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Supreme Leader Kim Jong Un congratulates Cuban President on his 60th birthday

Kim Jong Un, chairman of the DPRK State Affairs Commission, sent a message of congratulation to Miguel Mario Diaz-Canel Bermudez, president of the Republic of Cuba, in celebration of his 60th birthday.

He was pleased that the Cuban people have achieved great successes in their efforts to firmly protect the gains of socialism and make socio-economic development,

smashing the frantic sanctions and blockade of the hostile forces, under the leadership of the president, he said in the message, expressing invariable support to and solidarity with the cause of justice of the Cuban party, government and people.

Expressing the belief that the traditional relations of friendship and cooperation between the two parties and peoples of two countries

forged through the struggle for realizing the cause of socialism would steadily be carried forward and developed in line with the requirements of the new era by their common will and efforts, he sincerely wished the Cuban president and all his family members good health and happiness and greater successes in his responsible work.

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ANNIVERSARY

Revolutionary spirit of Paektu imperishable

The DPRK has been bubbling with the enthusiasm for touring the revolutionary battle sites in the Mt Paektu area since December last year.

Many people are climbing the mountain braving the blizzards which are so strong as to freeze their ears off and cut into their skin like a knife, solely because they wish to learn after the revolutionary spirit of the soldiers of the Korean People's Revolutionary Army during the anti-Japanese armed struggle.

The predecessor of the KPRA was the Anti-Japanese People's Guerrilla Army.

Founded by President Kim Il Sung on April 25 1932, the guerrilla army was reorganized into the KPRA between March and May 1934 according to the requirements of the developing revolution.

The KPRA soldiers fought against the Japanese imperialists for over 10 years with a burning desire for the country's liberation.

Having declared a guerrilla war against Japan's one million-strong army, the KPRA waged an arduous armed struggle unprecedented in history without any flanks and the rear.

They had to constantly undergo manifold trials and difficulties such as hunger and diseases, the biting cold of around 40 degrees Celsius below zero, battles against Japanese "punitive forces" which they sometimes had to encounter dozens of times a day, and persistent moves to persuade them into defecting.

In the course of this fierce struggle, the KPRA soldiers upheld Kim Il Sung as the only leader of the Korean revolution and safeguarded him with their lives and carried out his orders without fail under any adversities.

Among them were the one who bit his own tongue off in prison so as to keep the secret of the headquarters, an officer

who lured the enemies from the headquarters to himself and those who implemented the leader's order by making bombs from scratch.

The spirit of defending the leader with lives and the spirit of implementing his orders to the death, which were created by them, constitute the main core of the revolutionary spirit of Paektu.

The KPRA soldiers were staunch revolutionaries who fought to the end with unbeatable tenacity.

They wrote in blood the slogan "Keep the revolutionary faith to the death!" on barked trees in the forests and continued the struggle even though they had to cut out bullet wounds with the fillets of cans.

Cherishing a steadfast faith in victory of the revolution, they produced revolutionary dramas during the intervals between fierce battles and inspired people to join the anti-Japanese struggle everywhere they went.

Thanks to the resolute fighting spirit, the indomitable revolutionary spirit created in the forests of Paektu, the Korean people could accomplish the historic cause of national liberation and emerge victorious in such gigantic struggles as the new country building, hard-fought Fatherland Liberation War, post-war reconstruction and socialist construction.

Supreme Leader Kim Jong Un stressed the need for growing generations to learn the revolutionary spirit of Paektu as he travelled around the Paektu tableland.

The revolutionary spirit of Paektu, which has been the spiritual pillar in every stage of as the dauntless spiritual strength propelling the cause of a powerful socialist country building.

Jo Tae Hyon

A couple honoured with state commendations

According to a decree issued by the Presidium of the Supreme People's Assembly of the DPRK on Apr 23, the title of DPRK Labour Hero, Gold Medal (Hammer and Sickle) and Order of the National Flag 1st Class were awarded to Jo Myong

Jin and Order of the National Flag 1st Class to Ri Yong Sun for their distinguished patriotic services in supporting the construction of the Pyongyang General Hospital.

RELATIONS

DPRK-Russia ties make steady progress

Friendship between the DPRK and Russia has seen a steady growth in recent years.

In 2019 the two countries celebrated in splendour the 70th anniversary of the agreement on economic and cultural cooperation, following the 70th anniversary celebrations of the establishment of diplomatic relations in 2018. The development of bilateral collaboration, exchange and cooperation in diverse forms shows that the atmosphere has further been improved to develop bilateral ties.

In the first half of the past century the peoples of the two countries forged a friendship as comrades-in-arms in the anti-Japanese war. The Korean People's Revolutionary Army waged a series of battles and harassing operations under the slogan "Let us defend the Soviet Union with arms!" contributing greatly to frustrating the plan of the Japanese imperialists to invade the former Soviet Union. Many soldiers of the Red Army shed their blood in the battles to liberate Korea.

In his speech at the reception to welcome President Kim Il Sung who visited the Soviet Union in early 1949 leading a government delegation, Stalin said that Comrade Kim Il Sung was a true proletarian internationalist who defended the Soviet Union at the cost of the blood and with arms from the imperialists' aggression in the East.

Chairman Kim Jong Il met President Putin on a visit to the DPRK for the first time in July

2000 and visited the Russian Federation several times to further strengthen DPRK-Russia friendly and cooperative relations.

The DPRK-Russia Joint Declaration and the DPRK-Russia Moscow Declaration adopted by the leaders of the two countries and the treaty on friendship, good-neighbourliness and cooperation concluded between the two countries in February 2000 were important milestones in bolstering up relations of friendship and cooperation between the two countries.

Supreme Leader Kim Jong Un visited the Russian Federation in April 2019, which was an event of great significance in developing the traditional friendly and cooperative ties between the two countries onto a new high stage in line with the requirements of the new era under the new situation.

Through the historic first summit meeting with President Putin, the Supreme Leader built good friendly relations with him and further strengthened the bond of strategic and traditional friendship between the DPRK and Russia.

In his speech at the reception to welcome the DPRK leader on a visit to Russia President Putin expressed his willingness to continue to work together with the DPRK to defuse tensions on the Korean peninsula and strengthen security in the whole Northeast Asian region.

In his return address the Supreme Leader expressed his decision to usher in a new

heyday of the development of bilateral relations true to the intentions of the preceding leaders.

At the summit meeting and talks the top leaders of the two countries agreed on the detailed ways and measures to further promote mutual understanding and trust, friendship and cooperation and stimulate the growth of bilateral friendly ties in the new century.

The world media splashed the news, saying the summit meeting and talks were an important occasion of great significance in developing friendly relations.

