JPRS 70596

6 February 1978

ASIA

TRANSLATIONS ON NORTH KOREA

No. 574

OUTLINE OF NATURAL AND ECONOMIC GEOGRAPHY

U. S. JOINT PUBLICATIONS RESEARCH SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22151. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

BIBLIOGRAPHIC DATA SHEET	1. Report No. JPRS 70596	2.	3. Recipient's Accession No.
4. Title and Subtitle TRANSLATIONS ON NORTH KOREA, No. 574 Outline of Natural and Economic Geography			5. Report Date 6 February 1978 6.
7. Author(s)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address As above			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstracts

The report contains articles on political, economic, sociological, and government events and developments in North Korea.

17. Key Words and Document Analysis. 17a. Descriptors

North Korea
Propaganda
Political Science
Sociology
Economics
Culture (Social Sciences)
Ethnology

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group 5D, 5C, 5K

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
Unlimited Availability. Sold by NTIS Springfield, Va. 22151	UNCLASSIFIED	47
	20. Security Class (This Page) UNCLASSIFIED	22. Price PCA03

JPRS 70596

6 February 1978

TRANSLATIONS ON NORTH KOREA

No. 574

OUTLINE OF NATURAL AND ECONOMIC GEOGRAPHY

Seoul PUKHAN in Korean Jul, Aug, Sep, Oct, Nov 77

[Article by Kim Yong-kuk, Republic of Korea geographer's description of the topography, climate, resources, and economic geography of North Korea.]

[Jul 77, pp 228-233]

[Text] Section 1. Natural Environment

1. Topography

In surveying the general features of the topography of North Korea, we first note that there are more mountainous areas than plains. Of the total area of our country, 75 percent is mountainous, while only 25 percent is lowland areas.

However, there are comparatively few steep mountainous areas. The major part of the country reflects a topography of low and even hills. Second, there are more plains in South Korea. In comparison, North Korea has more mountainous ranges. There are about 100 mountains with an elevation of more than 2,000 meters, all of which are concentrated in North Korea. From a general view, the northern and eastern regions are high, and the western region is low. Third, the topography of the mountainous areas is generally composed of high plateaus. Fourth, in terms of coastal topography, the east coast has simple coast lines. In comparison, the west coast has many ins and outs with many changes. Of course, the west coast is not so complicated with irregularities as the south coast.

Let us examine the mountainous areas first.

The Mach'on-nyong Mountain Range and the basalt lava plateau: This range starts from Mount Paektu, the highest peak in our country, follows the boundary between North Hamgyong Province and South Hamgyong Province, and extends to the east coast. In the northern part of this mountain range, there are many high and beautiful mountains formed by volcanic activity.

Mount Paektu is the highest mountain in North Korea. It was formed by repeated volcanic activity. This mountain was produced as trachyte was ejected on top of the basalt lava plateau, and a volcanic lake was created at the mouth of eruption. The plateau is 1,400-2,000 meters above sea level, and is very broad and even. Very old acerose forests grow thickly on the plateau, creating magnificent scenic panoramas. This place has been called the Ch'onp'yong Plateau since ancient times. The volcanic lake is also called Ch'on Lake. Situated at the highest place in North Korea, it is also the deepest lake. The water of Ch'on Lake forms the watershed of the Sungari River, which passes through Talmun and flows into China, dropping into the Changbaek Falls, at a depth of as much as 68 meters.

The Hamgyong Mountain Range and Paengmu Plateau: Paengmu Plateau is a flat area situated between the Hamgyong and Mach'on-nyong Mountain Ranges. This plateau is also abundant in forest resources and has many sites which may be developed into agricultural land. The Hamgyong Mountain Range is the highest and most grand mountain range in North Korea. It includes many steep mountains of over 2,000 meters high. Of these, Kwanmo Peak is the most famous. Although all four sides of the mountain are precipitous, its top is as flat as an airfield. Since this mountain is high, pine forests are thick around its base. At mid-elevation broad-leaved tree forests can be found and the mountain top forms a cold grass land.

The slope of the Hamgyong Mountain Range facing the Eastern Sea is extremely precipitous, but its northwesterly slope is very gentle. Mount Chilbo rises from a south-easterly direction of this mountain range, with the seas behind it. Its peaks and canyons of fantastic and grotesque-looking rocks form a magnificent view.

The valleys of the Tumen River and its tributaries possess abundant water power resources. The Sodusu Power Plant was developed by taking advantage of this valley topography. The western region of Paengmu Plateau not only contains rich forest resources, but also has many areas suitable for development. Presently, Farm Number Five is located there. This plateau also has many useful minerals. Of these, Musan iron is of worldwide importance in terms of the volume of this deposit.

Its eastern region also contains areas suitable for the cultivation of potatoes, hops, and sugar beets.

The Pujon-nyong Mountain Range: This mountain range stretches from Mount Turyu in the Mach'onyong Mountain Range southwesterly to Mount Nangnim. Like the Hamgyong Mountain Range, this mountain range is precipitous on its easterly slope, and its height ranges from about 1,500 to 2,000 meters. This mountain range forms the watershed of the rivers that flow into the Eastern Sea, as well as the Yalu River. It forms an obstacle to transportation into the interior of the Kaema Plateau. As in the case of the Hamgyong Mountain Range, however, it is favorably disposed to water power generation by altering the courses of its flow. This mountain range includes such famous peaks as the Hwangch'o-ryong and the Pujon-nyong.

The Nangnim Mountain Range: This mountain range runs southerly from Chunggang, and Chagang Province and intersects the T'aebaek Mountain Range at Ch'uga-ryong. It is 400 kilometers long, and is the longest range next to the T'aebaek Mountain Range. In the northern part of this mountain range, the westerly slope is steep, the easterly slope gentle, and as many as 20 mountains of over 2,000 meters in height rise in this part. This mountain has been a great obstacle to the communications between the east and the west.

Rail lines reach Koch'a-ryong and Adung-nyong, and automobile roads are open to other peaks.

Kaema Plateau: This plateau is surrounded by the Mach'on-nyong Mountain Range, the Nangnim Mountain Range, and the Pujon-nyong Mountain Range. The area of this plateau is approximately 10,000 square kilometers across, and it is the largest plateau in our country. Its height varies from 700 to 2,000 meters, and it inclines from the south toward the north. It is not flat, as is the Paengmu Plateau, and it includes north-south mountain ranges as well. Such high mountains as Mount Puksubaek and Ch'ail-bong rise from this plateau. To the south of this plateau are located even flatter plateaus as the Ch'angjin Plateau, the Pujon Plateau, and the Hwangsuwon Plateau. Of these, the Pujon Plateau is not only a summer resort, but is also blessed with the dense floriation of various plants and flowers, and presents an extremely beautiful scenic view combined with the clear waters of Lake Pujon.

This plateau is a treasure house of forest resources. Approximately 40 percent of the total forest deposits are located on this plateau.

