at middle schools and universities.

At the same time many countries are now increasing state investment in the field of science and technology and taking steps to provide various kinds of preferential treatment.

For example, the Vietnamese government has taken measures according to the law to cut taxes for businesses which contribute to scientific research and technical development or exempt them from taxation and increase state investment in them.

The joint statement will entail catastrophic consequences in the Korean peninsula, it added.

The commentary urged the government to reset relations with the US.

Compiled from KCNA

By Om Ryong PT

SOCCER

April 25 dominates as premier league season ends

The 2018-2019 DPRK premier league football tournament came to a close.

There are some changes in the rankings, but April 25 still remains at the top.

It has won the premier league for several years.

The prizes for best player, top scorer and best goalkeeper of the year were all awarded

to its players, according to the announcement of the DPRK football federation.

O Hyok Chol, Rim Chol Min and An Tae Song were chosen as the best player, top scorer and best goalkeeper respectively. Rim scored 16 goals during the season.

Fans attribute April 25's success to the possession of

excellent players, though experts say there are other reasons.

Yu Yong Muk, department chief of the football federation, said that April 25 is firmly united and all the players cooperated well in line with its tactics.

The second place was taken by Kigwancha.

It came as an unlooked-for result for both experts and fans, as Sobaeksu which shook up its attacking force had followed April 25 check by jowl from the beginning of the season.

However, Kigwancha with good players and extensive experience went through all matches successfully to the end and outdid Sobaeksu.

Kigwancha was one point ahead of Sobaeksu in the final rankings.

"Though we were nudged out to the third place, we won't miss the chance next time," said the head coach of Sobaeksu.



PAK KWANG HUN / THE PYONGYANG TIMES

Pyongyang scores a goal at the match with Kigwancha as part of the premier league soccer tournament.

By Ri Sung Ik PT

ICH

Soya and bean paste making

Soya and bean paste are indispensable subsidiary foods in the dietary life of the Koreans. Given that soya bean and salt, main materials of soya and bean paste, have been applied to food life since ancient times and fermented foods were available in those days, it tells that the Korean nation has a long history of making soya and bean paste.

As soya and bean paste are made from salt, fish, meat and cereals including maize, wheat and soybeans, they are different in making method, variety and quality.

Soya and bean paste are divided into soy sauce, soybean paste and peppered bean paste.

They contain protein, sugars, mineral matters and other nutritious elements. Especially, soybean paste has a great deal of protein.

To make soya and bean paste, pound boiled soybeans to make balls of soybeans and hang them at pillars or caves. Three months

later, break them into pieces and expose them to the sun before putting them into an earthenware jar.

Soy sauce is made when salt and proper amount of water are put into powdered soybean malt and filtered after a certain period of time to boil down in an iron oven. Savoury soybean paste is prepared when you put powdered soybean malt into the salt water and ferment it.

Peppered bean paste is made by adding powdered hot pepper and other seasonings to soybean paste.

Such peppered bean paste, fermented soybean paste or juicy paste is used not only as a condiment but also as a subsidiary food in dietary life.

The soya and bean paste-making, one of the Korean national customs, has been inscribed as a national intangible cultural heritage element.

By Pang Un Ju PT

HISTORY

First newspaper in the world

Korean ancestors published *Jobo*, the world's first newspaper, in the early 15th century.

Jobo was an internal bulletin issued by the government during the feudal Joseon dynasty (1392-1910) for government officials.

It was published almost every day for hundreds of years. Though it differed greatly from present newspapers, it had some elements of newspaper in content and form of its publication.

Generally, it carried information about the king's approval matters, change of government organizations, personnel change, king's administrative business, state examination date and activities in the royal court.

It also contained reports from central government departments and local governors, appeals from subjects to the king, commendation of loyal men and exemplary women, farming in provinces and meteorological information, natural disasters caused by flood, fire and heavy rain, and information about diplomatic and military affairs.

It shows that *Jobo* fulfilled informational and publicity functions.

It was issued by Sungjongwon, an institution dealing with

government and public documents as a mouthpiece of the king.

When the institution selected and extracted information to be notified to government officials and posted it on *joboso*, a kind of notice board, by writing with a writing brush every day, secretaries from each office of the central government and Hansong department and jo (liaison office of local governors in Seoul) copied the writings to deliver them to relevant officials.

The height of *joboso* was around 35 centimetres, just the same as that of the old standard Korean paper, and its length depended on the volume of information.

Joboso carried the date on top of each issue with the origin of information for each article given in contents without giving titles independently. It was written in Chinese grass style.

Jobo readers included government officials including ministers of the central government, provincial governors and county magistrates.

It was published until November 1874.

By Kil Chung Il PT

SITE

Old pavilion commanding splendid views

Paeksang Pavilion in Anju, South Phyongan Province, is a place of natural beauty and historic interest and it has been known as one of the eight scenic spots in the northwestern area of Korea as it commands a stunning view of the surroundings.

The name Paeksang means a hundred beautiful scenes.

The discovery of Koryo celadon at the site of the pavilion is proof positive of the fact that it was built in the period of Koryo (918-1392). Later, it was rebuilt in 1753 in the time of the feudal Joseon dynasty and represented the pavilion architecture of the dynasty.

Constructed on a large scale

with an orderly stylobate, the pavilion is a two-storey gabled building with double eaves.

The façade facing south is 25.82 metres and the sides facing east and west are 18.9 and 12.24 metres respectively.

The intercolumnar spaces in the middles of the four sides were made wider than others to accentuate them—a traditional style often seen in the pavilions built by Korean ancestors.

The pillars on the floor stand upright on the pillars under the floor and their lower parts are slightly thicker than the upper parts.

The closely-built headspace is in the style of three-wingspace

inferior purlin. It is decorated with patterns of sprigs of flowers with lotus flower bud motifs in the upper and lower parts.

There are two kinds of boards put on top of the cornices on pillars and one of them is represented as a lotus root spreading out with a flower blooming.

On the roof the height of ridges and the position of gables are set to go well with the length and width of the building, thereby striking a balance between the building body and the roof.

In particular, as the four sides of the single structure are all gabled, it looks like a group of buildings linked together.

The monolithic ceiling makes the inside of the pavilion look sublime and spacious.

The pavilion decked with morutanchong, or a moderate form of colourful paintings in traditional architecture, blends in well with the surroundings.

The beautiful painting matches nicely with the architectural structure and building parts and elements, adding decorative effect to the pavilion.

Today, the pavilion is preserved as a historic site of national treasure value.

By Kwon Hyo Song PT



PAK KWANG HUN / THE PYONGYANG TIMES

Paeksang Pavilion is known as a famous pavilion in northwestern Korea.