The summit meeting between the leaders of the two countries gave a renewed impetus to the collaboration, exchange and cooperation between the governments, parliaments, regions and organizations of the two countries. The minister of Development of the Far East and Arctic, the delegation of the Ministry of Defence, the deputy foreign minister, the delegation of major media organizations and others of Russia visited Pyongyang and the DPRK government delegation, the delegations of the Supreme People's Assembly, the Ministry of Foreign Affairs and others visited Russia.

The DPRK and Russia will work hard to contribute to ensuring regional and world peace and security while further consolidating bilateral friendly and cooperative ties.

By Kim Tae Ho PT

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LEAD

What the two Sessions are telling the world

The meeting of the Political Bureau of the Central Committee of the Workers' Party of Korea held on Apr 11 discussed as the first item on the agenda the matter of taking more thoroughgoing state measures to protect the life and safety of the people from the world-sweeping pandemic and, accordingly, the Central Committee of the WPK and the State Affairs Commission and Cabinet of the DPRK adopted a joint resolution.

The resolution specified the need to steadily strengthen national emergency anti-epidemic work, detailed targets for this year in boosting economic construction and defence capabilities and stabilizing the people's livelihood and tasks and ways to be adopted by Party and government organs, working people's organizations, military organs and all other sectors and units.

Both the enlarged meeting and the meeting of the Political Bureau of the WPK Central Committee held this year dealt with the prevention of COVID-19 as the most important agenda item and took strong and drastic measures to this end.

The devastating epidemic found its way to 210 countries as of Apr 16, bringing the death toll to more than 145 000.

Fortunately, however, no infected case has been reported in the DPRK.

This provides clear testimony to the timeliness of its anti-epidemic measures and the proper maintenance of them at a due level.

The DPRK was the first to declare a national hygienic and

anti-epidemic system and take emergency steps in the world after COVID-19 broke out in China in December last year.

An immediate and strict emergency anti-epidemic system was set up from the central down to the lowest local levels, and thorough inspections were made and strict quarantine was enforced at all points of passage including borders, harbours and airports under the unified command of the central emergency anti-epidemic headquarters. Foreigners, returnees from overseas trips, contacts and other local people were put under strict medical observation and check-ups.

Careful preparations were made to detect and quarantine those who would be suspected of contracting the epidemic, while efforts were made to secure reagents for examination and diagnosis and disinfectants as well and a hygienic information campaign was conducted on a large scale.

The anti-epidemic measures were ratcheted up a level higher on Feb 29 and no exception was allowed under the national emergency anti-epidemic system.

All the people turned out as one in the fight against COVID-19.

Everyone regarded it obligatory to wear a mask, took temperature three times a day and disinfected hands, public places and dwelling houses.

Vacation was declared for all students and the mothers with infants who had no one to turn to for childcare were given temporary leave.

Hygienic and anti-epidemic institutions at all levels examined

water quality in rivers and lakes as well as in residential areas, institutions and enterprises and stepped up inspection of wild animals and birds, and the work to maintain sanitary environment throughout society in spring was conducted scrupulously in close combination with anti-epidemic work.

The household doctor system whereby all families are under the care of doctors in charge proved very effective.

The household doctors made the rounds in the areas under their charge on a regular basis to disseminate hygienic information about the danger of COVID-19, the route of its spread, its clinical symptoms, preventive and curative measures and antisepsis and made sure that everyone took their temperature more than three times a day.

A series of state measures were taken to look after people including those in quarantine.

Officials of Party and government organs and working people's organizations at all levels took immediate steps to solve problems arising in people's living by prioritizing the work to ensure that isolated patients, residents and employees suffered no inconvenience in life.

The fine trait of helping one another forward was displayed innumerable to constitute a social feature.

All the foreign visitors in the country have been released from lockdown and normal activities have been allowed for those who have gone through 30 days of medical observation.

By Kim Rye Yong PT

and others in real time and a power supply system based on solar panels.

'Paekhak' dental supplies fashionable

The "Paekhak"-brand dental hygiene products are very popular among the local people.

They are produced at the Pyongyang Dental Hygiene Supplies Factory equipped with over 30 synthetic analysers and over 100 advanced production facilities.

In February 2015, Supreme Leader Kim Jong Un initiated the construction of the factory and gave detailed guidance over its miniature for several times.

When the factory was completed in June 2017, he came to the site and said that it is a factory greatly conducive to the promotion

Nationwide

Classes begin partly at some educational institutions

Schools opened for university students and senior middle school students in their final year all over the country on Apr 20.

The DPRK was the first to declare the national emergency anti-epidemic system in the world to cope with the pandemic of COVID-19 and, as part of state measures, it prolonged the vacation of all universities, middle and primary schools and kindergartens and suspended the operation of nurseries.

Since no one has been infected with the epidemic and amid strong and strict preventive measures taken steadily, those students have been freed from quarantine.

Accordingly, disinfection, medical check-up and other preventive steps are taken in a more thoroughgoing way at the educational institutions.

North Hamgyong opens cage-net fish farming grounds in Lake Jangyon



North Hamgyong Province has newly set up two mobile cage-net fish farming grounds, one in rectangular and the other in petal shapes, to breed freshwater fish of various species in Lake Jangyon. The fish farming grounds are equipped with a remote control system to monitor and control feed supply, temperature, pH

MARRIAGE

Triplets tie the knot all together



JI WON CHOL / RODONG SINMUN
Women triplets and their spouses are happy with the wedding gifts from Supreme Leader Kim Jong Un.

Women triplets living in the City of Samjiyon, Ryanggang Province of the DPRK, got married on the same day.

Jang Un Hye, Jang Chung Sil and Jang Po Dap had lived in Pyongyang before volunteering for the construction of Paektusan Hero Youth Power Station as girl shock brigade members. They have settled in Samjiyon out of a desire to contribute, though little, to sprucing up the sacred place of the revolution.

When Supreme Leader Kim Jong Un inspected Samjiyon in April last year, he visited the new house into which the triplets moved to see how they lived and told them with parental affection to write a letter to him after getting married to good men.

Before the wedding ceremony they wrote a letter to the

Supreme Leader telling how they met their spouses and expressing their desire to repay the warm care shown by him.

The Supreme Leader read the letter and sent wedding gifts to them.

Their wedding ceremony took place on Apr 19.

Party and government officials of Ryanggang Province and Samjiyon, officials of Construction Division 216 and families and relatives congratulated the three wedding couples.

The three couples extended their heartfelt gratitude to the Supreme Leader for valuing what they did as the young people of the present times and showing warm care for them repeatedly.

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of the people's health and the one to which he attaches great importance. And he gave precious teachings that should be regarded as a guideline in managing the factory.