Thus, approximately 80 percent of the total of North Korean timber products are produced at more than 10 forest production centers on this plateau, including Samjiyon, Poch'on, and Paegam.

It also includes over 50,000 chongbo of grazing land, and farms. The North Koreans are concentrating on the development of this region. This plateau also comprises abundant water power resources.

Chongyu-ryong Mountain Range: This mountain range extends from Mount Sobaek at the center of the Nangnim Mountain Range southwesterly to the Western Sea. Its length is 250 kilometers, and its height is 800 to 1,500 meters. Because it has been subjected to erosion by the Yalu and Chongch'on Rivers, the mountain range has many ins and outs running in a north-southerly direction.

Although this mountain range has represented an obstacle to inland communications, railways and automobile roads run through Kuhyong-nyong, Ohobi-ryong, Onjong-nyong, and others.

Myohyang Mountain Range: This mountain range stretches to the southwest from Mount Nangnim. It is 150 kilometers long, and from 700 to 1,600 meters in height. Mount Myohyang is a famous mountain in this range. The limestone area of the western part of this range has been dissolved and eroded

by rainwater and subterranean water to form many web-like underground caves. Of these, the Tongnyong Stalactite Cave at the western foot of Mount Yongmun and the Great Paengyong Stalactite Cave recently discovered at the eastern foot of the same mountain are well-known.

This cave system is called Mount Kumgang (Diamond). Broad plazas, narrow tunnels, and various forms of stalactite and stalagmite are found in the caves, thus forming magnificent sights.

Ahobi-ryong Mountain Range: This mountain range extends to the southwest from Ahobi-ryong. It is 150 kilometers long, and it is 400 to 1,300 meters high. In the western part of this range are the valleys of the Nam and Yongsong Rivers. Between these two valleys is a broad plateau formed of basalt.

Masik-nyong Mountain Range: This mountain range extends to the southwest from Masik-nyong. Its length is 150 kilometers and its height is 500 to 1,400 meters.

Originally, it was one continuous mountain range, but it has since been split into three sections by the main stream of the Imjin River and its tributaries.

Compared to its altitude, the general area of this mountain range has a low temperature. Therefore, the pattern of its vegetation is similar to the Kapsan district on the Kaema Plateau. The various kinds of its cultivated plants are also similar to those in the Kapsan district.

In the eastern part of this mountain range the Kwangju Mountain Range extends northeasterly and southwesterly, and between these two mountain ranges is the Chuga-ryong trough belt. It is about 180 kilometers long, 3 to 30 kilometers wide, and 400 to 600 meters high. However, the Sambang area, between Sep'o in Kangwon Province to Kosan, alone forms a canyon. This trough belt has been used as a passage between Seoul and Wonsan.

Next, let us take a look at the plains.

The plains in North Korea cover 25 percent of the total land area. Compared to a worldwide percentage of 24.8 percent, it can be said that North Korea is not short of plains. But the scale of the plains is small, and there are few flat plains. The majority of them are alluvial and pene-plains.

Yongch'on Plains: These plains are situated in the lower reaches of the Yalu River, and they are divided into plains formed by the deposit of matter carried by the Yalu River, plains formed by weathering, and the tideland. The total area of these plains is 100 square kilometers, and of this, more than 4,000 chongbo is tideland. In this plain, irrigation work is in progress by using the Yalu River.

Anju Plain: This plain is popularly known as the "Plain of Twelve 3,000 ri," and is situated in the western part of the Chamo Mountain Range on the southern shores of the Chong'ch'on River. It includes Anju and Sinanju as far as the coastline of Taedok County. Its eastern part has wave-like low hills, but the western area is a flat plain formed by alluvial land and tideland.

Its area is 300 square kilometers. The soil layer is thick and it has excellent irrigation facilities, thus forming one of the rice baskets of North Korea.

Pyongyang Pene-plain: This is a pene-plain which centers at Yokp'o, south of Pyongyang, and spreads over the general area of Chunghwa and Kangnam. Its length running north-south is approximately 400 kilometers, its width east-west is approximately 300 kilometers, and its area covers as much as 500 square kilometers. Most of its area is at an altitude of 10 to 20 meters above sea level. Since its elevation above sea level is almost as low as the sea level itself and its area is large, it is one of the foremost low-altitude pene-plains in the world. Its soil is fertile, and is suitable for dry field cultivation.

Chaeryong Plain: This plan is popularly known as the "Plain of Namuri," and consists of the broad alluvial plain formed by the Chaeryong River and the hilly plains along its peripheries. The Ojidon Reservoir has been built here, and irrigation facilities have been reorganized. Thus it is said to have become one of the rice baskets of North Korea.

Yonbaek Plain: This plain spreads through the lower reaches of the Yesong River, and consists of hilly plains, tideland, and alluvial land. Its area is approximately 400 square kilometers. Recently, the irrigation work at Ch'ongdan was completed, alleviating the damage of drought. Rice is being grown in this plain. Mount Songak rises in the eastern part of the plain, and the Pakyon Waterfalls are behind the mountain.

Hamhung Paek-ri Plain: This plain (literally the Hamhung 100-ri plain) spreads through the lower reaches of the Songch'on River. It is the broadest on the east coast, covering an area of 300 square kilometers. They have loudly clammored that since the Liberation, flood control and water conservation have been effectively implemented to prevent the damages caused by floods. Water from the Songch'on and Changjin Rivers, as well as from the Pujon River, has been channeled to this plain to supply plenty of irrigation water. Thus, it has become an important agricultural area.

In addition, there are several small plains here and there along the east coast.

2. Seas

In very ancient times the eastern, western, and southern seas were nearly all connected to the continent. However, about 35 million years ago,

following the movement of faults, these seas were formed by slow or sudden sinking or falling. That is, the East Sea was formed as the land portion fell, and the Yellow Sea and Straits of Korea were formed as the land submerged.

East Sea: This is the largest of our seas, and its area is 1.07 million square kilometers. Its north-south length is 1,700 kilometers, and its east-west breadth is 1,110 kilometers at its broadest point. Where the East Sea suddenly becomes deep, it has little or no continental shelf. In this area it is broadest at Tonghan (eastern Korea) Bay, 5 kilometers from Musudan. Generally, it is about 12-15 kilometers. Its area is 210,000 square kilometers, or only one-sixth of the total sea area. Its average depth is 1,700 meters and is 3,669 meters at the deepest point.

The velocity of the Eastern Korea Sea Current runs as fast as 900 to 1,800 meters per hour. This sea current turns eastward near Ullung Island and joins the main current of the Tsushima Sea Current. The weak branch sea current, which is split near Ullung Island, flows along the northeastern coast. This sea current stretches or contracts according to the season.

The Northern Korean (Liman) Current is a sea current created under the cold and cool climatic conditions between the Maritime Province and Sakhalin in the Soviet Union. This current flows down as far as the east coast along North and South Hamgyong Province, and Kangwon Province. Also, water temperature varies according to the area where the current flows.

In the north it is 25° C in summer, and 1° C in winter. But in the south it is 28-20° C in summer, and over 10° C in winter. In a word, North Korea does not receive the impact of the warm current as much as does South Korea.

The average salinity of the Eastern Sea is 34.1 percent, which is comparatively high. The tidal difference there is the smallest in Korea. It is 0.2 meters at Unggi, 0.2 meters at Wonsan, 0.5 meters at Ulsan, and 1.2 meters at Pusan.

Yellow Sea: The area of the Yellow Sea is 520,000 square kilometers. In terms of undersea topography, the inclination is only one to two degrees, and its water depth is generally shallow. The average water depth is 44 meters, and the deepest is about 106 meters. The whole length along the sea consists of a continental shelf of less than 100 meters. It is characteristic that broad tidelands are developed along the sea coast. While the shallowness of the sea is related to the causes of its formation, it is also partially related to the accumulation of alluvium deposits carried by the Yalu, Ch'ongch'on, Taedong, and Han Rivers, as well as the Yellow and Yangtze Rivers of China. As practical examples, during a one year period, the Yalu River deposits about 214,540,000 tons of soil and sand in the Yellow Sea; the Ch'ongch'on River, 19,960 tons; the Taedong River, 57,400 tons; the Yellow River, 1,380,000,000 tons; and the Yangtze River, 350,000,000 tons.

The Yellow Sea Current flows northward. Its velocity is less than 900 meters per hour, and its force is relatively weak. The continental coastal current is a cold current which joins the waters from the rivers of China and reaches the South China Sea. Because the Yellow Sea is shallow and penetrates deep into the continent, variations in its water temperature are quite marked. In the north it is 25° C in summer and 2-3° in winter, while in the south it is 28-29° C and 7-8°, respectively. The salinity is 33 percent, or the least among the seas of Korea. The impact of river waters on the Yellow Sea is considerable. It is also characteristic that the salinity varies greatly according to season; it is highest in about March and lowest in about September.

3. Climate

In terms of general characteristics, the climate of Korea is situated in a temperate zone between 33-43 degrees north latitude. Thus, Korea has four distinct seasons with moderate temperatures and humidity, and is a pleasant place to live. According to E. Huntington, the lowest temperature for human mental activity should not be lower than 3.3° centigrade; the most pleasant temperature for human mental activity should not be higher than 18.3° centigrade. Furthermore, humidity should be 15-78 percent, and of this, 70 percent or so is the most ideal figure for labor efficiency.

Under the impact of the continent and seas, it is characteristic of Korea to have marked changes in temperature.

Korea has distinct monsoons, and because of this Korea has monsoonal climatic features. During summer a southeasterly wind blows, while during winter the wind blows toward the northwest. Because the southeasterly wind brings high temperature and moist air from the Pacific, Korea has heavy rainfalls and is humid during summer. In contrast, during winter when wind blows from the continent, there is little snow or rainfall. In spring the autumn, winds are comparatively mild, and their direction is variable; the weather is warm, and fine conditions continue.

The climate of Korea is diverse compared to the size of its territory. This is because Korea is situated on a continent, its territory extends in a north-south direction, its topography is complicated, and the nature of the surrounding seas are different from one another. Such climatic characteristics provide conditions extremely favorable to agriculture, forestry, and other endeavors.

Temperature: The annual average temperature of Korea is about 10° C, with the exception of the high mountains, and it is generally high. However, according to place and season, the difference in temperature may be great.

The regional difference in the average summer temperature is small. That is, it is 22° C in the northern mountains and on the northwest coast,

and averages 26° C in the majority of places in remaining areas. This constitutes a favorable condition for the growth of various plants and agricultural crops. However, the difference in temperature in winter (January) is considerable. That is, it is 20° below zero centigrade in the northern mountains, while it is 4° C on Cheju Island. The difference in temperature between the north and the south is great, but that between the east and the west is negligible.

The coldest place in Korea is the Chunggang area. Its average temperature in January is 20.5° below zero centigrade, and its lowest January temperature is 28.6° below zero centigrade. In January, 1933, the temperature dropped to as low as 43.6° below zero centigrade.

Besides temperature, the duration of the frost-free period is among those factors which have an impact on the growth of agricultural crops. In the northern, high, mountainous region frost falls for an eight-month period from 20 September till 20 May in the following year. Frost forms in Pyongyang for a period from 12 October till 22 April in the following year. It forms for only a four-month period, however, on the southern coast.

Winds: The monsoon exerts great influence over the climate of Korea. In winter a continental high pressure develops in northern China and Siberia, and a low pressure develops in the Pacific with a comparatively higher temperature. Thus, the wind blowing from the continent to the Pacific generates a strong northwesterly monsoon while passing through Korea. This is the winter seasonal wind. The winter seasonal wind blows from October till March in the following year, being strongest in December or January. The summer seasonal wind blows from April until August, and is strongest in July.

Precipitation: Rain, snow, frost, hale, and other forms of condensation are included in the precipitation.

The annual average precipitation of Korea is 1,000 mm, and this is above the annual average of the world (940 mm). More than one half of the annual precipitation in Korea is realized during the period from late June to early September. In winter 5 to 10 percent falls, and in spring and autumn, about 20 percent.

The inland areas of Yanggang and North Hamgyong Provinces have the least precipitation in Korea, with an annual precipitation of 500-600 mm. The precipitation in the estuary area of the Taedong River is about 700 mm. The precipitation in the upper and middle reaches of the Tumen River is less than 500 mm, the most minimal in Korea.

Rivers: Compared to the size of its land area, Korea has one of the largest number of rivers in the world. There are as many as 138 rivers with a length of more than 40 kilometers. In terms of Korea's riverine characteristics, first of all, since the mountain ranges which form the watersheds for rivers flowing into the Yellow and Southern Seas lean toward the east

and north, rivers in Korea have large valley areas, and flow slowly. However, those rivers which flow into the Eastern Sea are short in length and flow rapidly. Second, rivers in Korea undergo many changes according to season.

Of these rivers, the Yalu River has a navigational distance of 698 km, with a breadth of about 5 km at its estuary and about 150-160 meters at Chunggang. The total area of the Yalu River basin in 62,638.7 km^2, and it has many tributaries such as the Hoch'on River, the Changjin River, and the Tongno River. The annual precipitation in the basin is 600-1,000 mm; about 26 billion cubic meters of water, or 51.2 percent of the total precipitation, flows into the sea via rivers. The water level of the Yalu River averages 3.51 meters in its lower reaches, and 8.13 at the highest. The tonnage of matter carried by the river for a given year is about 214,540,000 tons, and the total water power resource is 4.2 million kilowatts.

The Ch'ongch'on River has also been called the Sal-su. Because this river flows through a granite-gneiss zone, as the name suggests, it is literally clean, and contains a large volume of water. Its navigational distance is 152 km, and the inclination of its course is comparatively steep. Together with the Taedong River, it forms the major source of water for irrigation in South P'yongan Province. It is reported to supply water to 46,000 chongbo of plains in the 4 counties of Anju, Mindok, P'yongwon, and Sukch'on, centering on the "twelve 3,000-ri Plains."