It now turns out tens of millions of toothpastes, gargles and dental sanitary implements annually.



integrated control system.



Orangchon Reservoir completed, starts irrigating fields

The Orangchon Reservoir was inaugurated and started irrigating fields in North Hamgyong Province on Apr 17.

The province has finished the huge construction project involving the building of a dam with a volume of nearly a million cubic metres in a little over one year.

The completion of the Orangchon Reservoir has provided a guarantee for increasing cereal production in Orang and Myongan counties and made it possible to apply the water from the Phalhyang Reservoir to electricity generation and fully supply residents with water for sanitation.

THE PYONGYANG TIMES

POWER-SAVING

Businesses adopt power-efficient modes

Hoechang leads the way in applying power-generating systems

Industrial establishments in Hoechang County of South Phyongan Province are satisfying power needs by themselves by establishing different power generation systems relying on locally-abundant fuel.

The Sinhung Mine set up an electricity production system with a total capacity of 960kW with the help of coal gas dynamotors with different power outputs.

It installed a 300 kW-capacity coal gas dynamotor at a shaft

to transport ore and several 30 kW- and 50 kW-capacity ones at the dressing plant.

According to manager Sin Myong Chol, the introduction of the dynamotors has helped reduce per-hour diesel consumption by a third or fourth as compared to previously.

The mine also ensures the full operation of 160 kW-capacity high-voltage motors even at low voltages by conceiving a novel idea of changing the low- and high-tension axles of pole

transformer, while building up a backup generator and repairing generators in a planned way. Wind-driven turbines and solar panels are also employed to ensure lighting for office rooms and operate electronic equipment.

The textile mill in the county fixed over 20 large-capacity solar panels so as to produce a great deal of electricity by itself.

Technicians of the mill replaced AC motors in twister, joining machine, woof winder and looms with highly-efficient DC motors with larger torque, thereby reducing power consumption of each equipment by 50-77 percent.

The industrial source mobilization company manufactured several 50 kW- and 75 kW-capacity coal gas dynamotors to ensure the full operation of dozens of electric motors and supply surplus electric power to dwelling houses.

The farm machine station, medicine management station, Mirae E-library and different schools in the county are now working to build their own power supply systems.

By Jong Hwa Sun PT



Production processes are run at the Sinhung Mine in Hoechang County, South Phyongan Province, with electricity generated from coal-fuelled dynamotors.

Methane adopted to produce electricity and ensure heating

The Muan Farm of the Sungni Motor Complex established a power generation and heating system based on methane gas.

"Our farm raises more than 1 000 pigs and over 3 000 ducks, which daily pass out 5.5 tons of excreta. It ferments and turns into methane whose daily output is 200 cubic metres," said staffer Han Tong Ho.

According to him, the produced gas goes through a dynamotor to turn into 40 kW of instantaneous power.

The electricity is used to run over ten machines including grain crusher and feed mixer in the feed processing ground on a regular basis while providing heating and lighting for eight blocks of animal barn with each being 180 square metres, the ducks' egg hatching room and mushroom cultivation ground.

"We ensure the temperature in the barn at over 18°C on a constant basis and the daily lighting time for more than 16 hours. This has helped increase the fattening rate of pigs and ducks and meat and egg outputs

as well," said workteam leader Pak Kwang Chol.

It is said that a piglet in the farm grows to weigh 10kg in 25 days, as compared to 7-8kg in a household.

The temperature of the egg hatching room is steadily ensured at 38°C to maintain the hatching rate at comparatively high 75 percent.

The residues from the production of methane are said to be good for growing pigs, fish, cereals and vegetables.

The dregs from the fermentation process help accelerate the growth of pigs, shorten their fattening period by one or two months and save large quantities of feed in growing a pig weighing 100kg.

And when they are applied to paddy and non-paddy fields as fertilizer, the yields rise 1.5-3 times more than when using ordinary humus or chemical fertilizer.

By Yun Kyong II PT



A methane-fuelled power generation and heating system set up on the Muan Farm of the Sungni Motor Complex.

Steam generator helps cut power consumption

The Anju Unha Garment Factory in South Phyongan Province made and installed a steam generator to free itself from electricity consumption in the ironing process.

"Until only last year we used 28 steam irons and seven table boilers consuming one or four kilowatts of instantaneous power in the ironing process. This meant our factory used up 980 kWh of electricity on a daily average in the process alone," said chief engineer Pang Yong Ae.

The factory set the reduction of power consumption as a crucial issue in increasing production.

"We visited different advanced units to acquaint ourselves with their actual situation and experience. In the course of that we came to know that the establishment of a steam production process based on a coal-fired boiler is the most effective way," said technician Ho Song Il.

The steam generator of the factory is only 150cm high and 80cm in diameter.

By Chae Hyang Ok PT

Only 100-130kg of coal is said to be enough to produce steam for the ironing process and the surplus steam is used for heating cutting and packaging workshops covering 600 square metres.

The temperature of the waste water is 30°C on average and it automatically enters into the water jacket of the boiler. Thus it is heated quickly, reducing coal consumption that much.

"I am elated with work as the steam pressure is high. And it ensures the quality of products, while increasing productivity," said worker Han Myong Sim.

According to Ho Song Il, as steam circulates, no water furs form in radiators.

"We have reduced production costs by introducing the steam generator. We are going to provide heating for the multi-storey production building and the office building by means of this boiler," said manageress Ri Un Hui.

Production processes turn into energy-saving

The Pothonggang Footwear Factory in Pothonggang District, Pyongyang, earns considerable profits by remodelling its production processes into electricity-saving ones.

"Recently, our factory refashioned the uppers drying furnace in the sewing process, thus remarkably reducing the consumption of labour and electric power as compared to previously," said Kim Song Hui, chief engineer of the factory.

In the past, the furnace was designed to spread electric heat by running a motor connected to the blower installed at heating rods, thereby consuming much electricity.

Technicians of the factory conceived an idea that the fixation of a radiator plate made of metal with high heat conductivity at heating rods will enhance the heat-exchange capacity and thus evenly distribute heat in the furnace, and carried out the remodelling of the equipment.

They invented not only a radiator plate to be installed at the heating rods but different jigs and equipment.

The factory refashioned injectors to remove the adhesive-dependent shoe-making process and directly covered various shoe moulds with outer rim, thereby halving the consumption of raw materials and manpower while saving 60-70 percent of electricity per hour.

It also downsized a plasticizer preheater and adhesive stirrer, which had consumed much electricity in the injection process, in order to produce much pulverized matter for adhesion with less electricity.

According to operator Ri Hye Ryon, the renovation of the injector helped decrease power consumption and shorten the assembly time of products to two-thirds.

Besides, the factory reduced power consumption by one seventh as compared to before by introducing a high-speed pulverizer into the waste material pulverizing process.

"We are going to remodel all drying furnaces in the factory into electricity-saving ones in the future," said manager Ri Mi O.

By Kim Il Jin PT

STONE

Natural stone processed into good products

The Pyongyang Building Stone Factory has recently brought out processed natural stone products of good quality.

"The natural stone kitchen unit produced by our factory is much favoured among users for its beautiful and elegant appearance and long serviceable life, and the demand for it is growing day by day," said developer Ri Yong Sun.

In the past, the kitchen unit made of tile or stainless steel lost lustre with the passage of time as its serviceable life was about five years.

But the life span of the kitchen unit made of natural ashy granite or granite coloured in different dyes is said to be longer than the previous one, with its glossiness reaching over 95 percent.

"When I use the kitchen unit made of natural stone, it is very convenient since it does not discolour even if oil, alkali or acid is applied to it," said Pak Kum Ran living in Phyongchon District, Pyongyang.

The factory also turns out artificial stones in different colours.

They are widely used in building floors of corridors and stairs of structures, look fine even though they are used as

flooring panels for dwellings or office rooms and have good durability.

In the past, a colouring method based on metallic salts was applied to the production of artificial coloured stones, which revealed some defects in which the colour of product failed to blend in well with the internal environment.

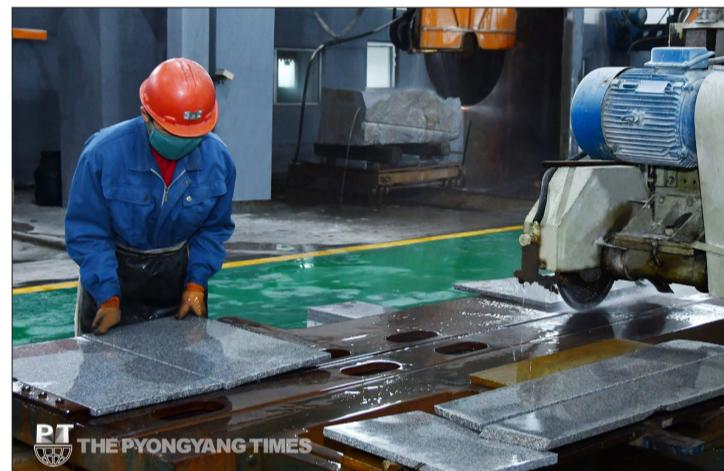
That was why the factory researched a technology for introducing the nano-colouring method with simple process, which is conducive to changing the colour of stone surface into any colours, thereby producing artificial stones in a dozen

colours including red, green and yellow.

It also developed an ornamental artificial coloured stone by relying on locally abundant raw materials, and established a process of colouring natural granite based on non-aqueous dyes.

"We are going to further develop the nano-colouring method by channelling big efforts into developing a stone colouring substance which is highly resistant to weathering," said Kim Song Ho, chief engineer of the factory.

By Yun Kyong II PT



A worker engages in cutting of processed natural stones at the Pyongyang Building Stone Factory.

WATER

To provide people with fresh and clean water

"Everyone in our city knows the name of Ri Jung Gun. He always works hard to supply water to citizens," said an official in Tokchon.

It was some ten years ago when Ri Jung Gun was appointed manager of the water supply and sewerage and heating station in Tokchon.

The station has lots of equipment in nearly 20 pumping stations. However, at that time many water pumps were out of order and almost all water pipes were so corroded their replacement brooked no delay.

Ri racked his brains to solve the problem. One day, he found out a decades-old settling pond in the Undok area. In actuality, it was a huge swamp overgrown with weeds.

All the employees of the station turned out to cut deposits out of the pond and plough the land around it. As a result, four filter beds came into being after a while and the land in their vicinity turned into vegetable fields, with a small greenhouse springing

up in the upper side of the filter beds. A few months later, dozens of tons of fresh vegetables and catfish were produced from there.

"This was the starting point for the station's revitalization," said Ri Jung Gun.

Later, the station built several large-scale purifying facilities including Sinhung and Kangan settling ponds. The employees produced much compost by relying on the ponds and harvested vegetables in spring and autumn and hauled catfish and other freshwater fishes every year.

Afterwards, it buckled down to the reconstruction of water supply and drainage network with materials and equipment it had provided by its own efforts.

Ri travelled around the city in the daytime to learn about the actual situation of the water supply and drainage network and read books at night-time to acquire knowledge about water supply and drainage and machines as well.

"Our manager is able to guess

which part requires replacement and how long it can serve even if he hears only the sound of running machines," said Kim Won Hak, workteam leader of the youth pumping station.

Ri made the blades of water turbine with scrap iron and brought out a new method of making the friction plate with cast iron instead of red copper to annually economize on a large amount of nonferrous metal.

The station replaced water supply and drainage pipes measuring a total of well over 100 kilometres and hundreds of pumping and purifying facilities and expanded their capacity in a few years.

Without resting on his laurels, the manager searched all mountains and valleys in the city for the mineral water source with good quality so that the citizens could drink quality water.

According to service worker Kim Son Nam, the mineral water is very effective for curing colitis for its high contents of calcium and ions.

TEXTILE

Mill brings out new cold-proof fabric

The Pyongyang Kim Jong Suk Textile Mill has developed a functional cold-proof fabric and established a corresponding production line.

According to lead developer Ri Sun Hui, the fabric is great in terms of cold-resistance, air-permeability, intensity, tensility and waterproofness and elasticity.

The technicians analysed the texture of a foreign-made ski suit to draw up specifications for the new fabric.

After that, they carried out several rounds of tests using Tetrox rayon.

In the course of this, they found a rational method of eliminating frequent snapping caused by napping on cloth and solved the problem of vibration of looms stemming from the high density of weft threads.

They also established a dyeing process which is optimized according to the properties of the new fabric and improved its functionality

by adding a waterproofing layer.

They decided on a suitable plastic coating liquid and its thickness so as to raise the cold-proof and waterproof qualities and ensure elasticity and came up with an appropriate coating method and process.

"We fully guaranteed such qualitative indices as tensile strength, extensibility and repeated creasing resistance by finding out the most suitable coating liquid concentration, coating speed and drying temperature for ensuring the adhesive strength of the coating layer," said developer An Jong Chol.

"The home-made ski suit is very comfortable as it preserves elasticity even when the temperature is very low," said Pak Kwang Chon who has been to the ski ground of the Yangdok Hot Spring Resort.