The Taedong River forms the boundary between South P'yongan Province and South Hwanghae Province and flows into the Yellow Sea. Its navigational distance is 260 km, and it is one of the 5 major rivers of Korea. With a water power resource of 300,000 kilowatts, 10.6 billion tons of water flow annually through this river.

The Tumen River forms the boundaries between Korea, China and the Soviet Union and flows into the Eastern Sea. Its navigational distance is only 85 km, and it flows through forests. Thus, 9.6 billion cubic meters of water flow annually through this river.

Lakes: There are few natural lakes in Korea, and they are characteristically of small scale. The reasons for this are that the movement of the earth's crust was negligible, volcanic activity was small, and there existed no glacial movement either. Representative lakes are Ch'on Lake in Mount Paektu, a volcanic lake, Changyon Lake, a structural lake, and Kwangp'o Lake.

As representative of man-made lakes, Sup'ung Lake, Changjin Lake, Pujon Lake, Yonp'ung Reservoir, First Ch'ongdan Reservoir, and Sohung Reservoir can be mentioned.

[Aug 77, pp 250-255]

[Text] Living Patterns

Agriculture: North Korea's agricultural management system is based on nationalization and public ownership of land. North Korea enforced a "Land Reform" in 1946 to confiscate and redistribute land.

Until 1953, North Korea recognized individual farming, albeit only as a formality. But between 1954 and 1958, North Korea forcefully carried out the collectivization of agriculture. Thus, presently North Korean agriculture has been absorbed into 3,700 cooperative farms and state operated agricultural and livestock farms.

North Korea defines irrigation, electrification, and mechanization as the basic content of the "rural technical revolution," and it is concentrating its efforts mainly on irrigation. In 1975, the total area of agricultural land in North Korea was 2.07 million hectares (compared to 2.24 million hectares in South Korea). Of this, wet paddies accounted for 700,000 hectares (compared to 1.28 million in South Korea), and dry fields represented 1.37 million hectares (compared to 960,000 hectares in South Korea).

In terms of agricultural mechanization, North Korea claimed that, of its eventual goal of 70,000 units of tractors (based on 15 15 horsepower), it had attained 60,000 units as of 1974.

Trends in food grain production are shown in the table below.

Food Grain Production
(Based on Refined Grain;
Unit: 1,000 tons)

Year	Food Grain	Tubers	Total
1960	2,475	851	3,326
1961	2,523	830	3,353
1963	2,625	940	3,565
1972	2,947	1,250	4,197
1973	3,094	1,250	4,344
1974	3,248	1,250	1,498
1975	3,410	1,250	4,650

Note: Refined food grain conversion rate: 75 percent for food grains, and 100 percent for tubers.

The major production centers of rise crops are Hwanghae Province and P'yongan Province.

The per-unit harvest of corn is high, and moreover, its fertilization and cultivation are simple, it has many uses, and it is suited to the climate, therefore large amounts are planted in North Korea. It is raised in all areas, except some parts of Yanggang Province and North Hamgyong Province. It is foremost among dry field crops in terms of planted area and harvest.

It is grown intensively particularly in the inlands of P'yongan Province and North Hwanghae Province, and in the western plateaus of Chagang Province and Kangwon Province.

Barley and wheat are the major crops next only to rice. South Hwanghae Province is their primary production center, followed by North Hwanghae Province and South P'yongan Province.

Beans, which are used in large quantities as industrial raw materials, are cultivated comparatively evenly. South P'yongan Province, however, has the largest cultivated area, followed by North Hwanghae Province and North P'yongan Province.

About 70 percent of the fruit orchards (350,000 changbo) are concentrated in the four provinces of South Hamgyong Province, South P'yongan Province, South Hwanghae Province, and North Hamgyong Province.

Apple-growing occupies the overwhelming weight among pomicultural production. More than half of it is produced in South Hamgyong Province; South P'yongan Province and South Hwanghae Province follow in production.

Pears and peaches are next to apples in importance.

Sericulture flourishes, with mulberry trees planted in idle lands, at the base of mountains and along rivers. The yearly production of cocoon silk is about 20,000 tons. Songch'on, Tok-ch'on, Yongbyon, and Kujang are the main production centers of cocoon silk.

Livestock Industry: The livestock industry is one of the two major components of the rural economy in North Korea.

In mountainous areas such herbivorous animals as cattle, sheep, and rabbits are raised. Large numbers of pigs and poultry are raised in the P'yongyang area. As expected, state-operated and cooperative farms collectively manage the livestock industry.

Cattle are raised mainly in the P'yongan provinces, pigs in North P'yongan Province and South Hwanghae Province, and sheep and goats in Hamgyong, Yanggang, and Kangwon provinces.

Forestry: North Korea, with its large mountainous areas, is concentrating on the afforestation of economic forests such as timber forests, fiber and pulp forests, oil and fat forests, and wild fruit forests with great economic value.

In terms of weight, the foremost are fiber and pulp forests, including such trees as poplars, white poplars, and silver poplars. Pine and walnut trees belong the the category of oil and fat forests, and wild pears, chestnuts, and jujubes belong to the category of wild fruit forests.

Fisheries: Conditions favorable to the development of fisheries may be enumerated as follows: First, many excellent fishing grounds and useful fishing ports are located over a long coastal line of 17,000 kilometers.

Second, as cold and warm currents cross one another, not only do various fish migrate, but this is also favorable to their multiplication.

Third, in terms of climate, it is suitable for fishing as well as the processing of fishery products.

Fourth, as tidelands are developed, many places suitable for the development of fish farming and salt processing are created.

Fifth, there are many rivers and lakes suitable for fresh water fish breeding.

Currently, the quantity of fishery products is estimated to be about 1.2 million tons.

North Korea has organized fish detection teams and is concentrating on the construction of trawl ships, refrigerated carriers, and processing mother ships.

The Eastern Sea is the best fishing ground. In terms of fishery production, the Eastern Sea comprises 80 percent. Of this, pollack is the greatest, with about 50 percent of the total fish catch, and squid, sardine, and sandfish are also caught.

The most important port on the east coast is Sinp'o. It accounts for more than one half of the pollack catch.

Such fish as herring, mackerel pike, yellowtail, and mackerel are caught in deep seas far from the coast.

The Yellow Sea lags behind the Eastern Sea in terms of fish catch, but it is nevertheless important in fish farming. Yellow covina, hair tail, croaker, shrimp, and transparent shrimp are caught in the Yellow Sea. Of these, yellow covina and hair tail are important. Dried laver from Ongjin and oyster from Chongju are also important.

Since conditions are favorable to salt processing, salt pans are developed at Kwangyang Bay, Kwisong, Toktong, Namyang, Yonbaek, and Namsi. Over 400,000 tons of salt is produced.