By Chae Hyang Ok PT

SOFTWARE

Stability evaluated for speedy rotary machines

Pyongyang University of Mechanical Engineering has developed a system of evaluating the stability of high-speed rotary machines.

The system models such rotary machines as feed water pump and turbine generator of thermal power stations in terms of dynamics and makes a comprehensive analysis of installation elevation, assembly feature, bearing's stability and others in the working condition to evaluate the overall stability of machinery and equipment before indicating renewal ways.

"The stability evaluating system for high-speed rotary machines is one of the technologies which are competitively being researched worldwide," said Kim Su Gwan, lead developer and section chief.

According to him, most of such rotary machines as thermal turbine generator and feed water

pump which are now operative in the country were made and installed before the development of this system.

At first, researchers brought out a portable measuring apparatus, which is designed to assess imbalance, deflection of shaft centre and shaft bending on the spot by measuring the vibration of equipment and helps make troubleshooting accordingly.

"We introduced the technology into a feed water pump, which had stopped working for several years, in the Chongchonggang Thermal Power Station. As a result, we lowered the vibration level of pump's motor below the tolerable limits of international standards and made it run without repair over three years," said developer Kim Jong Gil.

In the course of introducing the measuring apparatus into several units, they established the system of evaluating the stability of feed water pump and turbine generator at thermal power stations and introduced the system into different thermal power stations.

The system is applicable to different kinds of rotary machines, especially pumps of all sizes, compressor, high-speed pulverizer, centrifuge and blower.

By Kim Kum Myong PT

COMBAT

Emergency anti-epidemic measures ratchet up

The Non-permanent Central Public Health Guidance Committee of the DPRK has taken a series of measures to further build up the national emergency anti-epidemic system until the world can control the spreading of COVID-19.

Under the unified guidance of the central emergency anti-epidemic headquarters, the emergency anti-epidemic headquarters at all levels are working energetically with their main stress put on strictly maintaining the stable situation in

the combat against the epidemic on the principle of subordinating everything to ensuring the people's health and life.

Since the borders, airspace, waters and the areas along the Military Demarcation Line have completely been blocked, strict steps are being taken to ensure that there is no inflow route of the epidemic and prevent any negligence.

The anti-epidemic work has been intensified to ensure consistency in examining, quarantining and sterilizing the

personnel and materials from abroad and supplying materials.

Information activities and medical observation keep growing for residents while those who have been under medical observation are released according to the anti-epidemic rules.

All foreigners have now been freed from quarantine in the country and normal activities are provided to those who underwent a 30-day medical observation.

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EDUCATION

Original teaching methods prove effective in powering brain

"Human intelligence largely depends on the development of the right brain. The right brain, which is called an image or sentimental brain, develops very fast until one gets twelve years old and it is related to education in this period. We have created new intelligence developing educational methods by introducing the world's achievements made in intelligence education to meet our actual conditions," said O Chun Gyong, director of the pedagogy institute of Pyongyang Teachers Training College.

The institute devised and adopted the abacus calculation-based children's intelligence developing method and the general education method based on robot.

The former makes logical operation easy through abacus calculation. The children who learned how to calculate numbers with an abacus for three months are able to mentally make the addition or subtraction of three-digit numbers more than three per second and do accurate calculation while conducting two or three mental activities including the playing of piano or speaking of foreign language.

According to the trial introduction of this teaching method for 40 second-year pupils, more than ten pupils performed a precise calculation of 46 three-digit numbers in 15 seconds while carrying out such complex tasks as doing Rubik's cube, hearing and telling triads and conversing in a foreign language.

The latter is a kind of STEM education devised to suit the psychological characteristics of primary schoolchildren.

"It will be unbelievable if primary schoolchildren are said to make robots with their own efforts, but they can easily



Researchers of Pyongyang Teachers Training College hold a group discussion about teaching methods using robot.

conceive, manufacture and control robots for education that are designed to do any simple 'work,'" said O Chun Gyong.

Researchers made sure that schoolchildren manufacture a robot for education that can perform a simple function by taking advantage of their curiosity and interest in robot. They complete their creation with the help of such robot parts as construction set they used to play during their kindergarten days while conceiving a robot they want to make, designing the one with computer and making required parts with a 3D printer.

In the course of this, they come to acquire wide scientific and technological knowledge, engineering principle and programming through practice before theory and to cultivate cooperative spirit while pooling their intelligence and efforts.

After finishing robot-making, they express their views while operating their creation.

The two above-mentioned methods developed by the researchers prove effective in kindergartens and primary schools throughout the country.

The researchers have so far written several valuable

reference books related to the development of intelligence and developed a system of evaluating the development of children's right brain through robot for education and an education control system in which teachers lead the whole course of lesson so that the schoolchildren can be proactive inquirers and learners.

By Kim Rye Yong PT

PHARMACY

Over a hundred kinds of medicines released

The pharmaceutical industry sector is working to increase medicine production by relying on domestic raw materials.

According to An Song Il, deputy department director of the Pharmacology Institute of the Academy of Medical Sciences, said that the institute, in cooperation with such educational units as Pyongyang University of Medical Sciences, deepened the study of drug materials and intermediates,

thereby ensuring the domestic production of more than a hundred kinds of medicines.

GARDENING

Pyongyang streets dressed in spring attire



Floricultural workers tend a crossroad flowerbed in Sosong District, Pyongyang.

Spring is setting in and the streets of Pyongyang have been covered with beautiful flowers.

"We are decorating the streets in our district with beautiful flowers we have cultivated in the greenhouses to make them more attractive. So the district population call us gardeners who not only grow flowers but also landscape streets," said Mun Myong Nam, manager of the floricultural farm of Taesong District in Pyongyang.

According to him, the farm employees transplanted over 8 000 flowers in seven kinds including common marigold, cat's face, French marigold and tricolor chrysanthemum into the flowerbeds and flowerpot stands on the streets to decorate them beautifully to mark the Day of the Sun (April 15) this year.

Every year the farm grows tens of thousands of flowers on the flowerbeds and flowerpot stands on the seven streets of the district including Podunamu Street.

"It is not easy to decorate all streets of the district with various flowers according to seasons with only dozens of employees. But we've set up flowerbeds and flowerpot stands in various artistic forms and shapes to adorn streets with flowers. We take pleasure in

By Kwon Hyo Song PT

Research projects are also pushed to increase the proportion of Koryo medicines among essential drugs.

"Achievements have also been made in making extracts of Koryo medicines, raising their standardization level in keeping with GAP and securing herb resources," said Yu Yong Il, department chief of the Koryo medicine production management bureau of the Ministry of Public Health.

As they cultivate medicinal herbs in a scientific way, herb producers work to increase production through tissue culture, put the production of age-old Koryo medicines on a more scientific basis and increase the varieties of traditional medicines.

By Ri Sung Ik PT

DENTAL CARE

Implantation methods improved



Surgeons undertake an implantation at the Ryugyong Dental Hospital.

The Ryugyong Dental Hospital devised and introduced different implant treatment methods.

A dental treatment method of directly fixing an artificial tooth on the alveolar bone in the place of drawn tooth, implant treatment is as effective for patients as retaking their original teeth.

"Implantation is generally applicable after a certain period of time since the removal of a tooth. But we have developed and introduced different methods which facilitate immediate implant treatment while improving the defective state of alveolar bones," said Kang Chol Man, a department chief of the hospital.

While applying various implant treatment methods, I've keenly realized that high operating skills and rich experience are very important, said prosthetist Ham Tong Hwan.

What is crucial in the immediate implantation is to pay attention lest alveolar bones are injured when teeth are pulled out and to fix implants based on an accurate decision about the quality of alveolar bones. Odontologist of the hospital conducted thousands of simulated operations to this end.

The vital condition for the implant treatment is the state of alveolar bones.

But every patient has different alveolar bone conditions.

For example, some patients have broken alveolar bones or uneven heights of alveolar bones. Others find it hard to apply the implant treatment in accordance with the number of drawn teeth due to the poor condition of overall alveolar bones.

To cope with this, doctors came up with such treatment methods as maxillary sinus lift, overdenture by hook and overdenture by bar, all of which presuppose high operating skills.

By Ri Sang II PT

ROAD SIGN

Directional reflectors applied to roads in Pyongyang

Shortly ago, directional light reflectors were installed into road signboards in Pyongyang to help ensure safe driving.

The background of the light reflectors is made of the aluminum foil, a leftover from printing shops.

For the production of the

RIDING

Equestrians polish up dressage

The athletes of the Mirim Riding Club are engrossed in enhancing their dressage.

Unfortunately, the riding club is still closed due to COVID-19, but the riders are assiduously honing their skills in keeping with the growing demands of clients who are eager to make friends with horses.

"People get more interested in horse riding as the days go by. The amateur riders competitions which were held in spring and autumn last year were a great success. And the riding exhibitions that were arranged at the time also catered for people's growing cultural and emotional needs," said Ri Tong Jun, secretary general of the Equestrian Association of the DPRK.

Dressage can claim to be an equestrian event which showcases the polished and smart skills of horses.

That is why dressage is appealing to not only amateur riders but many other people.

"It has been about three years since we started dressage practice and our athletes completed the basic training and have entered the stage of perfecting high-grade dressage movements. As compared to foreign information, it can be

said to be a fast pace. Our riders are really great," said trainer Sin Jong Chol.

The front-runner in dressage is 19-year-old Ri Kum Il.

He was fond of horse-riding in his middle school days and attended the juvenile extracurricular riding course in the riding knowledge learning space of the club.

"Piryugang has now become my close friend. She promptly understands my intention and is very good at leg-yielding in trot, pirouette in canter and piaffe," said Ri.

When Piryugang and other horses smartly trot as they stretch their hoofs straight, they

seem to perform ballet and their passage resembles the hopping of kids.

And the athletes look like acrobats when they perfectly perform the complicated dressage movements as they straighten their backs, breathing the same breath as the horses.

"We are going to perfect our skills as early as possible so as to make people happy, and take part in international dressage events," said trainer Sin.

The riders of the club also set new records in steeplechase and race.

By Kim Rye Yong PT



A rider practises dressage at the Mirim Riding Club.

RYANG KUM CHOL

HERB

Advanced methods introduced into herb farming

The Sangwon herb farm under the Koryo medicine production management bureau of the Ministry of Public Health is one of the country's leading medicinal herb farm.

Established in 1968, the farm grows over 30 species of medicinal herbs and trees on hundreds of hectares of fields.

"Every herb is different in seeding time, number of plants per hectare, manuring time and harvest season. If you miss the right time, the yields and medicinal efficacy drop remarkably," said manager Kim Hyong Guk.

The farm is punctual in

sowing seeds of herbs to meet their characteristics and has introduced seed- and land-saving cultivation methods to double herb production.

"We employ advanced science and technology to register good results in herb production," said chief engineer Jong Chun Jo.

According to him, the farm planted 1-1.5 tons of 3 to 4cm-long herb seedlings per hectare in the past, but now it raises nutritive granulated seedlings to transplant them, thereby planting hundreds kilograms of seedlings per hectare to save more than 1 ton of them.

By Kil Chung II PT

that ensure reflectivity and directivity of light and adjusted the resolution, printing plate movement speed and printing speed in the computer-aided printing process.

Developer Ri Kum Chol said that the light reflected from the directional light reflector is so intense that the driver can distinguish the road signs at the distance of hundreds of metres even at a speed of 80-100km/h.

According to him, the light reflector has better resistance to sunlight and weathering and

a several times longer lifespan than the foreign-made light reflecting papers applied on road signs.

Besides, the production cost is only some 60 percent of the light reflecting paper since computers directly print the signs.

The directional light reflector is also applicable to the production of license plates, doorplates of public service amenities and street decoration plaques.

By Ri Myong Jun PT

CRISIS

Water crisis remains serious

At present, about 2.2 billion people of the world live in the areas lacking clean water.

Climate change is one of the major factors causing serious water shortage. It changes the flow of rivers and reduces the quality of water, thereby exerting a negative impact on water circulation on the earth.

If such abnormal phenomena persist, it is said that 3.5-4.4 billion people would be troubled by water shortage worldwide by 2050 and more than one billion out of them would be urban

dwellers.

Therefore, experts fear that the current situation is likely to lead to a world war to get water resources.

The world witnessed more than 20 cases of military conflicts over water resources in the latter half of the 20th century. The fact is eloquent testimony to the possibility that water resources could spark clashes and wars.

In order to overcome the serious water crisis, it is needed to increase investment in securing clean water resources

and building basic facilities related to water and boost water utilization efficiency.

Well aware of the seriousness of the water crisis, many countries around the world focus on research into the effective use of water, desalination of seawater, increase in its efficiency and others to secure water resources.

An Asian country, which relies on import for 40 percent of water, has come up with a new technology for addressing water scarcity. It is to purify waste water using the small black sponge called a carbon

fibre gas gel, and the sponge is said to be able to absorb an amount 190 times greater than its weight.

The technology reportedly makes it possible to deal with a large volume of waste water, pollutants, micro plastic, etc. The country is planning to use it in purifying waste water and sewage, storing water and disposing of plastic waste.

Different countries will make constant endeavours to resolve the water crisis.