Mining Industry: North Korea has abundant useful minerals underground. As examples, of underground metallic resources, the following may be mentioned: The total deposit of iron is 130 billion tons, and its main production centers are Musan, Hoeryong, Kanggye, Uiji, Yongch'on, Kaech'on, Songnim, Singye, Pyoksong, and Anak. North Korea particularly maintains that the deposit of the Musan Mine (magnetic iron ore) is more than one billion tons.

Additionally, there are copper mines at Puryong, Kapsan, and Holtong; manganese mines at Ch'ongjin and Puryong; lead mines at Chongju, Songch'on, and Sinp'yong; aluminum mines at Taebo, Sadong, and Kilchu; and gold and silver mines at Sangnong, Holtong, Suan, Taeyudong, and Unsan.

Non-metallic underground resources include phosphorite rock at Kwangch'on and Yongyu; graphite at Pulmok, Chi'ihyon, Tongbang, Chinp'yong, and Opok; and flourspar and heavy spar.

The major underground fuel resources are anthracite and brown coal. North Korea claims that there are eight billion tons of coal deposits.

Of this, 68 percent is anthracite, and 32 percent is brown coal. North Korea plans to mine 23 to 25 million tons annually.

The main production centers of anthracite are in northern South P'yongan Province, southern South P'yongan Province, the Sinchang District, and the comprehensive Kowon coal mine. The major brown coal production centers (more than 80 percent is deposited in Hamgyong Provinces) include the coal mines in northern North Hamgyong Province and southern South Hamgyong Province.

Power Industry: The power resources of North Korea are water power (including tidal power) and coal.

Water power resources form the basic component of electric power resources. Rivers with large water power resources are the Yalu River (4.2 million kilowatts), the Tumen River (1 million kilowatts), and the Taedong River (300,000 kilowatts).

Coal resources which can be utilized as fuel for thermal power generation are deposited in abundance in North Korea.

Among power generating stations, the Sup'ung Power Generating Station is the largest, with a power generating capacity of 700,000 kilowatts, followed by the Pujon River, with 200,000 kilowatts; the Changjin River, with 320,000 kilowatts; the Hoch'on River, with 320,000 kilowatts; and the Puryong Power Generating Station. Recently, North Korea built the Tongno River Unbong-Sodusu Power Generating Station (400,000 kilowatts) and the Poch'on Power Generating Station (1 million kilowatts).

As for thermal power generating stations, it is known that the Pyongyang (400,000 kilowatts), Pukch'ang (400,000 kilowatts), Haeju, Kim Ch'aek, and Ch'ongjin power generation stations, two 12,000 kilowatt capacity power generating station, and five under-5,000 kilowatt power generating stations have been built. The ratio between water power and thermal power is about 68:32.

Industry: North Korea's industrial policy has aimed at overcoming the predominance of the coastal region's influence, the backwardness of remote

areas, and the imbalance between North Korea and South Korea, all of which characterized the period of Japanese imperialist rule. It has advocated first the principle of locating industrial enterprises near raw materials sources and consumption centers in consideration of the transportation and communications conditions; second, the principle of promoting the correct specialization of production and comprehensive production; third, the principle of placing emphasis on the economic development of the hitherto backward and rural areas; and fourth, the principle of deploying industry on according to the principle of "taking into account national defense."

The Coal Industry: Coal is not only the basic fuel of industry and transportation, but is also largely utilized as a primary raw material in the chemical industry. North Korea is abundant in anthracite and brown coal, and in peat as well. North Korea has stated the total coal deposit to be 8 to 10 billion tons. Anthracite is used as home fuel, fuel for boilers in factories, for railways and vessels, and as the raw material for carbide production.

Brown coal is used for industrial as well as for transportation purposes, and for the generation of thermal power. More than 90 percent of the anthracite deposits are concentrated in the west coast areas, while more than 90 percent of brown coal is deposited in the east coast area. For anthracite, the coal mines in the northern and southern part of South P'yongan Province should be noted. For brown coal, coal mines in the northern and southern parts of North Hamgyong Province, and the Kowon Coal Mine are famous.

Metal Industry: The metal industry is divided into two areas: the ferrous metal industry, which produces pig iron, steel, special steel, and rolled steel; and the non-ferrous metal industry, which produces precious metals, heavy metals, light metals, and rare metals.

The coastal region of North Hamgyong Province and the valley of the lower reaches of the Taedong River are mentioned as representative ferrous metal industrial zones. The former includes the Kim Ch'aek Smelting Works (Ch'ongjin City), the Ch'ongjin Steel Works (Ch'ongjin City), the Puryong Metallurgic Plant (Ch'ongjin City), and the Songjin Steel Works (Kim Ch'aek City). This industrial zone has been developed because of such favorable conditions as the existence of a large iron mine such as the Musan Mine, the availability of large quantities of fireproof raw materials, and auxiliary material resources.

The Kim Ch'aek Smelting Works is equipped with two blast furnace units with an annual capacity of 300,000 tons each, two coking furnace units, and an electric furnace with an annual capacity of 400,000 tons.

The latter zone includes the Hwanghae Smelting Works (with two 250,000-ton capacity blast furnace units and two coking furnace units) and the Kangson Smelting Works.

The developed non-ferrous metal industrial area includes the Namp'o Smelting Works, the Munp'yong Smelting Works, and the Hamhung Smelting Works. Copper and lead are produced at the Namp'o Smelting Works, and nickle at the Hungnam Smelting Works.

The Machine Industry: Based on the contention that the machine industry forms the core of heavy industry and provides technical provisions for all sectors of the people's economy, and on Kim Il-song's exhortations, North Korea has developed a "campaign for multiplying machine tools" to develop the machine industry.

Representative of the machine-building industrial zones of North Korea are the lower reaches of the Taedong River, the Sinuiju area, the Huich'on-Tokch'on area, the Ch'ongjin area, the Hamhung area, and the Wonsan area.

Along the lower reaches of the Taedong River (Pyongyang, Kiyang, Taean, and Namp'o) is the best developed machine-building industrial center in North Korea. This area includes the Pyongyang Machine Plant, the Pyongyang Electric Engine Plant, the Korea-Cuba Friendship Pyongyang Textile Machine Plant, and machine plants producing mining machinery, construction machinery, food processing machinery, tractors, and communications equipment.

Sinuiju is the second most important center of the machine-building industry in North Korea. It includes the Pukchung Machine Plant, the Kusong Mining Machine Plant, the Kusong Machine Tool Plant, and the Unsan Tool Plant. A precision-machine plant is located in Huich'on, while there is a motor vehicle plant in Tokch'on.

In the east coast areas, a medium machine production sector is deployed with chemical industry facilities, metallurgic facilities, power generating facilities, transportation equipment, mining machinery and fishery facilities. The Hamhung area is the most representative of these.

The Chemical Industry: North Korea is situated in an advantageous position in terms of chemical industrial development because it has plenty of the raw materials necessary for the development of its chemical industry, such as lime, anthracite, brown coal, phosphorite rock, and iron sulfide, electric power, and industrial water.