By Song Jong Ho PT

JAPAN

Children most vulnerable to abuses

UN and other international organizations express concern over the desperate plight of children in the countries plagued by civil war and disputes.

However, children have become a major target of crimes of different kinds in one country which is free from civil war and dispute.

Last year, child abuse cases uncovered by the police amounted to 1 972, with 1 991 children falling victim to them. The figures were recently

published by a relevant Japanese agency after synthesizing child abuse cases that occurred in Japan last year.

More shocking is that most of the offenders and criminals were fathers and mothers of the victims.

The figures seen above merely account for uncovered cases. No doubt more children did not dare to report to the police for fear of coercion and threats of their parents and offenders and there were much more cases of violence against children that were not

reported.

It is the bounden duty of parents to love and take care of their children and it is their normal thinking that they have to even flog their children to correct their bad habits or faults. But the Japanese society is so rife with the perverted thought of considering children as the subjects whom they vent their anger on or commit outrages against and the decadent way of life by which they abuse children as a pleasure that many children terribly suffer from them.

Japanese children not only suffer from family violence. Many of them were seduced by persons they knew through SNS and fell prey to sexual crimes, the number reaching over 2 000 last year alone. The figure is much higher than that in 2018 and a record high.

It is said that student abuse cases on campus also increase and the number of students arrested or called into question by the police is on the rise.

By Om Ryong PT

ISRAEL

Outright challenge to the call of international community

Despite the firestorm of protest and denunciation from the international community, Israel is going to extend Jewish settlements in East al-Quds on a large scale.

It is reportedly aiming to build 3 000 and 2 200 dwellings in two districts of East al-Quds respectively.

Netanyahu blatantly said in public that the housing development projects will deal a blow to the dream of the Palestinians for liberation.

Al-Quds is a very sensitive place politically.

The name al-Quds is derived from an Arabic word meaning "holy place". Also called Jerusalem, it has been the Holy Land of Judaism since the 11th century BC, that of Christianity since 335 and that of Islam since 662. It also has some part of al-Aqsa Mosque, one of the three Muslim shrines of the world. Therefore, a United Nations decision in 1947 declared the place as an "international city".

However, Israel occupied the western part of the city in 1948 and the eastern part

through the 1967 Six-Day War. Since then it encroached on al-Quds and other regions by building and expanding Jewish settlements.

Consequently, the Palestinians were driven out of their native place and their right to existence was put in serious jeopardy.

In order to solve the Palestine-Israel issue, the

international community took a measure to fix the boundary between them according to the borderline set up before 1976 and asserted that both sides should reach a peaceful agreement without conflict and dispute.

On that account, Israel's moves to expand Jewish settlements in East al-Quds is an open challenge to the demand of

the international community.

Analysts express their concern, saying that if its plan for extending the settlements is carried out, it would swallow up the whole of al-Quds and dominate the Middle East, and yet that would not be enough to satisfy the greed of the Israeli rulers.

By Choe Yong Nam PT

IRAN

US decried as source of instability

The Iranian minister of defence and armed forces logistics on Apr 17 censured the US for causing troubles with threat and sanctions, describing the illegal and aggressive stationing of the US forces in the Persian Gulf region as the source of troubles for the regional peoples.

The Iranian Islamic Revolution Guards Corps demanded the withdrawal of US troops from the Persian Gulf and West Asian region.

The navy of the Iranian

Islamic Revolution Guards Corps in a statement on Apr 19 said that the US navy is posing threat to regional peace and creating a new danger while repeatedly committing illegal acts in the Persian Gulf, branding the US' illegal presence in the Persian Gulf and West Asia as the source of instability. The only way to ensure sustainable security is to completely withdraw all the US troops, the statement noted.

The US should abide by international laws and maritime

conventions in the Persian Gulf and Gulf of Oman and refrain from running any risk and spreading false rumours, it said, warning that Iran would cope with it resolutely if the US shows any folly.

In another development, the Iranian army has received new drones on Apr 18.

The drone can fly up as high as some 14 000m and cruise as far as 1 500km.

It can reportedly load three bombs.

Briefly

UN

Human rights expert reveals US' neglect of the vulnerable

The UN Human Rights Council special rapporteur on extreme poverty and human rights in a statement on Apr 16 said that the poor has been left out of the US' strategy for coping with the novel coronavirus infection.

The poor people are suffering the most from the pandemic in the US, he said, adding those in low-income brackets are faced with a far bigger danger of infection due to the inveterate neglect and discrimination.

Cuba

Cuban FM highlights danger of US anti-Venezuelan military action

The Cuban Foreign Minister warned that the recent deployment of the US warships and special forces around the waters of Venezuela is a serious threat to peace and it may lead to a military invasion against Venezuela at any moment.

Call

Russia, Syria appeal for pressurizing the US

Russia and Syria issued a joint statement on Apr 15 to call on the international community to put pressure on the US to lift sanctions against Syria.

The US, like the international terrorist organization of Islamic State, is indifferent to the danger of spread of the epidemic in Syria and does not heed the UN's suggestion of ending the sanctions, the statement said, calling for pressurizing the US and its allies into lifting the unlawful and inhuman sanctions.

China

US criticism dismissed as unfounded

"The US has repeated a number of untrue criticisms and China exposed the lies it is telling by enumerating facts in detail," said a spokesman for the Chinese Foreign Ministry at a routine press conference on Apr 15.

His remarks came after the US Secretary of State asserted that China should be called to account at an opportune time, saying it didn't inform them of the disease in time.

Germany

Germany brands US as present-day pirate

According to German magazine Spiegel, the US recently snatched 200 000 masks in Thailand's Bangkok which were on their way to Berlin on the order of Germany.

A German newspaper branded the US act as present-day piracy.

THE PYONGYANG TIMES

PROFILE

Taekwon-Do practitioner not resting on her laurels

Among the top ten Taekwon-Doists of the DPRK of last year was Kim Hyang Sim (pictured) at the Taekwon-Do club of the Korean Taekwon-Do Committee.

Born of an ordinary worker's family in Chaeha-dong of Sinuiju, North Phyongan Province, she was fond of music since childhood.

As she flaunted her music skills learning piano, sohaegum (a kind of traditional fiddles), accordion and other musical instruments at Sinuiju City School of Arts, her parents expected she would make a brilliant musician.

However, Hyang Sim opted to be a Taekwon-Do player contrary to her parents' expectations. "One day when I was 11, I saw through TV Taekwon-Do practitioners in white uniforms polishing their skills. Their movements were so appealing I was fascinated by the martial art of our nation. So I decided to turn to Taekwon-Do and badgered my parents to give me consent," she recalled.