At present, North Korea has vinalon plants and such organic compound industrial bases as synthetic fiber, vinyl chloride, various synthetic resines, dyestuffs, and agricultural chemicals.

Its major products are chemical fertilizers (nitrogen fertilizers), agricultural chemicals, carbide, synthetic fibers, dyestuffs, and medical drugs.

Hamhung (amonium sulphate, amonium nitrogen, potassic fertilizer) and Sunch'on (calcium cyanamide) are the centers of chemical fertilizer production. Carbide is produced at Ponyong, Sunch'on, and Ch'ongsu, and medical drugs at Pyongyang, Sunch'on, Hamhung, and Ch'ongjin.

North Korea has plenty of raw materials for manufacturing synthetic fertilizers, such as carbide and coal, and has publicized that it has built such modern factories as the 8 February Vinalon Plant of Hamhung and the Ch'ongjin Chemical Fiber Plant.

The production capacity of man-made and synthetic fibers is estimated to be about 80,000 to 100,000 tons.

The Building Materials Industry: North Korea has established a policy of industrializing construction, and has built national building materials industrial zones, as well as local building materials industrial zones. The fabrication of construction has been broadly carried out.

The building materials industry includes cement, bricks, glass, tiles, slate, and stone materials. Of these, cement represents the largest proportion.

Cement is produced at Madong, Haeju, Sungho, Ch'onnae, and Komusan. Of these, the 8 February Madong Cement Plant is the largest one in North Korea, with an annual capacity of 78 [sic] tons.

The Light Industry: Although this is a sector directly related to the daily lives of the inhabitants, since North Korea concentrates on defense and heavy industry, the basis for a daily necessities industry has not been formed. Accordingly, light industry is not free from backwardness.

The textile industry is the most important of light industries. Within the textile industry, the cotton spinning industry occupies the largest proportion, and it is concentrated in such places as Pyongyang, Kusong, Sinuiju, and Kaesong.

The silk spinning industry is concentrated in Pyongyang, in the basin along the Ch'ongch'on River (Yongbyon, Pakch'on, and Anju), and in Hamhung and Yonghung.

The food industry is closely related to the livestock and fisheries industries. Over 300 factories are responsible for the production of more than 70 percent of the food in North Korea, for more than 90 percent of confectionaries, and almost the total (98 percent) of processed liquor and wine. The centers for the production of edible oil are Sinuiju, Ch'ongjin, and Pyongyang. For the production of bean paste, soy sauce, and bean curd, medium and small scale factories have been built down to the level of each city and county.

Of these, the largest center is Pyongyang (including the Pyongyang Food Grain Production Plant, the Yongsong Meat Processing Plant, and the Yongsong Tobacco Factory), followed by Sinuiju, Hamhung, Namp'o, and Ch'ongjin.

Centers of the pulp and paper manufacturing sector are Kilchu, Sinuiju, Hoeryong, and Hyesan. It is estimated that North Korea produces about 250,000 tons of paper.

Transportation and Trade

Transportation serves as an artery to connect all sectors of the national economy and all parts of the country.

Thus, it maintains connections between sectors of production, and between production and consumption, and it accelerates the development of production.

North Korea has nationalized also all the means of transportation.

Rail transportation is responsible for 95 percent of all transportation. Since the Liberation on 15 August 1945, North Korea has electrified the Sinsongch'on-Kowon section of the Pongyang-Wonsan line, the Pyongyang-Sinuiju section, the Pyongyang-Sinsong-ch'on section, and the Kimch'aek-Myongch'on sector. It has constructed such new rail lines as the Anju coal mine line, the Tokch'on-Changsong line, the Kaech'on-Unsan line, the Tokch'on-Palwon line, the Chiha-ri-P'yongan line, the Honguison-Kowon Coal Mine line, and the Paektu Forest line. As of 1973, the total length of railways was 4,380 kilometers.

Pyongyang has an electric engine plant, and Wonsan has a railway factory. At both places electric engines and various rolling stocks are produced.

Rail freight consists mainly of coal, building materials, timber, food grains, and ores. Currently, the volume transported is estimated to be 75 million tons.

Automobile transportation roads are developed in Pyongyang City, South P'yongan Province, the Kaema Plateau area, the basins along the Yalu and Tumen Rivers, and in other mountainous regions. Only the Pyongyang-Panmunjom section is paved.

In terms of river transportation, the navigable distance is 3,200 kilometers. Freight consists mainly of logs, building materials, and coal. Between Pyongyang and Namp'o, cargo ships as well as regular passenger boats are operated. The Yalu River is navigable up to Sinp'a.

Sea transportation has more significance internationally than domestically.

The coastal lines on the west coast are centered at the port of Namp'o and at the port of Haeju. On the east coast, Najin, Ch'ong-jin, Kimch'aek, Hungnam, and Wonsan are important shipping centers.

North Korea has improved and expanded such important ports as Namp'o, Hungnam, Tanch'on, Ch'ongjin, and Wonsan with modern facilities so as to be able to handle vessels of over 10,000 tons.

Concerning air lines, regular international lines are served by the Pyongyang-Shenyang-Chita-Moscow line and by the Pyongyang-Peking line.

As for foreign trade Article 34 of the North Korean constitution provides that foreign trade is state-regulated.

In 1973, the total trade amounted to about 1.1 billion dollars. Of this, about 500 million dollars represented exports, and the balance was imports.

The trade in 1974 is estimated at about 1.7 billion dollars.

In terms of the structural features of export, raw materials and primary products account for 64.6 percent, manufactured goods 35.4 percent.

Major export items are ferrous and non-ferrous metals, chemical products, and electrical materials. Major import commodities are machinery, equipment, mass consumer goods, and raw foodstuffs.

Trends in Foreign Trade
(Unit: million dollars)

	1970	1971	1972	1973	1974
Total	710.0	829.0	967.9	1,130.1	1,700.0
Export	380.0	386.1	451.7	528.5	550.0
Import	330.0	442.9	516.2	601.1	1,150.0

Source: National Unification Board

Inhabitants

As of 1973, the population of North Korea was estimated to be 15 million.

The structural percentages of the inhabitants are shown in the following table.

Demographic Structure

Total Population (thousands)	Sex Ratio	Increase Percentage	Distribution Urban	Distribution Rural	Population Density	Occupation Farming/Fishing	Occupation Mining	Occupation Other
15,053	100:103	2.4%	33.4%	66.6%	$122/5^2$	40.9%	36.7%	22.4%

Source: National Unification Board: "Comparison of the Capabilities of North Korea and South Korea, 1975."

[Sep 1977, pp 236-241]

[Text] Local Geography

Administrative Districts

For various reasons, North Korea has reorganized previous administrative areas, as follows:

1. In early 1946, North Korea separated part of Yonch'on County, which used to be part of Kyonggi Province, Wonsan City, Munch'on County, and Anbyon County, which used to belong to South Hamgyong Province, to create Kangwon Province. Pyongyang was promoted to the status of special city at provincial level.

2. In 1949, North Korea separated the six counties of Kanggye, Chasong, Huch'ang, Wiwon, Ch'osan, and Huich'on from North P'yongan Province, and part of Changjin County from South Hamgyong Province, to create Chagang Province.

3. In early 1951, North Korea incorporated Ongjin and southern Yonbaek Counties into Hwangha Province, and incorporated Kaesong City and Paep'ung County into the Kaesong District, placing it under the national government.

4. In 1952, North Korea abolished the previous four-stage administrative area system and reorganized it into a three-stage administrative system. Thus the myon were abolished and the size of the county was adjusted, becoming smaller. In its place, several ri were united to expand the size of some ri.

Consequently, the administrative system in North Korea was changed into the province-city-county-ri-laborers' settlement system.

5. In October 1954, North Korea separated several counties in the northern mountainous region from South Hamgyong Province, and Paegam and Huch'ang Counties from North Hamgyong Province, to merge these and create Yanggang Province.

Then, North Korea established North Hwanghae Province in Hwanghae Province by merging several counties in the eastern part bound roughly by the Cheryong River, the Myorak Mountain Range, and the Yesong River, and Kaep'ung and P'anmun Counties in the Keasong District, and created South Hwanghae Province by merging the remaining counties in Hwanghae province, respectively.

Following this, North Korea again incorporated Kaesong City, Paep'ung County, and P'anmun County into a province-level administrative district.

At the same time, North Korea incorporated Nangnim County in South Hamgyong Province into Chagang Province; Taehung County in South P'yongan Province

into South Hamgyong Province; and Usi County into North P'yongan Province. It created Kwangsong County in North P'yongan Province. It divided Ch'angdo County in Kangwon Province to create Kumhwa County. It separated Chongp' yong County and part of Hamju County in South Hamgyong Province to create Hungsan County.

6. In February and September 1959, North Korea transformed and redesignated some administrative areas. It changed the administrative areas of Pyongyang City, Hamhung City, Ch'ongjin City, and the recently established Sinp'o City. At that time, Pyongyang City was composed of 18 districts; Hamhung City, 9 districts; and Ch'ongjin City, 7 districts.

Then, North Korea separated part of Sinp'o County in South Hamgyong Province to create a new Sinp'o City. Part of Sinp'o County was incorporated into Hongwon and Sinch'ang Counties, respectively. North Korea abolished Hungnam City, T'oejo County, and Sinp'o County in South Hamgyong Province, and Nanam City and Puryong County in North Hamgyong Province, respectively.

In an orderly fashion, first Pyongyang City will be discussed in general.

1. Pyongyang City

Pyongyang City is situated in the southwestern part of South P'yongan Province. At the time of the Liberation in August 1945, it was divided into 91 tong and ri, and it had a population of about 400,000. However, its present administrative districts consist of the 18 districts of Chung, Oesong, P'yongch'on Pot'onggang, Moranbong, Sosong, Songyo, Tongdaewon, Taedonggang, Sadong, Taesong, Yongsong, Mongyongdae, Hyongjaesan, Samsok, Sungho, Yokp'o, and Nangnang, as well as the three counties of Kangnam, Chunghwa, and Sangwon, three up, and 299 tong and ri.

Pyongyang is one of the oldest centers of civilization in Korea.

Pyongyang is the center of politics, the economy, culture, and transportation in North Korea. The so-called "Central Committee of the Korean Workers Party," the "Standing Committee of the Supreme People's Assembly of the Democratic People's Republic of Korea," and the Government of the Republic, and other political, administrative, and judicial organs, as well as production factories, the academies of sciences, Kim Il-song University, theaters, and other scientific, cultural and arts organs are concentrated in Pyongyang.

Pyongyang is situated on the broad plains of the west bank of the Taedong River which flows slowly around the foot of Mount Taesong, famous as the holy place of Koguryo, and through several other hills, including Moranbong. It is 230 kilometers by rail from here to Sinuiju, 200 kilometers to Seoul, and 210 kilometers to Wonsan, the port city on the east coast. Pyongyang is conveniently connected to its outer port on the west, Namp'o, not only by rail (55 kilometers), but also by the water channels of the Taedong River. Its area is about 1,000 square kilometers, and it has a population of 1,841,000.

Natural Conditions and Underground Resources of Pyongyang

Topography: The major area of Pyongyang City is composed of the plains formed by sand and soil deposited by the Taedong River and its tributaries, and the remaining hills and semi-plains were formed by erosion, shaving and stripping over a long geological period. Comparatively high hills are situated in the northern and eastern parts of the city. Mount Cheryong (497 meters), Mount Kuksa (446 meters), Mount Yonggol (402 meters), Mount Simsong (371 meters), and Mount Sonja (356 meters) in the Chamo Mountain Range in the northwestern part of the Kangdong Mountain Range are some of the higher hills. In the western part of the city, Mount Hyongje, Mount Yongak, and Mount Taebo are located.

Accordingly, the northern and western parts of the city form comparatively high hills, while the right bank of the Taedong River is composed of low hills.

Around these hills and to the south there are alluvial plains formed by the Taedong River and its tributaries, the Hapchang, Pot'ong, Nam, and Honyang Rivers. To the south, the vast Pyongyang semi-plains are revealed.

The main streets of Pyongyang City are located on Mount Ch'wipuk, Mount Chang, Mount Chuam, Mount Mansu, Mount Haebang, and Mount Ch'anggwang along a section on the right bank of the Taedong River. These hills are called mountains, but actually they are only 20 to 30 meters high. Mount Taesong and Mount Kumsu have been converted into parks.

The alluvial plains around Pyongyang City are about 10 meters above the sea level, and the semi-plains are about 20 meters.

The hills around Pyongyang City are used for livestock raising and pomiculture.

Also the alluvial plains around the Taedong River, Nungna Island, Yanggak Island, Iam Island, Pongnae Island, Turu Island, and Tudan Island are favorably disposed for the development of vegetable cultivation.

Between the low hills are the Samsok, the Nangnang, the Imwon, and the Mirim Plains. These plains are fertile and advantageous for the cultivation of such food grains as rice and corn, various fruit trees, and vegetables.

Rivers: The Taedong River flows through the central part of the city, passes the Chongnyu Cliffs, flows around Mangyongdae, and into the Yellow Sea.

From its right bank, the Taedong River is joined by the Pot'ong and the Hamchang Rivers, and from the left bank, by the Mujin River. At full tide in the city, the Taedong River is about 720 meters wide, and it is 6.9 meters at its deepest point.

The Taedong River, like the Han River in Seoul, is widely used for drinking and industrial water, as well as for river transportation and irrigation.

Climate: From a general view, Pyongyang has a strong, continental climate. The average temperature of the greater Pyongyang area is 9.3° centigrade. Its average August temperature is 24.4° centigrade, and its average January temperature is 8.1° below zero centigrade. The difference in temperature is thus as much as 32.5° centigrade.