Her parents adamantly turned down her request, saying music was better for girls. But she was unyielding and finally obtained



a presumed consent from her parents who believed their innocent babe would give up the sport soon.

This was how she began to learn Taekwon-Do at Sinuiju City Juvenile Sports School.

She adapted to her new "vocation" in no time and as she acquired its skills, she got ever more interested in Taekwon-Do. The girl with outstanding kinaesthesia won the individual pattern event (second gup) at the then Jongilbong Prize national juvenile Taekwon-Do contest six months after she started Taekwon-Do. The triumph came as a pleasant surprise to her parents and transformed them into her active and encouraging supporters. She enjoyed the limelight on

the home front afterwards, and launched her professional career at the Taekwon-Do club of the Korean Taekwon-Do Committee in 2007.

The cheerful yet fiercely competitive woman worked out hard at the training ground even on holidays.

At the fifth Asian juvenile Taekwon-Do championships in 2010, she won the first place and obtained a technical prize in 64kg-category individual sparring by overpowering all her rivals by capitalizing on her forte of jumping 360-degree spin kick.

She bagged lots of gold medals by taking part in five rounds of world Taekwon-Do championships and four Asian events and is now a Taekwon-Do star.

She was awarded Kim Il Sung Youth Honour Prize in 2011, the title of Merited Athlete in 2015 and that of People's Athlete in 2017.

"I love Taekwon-Do which is everything in my life. I will train hard and achieve good results to live up to everyone's expectations," she said.

By Song Jong Ho PT

TEA

Korea's tea culture dates back to Three Kingdoms period

According to the *Sanguksagi*, or the Chronicles of the Three Kingdoms, the Koreans had taken tea since the period of the Three Kingdoms.

Their tea culture made a rapid development in the period of Koryo.

At that time, the production, processing and treatment, transport, sale, supply and consumption of tea were undertaken by a central government office called *tabang* (teahouse).

Tabang also passed as the pharmaceutical office for the medicinal efficacy of tea.

All national events of Koryo Kingdom were preceded by *tarye* (tea drinking function). Tea consumption was so high in Koryo that the scale of *chasochon*, tea production unit, was also large.

Chasochon was run in different forms including government and civil grades.

The production and use of



A cup of Unjong tea and its products.

elegant Koryo ceramics were an important factor which furthered tea culture in that period.

The shape, kind and use of the ceramics were diverse, and teacup took a huge proportion of them.

There were so many masterpieces among teapots, tea-leaf jars and teacups that they were instrumental in enhancing tea culture to a high level.

Koryo's tea culture was widely known to other countries.

Jong Yak Yong, a renowned Korean scholar, named his nom de plume Tasan (a mountain of tea trees) in the meaning that he

had tasted the delicate flavour of tea while growing tea trees by himself, which shows that the Korean people had close relations with tea.

Explaining that tea tree represented chastity and fidelity as it easily dies when transplanted, a historian said a bride offered it to her husband's family as a present and mother-in-law gave her daughter-in-law its seeds as a show of her wish that she would keep her faith like the tea tree and honour her family.

Today, tea culture is widely encouraged in the DPRK.

Especially, insam tea can be used as a cardiac and tonic and is highly effective for curing indigestion, anemia and nervous system disorders.

Teahouses like Unjong Teahouse and Ryugyong Jangmi House can be found everywhere in Pyongyang alone.

By Om Ryong PT

DOG

National dog of Phungsan

A native breed of Korea, Phungsan dog has been famous for its bravery, cleverness and vitality.

According to a researcher at the Academy of Social Sciences, many animals of all sorts had lived in Korea's northern uplands with steep mountains and thick forests in the middle ages. At that time, Korean ancestors had selected dogs of superior strains among natives for hunting and bred such hunting dogs in the Samsu, Kapsan, Phungso and Phungsan (present Kim Hyong Gwon County) areas of Ryanggang Province.

The name of Phungsan dog was derived from this local name. The home of the dog was an isolated mountainous area, which constituted a fundamental basis for the dog to carry on its comparatively pure breed.

The Phungsan has thick and solid hind legs suitable for running in mountainous areas and is highly resistant to cold and diseases. Though it is of gentle nature and quite obedient to its keeper at ordinary times, it has a strong fighting spirit of biting to death its opponents at any cost.



That is why it has particularly been loved by locals.

It was registered as a national living monument in April 1956. President Kim Il Sung underscored the need to look into the pure-bred of Phungsan during his visit to Ryanggang Province in May 1958, saying the thoroughbred is a very good breed.

Chairman Kim Jong Il indicated ways for breeding Phungsan dog and visited Kim Hyong Gwon County in Ryanggang Province in the mid-1970s to take a step to quickly breed its thoroughbred. As a result, a sanctuary for the native dog came into being in the county.

The Phungsan dog is now enjoying its fame as the national dog of the DPRK.

KCNA

MONUMENT

Cliff known for unusual height and length

A magnificent yet elegant cliff comes into sight after passing Sinphyong county town in North Hwanghae Province along the motorway between Pyongyang and Wonsan.

It is located in the middle of the western region of Korea.

The locals call the cliff Talhaesansong, or the fort of Mt Talhae, as it spreads like a high fort.

The cliff was formed of quartzite in the upper Proterozoic era and is the highest and longest in Korea.

Its parent rock was formed about 1.1 billion years ago and it came to take on the present shape by weathering and erosion.

The cliff that came into being as the quartzite stratum was influenced by faulting and folding

mainly lies east and west and the slope of fold north and south. The cliff is 50-60 metres high and about 100 metres long.

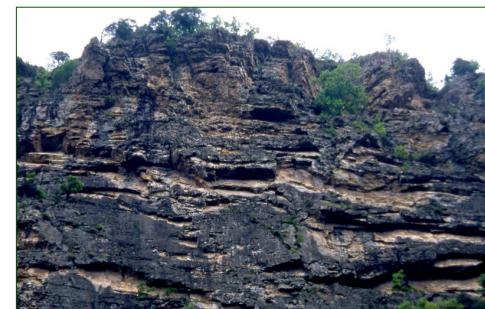
Around the cliff there rise Mt Haram which is 1 486 metres above sea level, Mts Tumu and Mannyon and other main peaks of the Ahobiryong Mountains and the terrain is terribly weather-beaten, forming steep slopes and ravines.

The wall of the cliff is thickly wooded with pine and oak trees.

Talhaesansong is of great significance in scientific study as a typical quartzite cliff formed in the middle of the Proterozoic.

It is under good protection as natural monument No. 179.

By Choe Yong Nam PT



The eastern cliff (left) and western cliff (right) of Talhaesansong, or the fort of Mt Talhae.