Temperature suddenly climbs in April and reaches over 20° centigrade in the June-August period. This is extremely advantageous for multi-stage cultivation of vegetables.

Precipitation corresponds with a rise in temperature. Thus, rain falls most in July and August, and the annual precipitation is 958 millimeters.

Of this amount, more than half is concentrated in July and August. Yet, sometimes droughts prevail during the April-June period.

Underground Resources: Large quantities of underground resources are buried beneath Pyongyang City and its vicinity: Anthracite, as well as, iron, lead, zinc, gold, alum rocks, lime, and various rare-element ores are buried here. Anthracite is found in large quantities at the Sadong and Samsin Coal mines, and it is used as an important power source for the city. In the Taesong District, there are large quantities of anthracite and good-quality alum rocks. In the Sungho District, large quantities of lime are deposited.

The Economy of Pyongyang

Pyongyang is one of the important industrial areas of North Korea. It is an industrial center with a flourishing heavy and light industry. So-called large-scale national industrial plants and enterprises, and as many as 300 local industrial enterprises, are concentrated in the city. Endeavors of major importance to the industry of Pyongyang City are the machine industry, the light industry, and the building materials industry.

Industry

North Korea has publicized that the total industrial output of Pyongyang was increased 9.9 times compared to 1949, and 23 times compared to 1953. This signifies that Pyongyang is the largest industrial area of North Korea, with about one quarter of the total industrial output of North Korea.

Among the heavy industrial sectors, the machine-building industry, the fuel and power industry, the rubber industry, and the building materials industry have made particularly rapid progress. The textile, food, and daily necessities industries flourish within the light industrial sector.

The following favorable conditions account for the development of industry in Pyongyang City:

1. In terms of location, it is situated almost in the center of the west coast provinces, and it has a convenient transportation system.

2. It has access to large supplies of electricity from the Sup'ung, Changjin, and Pujon River power generating stations. It also has its own abundant power sources.

3. Because of the Taedong River, it has convenient water channels as well as plenty of drinking and industrial water.

4. The city itself is the supply center for the labor force, and it also represents a large consumption center of industrial products.

Fuel and Power Industry: Pyongyang City is situated at the center of the southern coal mines of South P'yongan Province. Of these, the Samsin Coal Mine is an important fuel supply source for Pyongyang City. However, this is not sufficient, and Pyongyang City depends on coal supplied from all parts of South P'yongan Province.

As the scale of the city expands and industry grows, the demands of its own fuel requirements increase. Thus, recently a thermal power station with a capacity of about 400,000 kilowatts was constructed.

Machine-Building Industry: Because of favorable geographical conditions many machine plants have been established in the city. Among the important ones are the Pyongyang Electric Plant, the Pyongyang Precision Machine Plant, the Pyongyang Electric Bulb Plant, the Korea-Cuba Friendship Pyongyang Textile Machine Plant, the Pyongyang Electric Engine Plant, and the Pyongyang Construction Machine Plant.

Electric motors, transformers, electric furnaces, welding machines, and switches are produced at the Pyongyang Electric Plant.

Measuring instruments, watches, sewing machines, and bicycles are produced at the Pyongyang Precision Machine Plants.

In addition, Pyongyang Construction Machine Plants are located in Pyongyang City, producing various medium and small cranes, concrete mixers, mortar mixers, winches, and other construction machines and parts, as well as coal mine machine plants and automobile repair factories.

Building Materials Industry: Pyongyang City has plenty of lime, clay, sand, and rocks. Corresponding with the scales of construction, Pyongyang City has factories which turn out cement, bricks, tiles, concrete pipes, and various cement blocks. Pyongyang is the largest center of the building

materials industry. Among those which are important are the Sungho-ri Cement Plant, the Taedong Ceramic Factory, the Kangnam Ceramic Plant, and the Pyongyang Concrete Block Plant.

Textile Industry: Pyongyang City is the largest center of the textile industry in North Korea. Pyongyang Spinning and Weaving Mill, Pyongyang Silk Textile Mill, and Pyongyang Silk Mill are representative.

The Pyongyang Textile Mill is a comprehensive mill which includes all functions from spinning to bleaching and dyeing, and produces cotton yarns, cotton textiles, man-made textiles, various knitted goods, underwear, dyed goods, and vinalon mixed textiles.

The Pyongyang Silk Textile Mill produces silk textiles from silk yarn produced at the Pyongyang Silk Mill and rayon yarn produced at Ch'ongjin Chemical Fiber Mill. Silk, satin brocade, and velvet are also produced.

Food Processing Industry: Together with the non-essential goods industry, the food processing industry is extremely diverse. That is, the major products include flour, confectionery, oil, soy sauce and bean paste, meat, fruits, canned food, processed vegetables, liquor and wine, and tobacco.

As important factories, the Pyongyang Food Grain Plant, the Pyongyang Brewery, the Yongsong Meat Processing Plant, and the Pyongyang Tobacco Factory may be mentioned.

The Pyongyang Food Grain Plant produces extremely diverse food products, including flour, confectionery, and oil, by using corn as the main raw material.

The Pyongyang Brewery produces various types of liquor and wine, supplementary foodstuffs, and beverages.

The Yongsong Meat Processing Plant produces such food products as beef, pork, dressed meat, canned meat, and various canned fruits and vegetables.

The Daily Necessities Industry: To this sector belong the Pyongyang Rubber Factory, the Pyongyang Comprehensive Daily Necessities Factory, the Pyongyang Leather Factory, the Pyongyang Musical Instrument Factory, and the Pyongyang Stationery Factory. The Pyongyang Rubber Factory uses raw and reclaimed rubber to produce various types of footwear, including leather shoes. Additionally, it also produces various types of belts and hoses.

The Pyongyang Comprehensive Daily Necessities Factory is the largest one in Korea, producing various types of stationery, plastic bags, and suit cases.

The Pyongyang Leather Factory produces shoes using the hides of cattle, pigs, and various other livestock animals.

More than 200 kinds of tableware, bowls, and artistic pottery are produced at the Pyongyang Ceramic Factory.

The Pyongyang Musical Instrument Factory produces various types of traditional musical instruments.

Agriculture

It is characteristic that cooperative farms in the city and its environ are intensive and specialized in their management structure.

Together with these circumstances, in order to meet the demands of the citizens for supplementary foods, Pyongyang City has developed such industrial complexes as vegetable "bases," livestock "bases" which supply milk and eggs, pomicultural "bases," and "bases" for the production of food grains and raw materials for local industry.

The kinds of vegetables cultivated in the suburbs of the city are mainly Chinese cabbage, radishes, green onions, garlic, peppers, cucumbers, pumpkins, egg plants, and tomatoes.

The area devoted to the cultivation of vegetables in Pyongyang City is currently approximately 9,000 chongbo.

Characteristics in the distribution of vegetable cultivation are as follows: Large quantities of Chinese cabbage are produced in the Districts of Samsok, Sungho, Taeson, Nangnang, and Mangyongdae. Radishes are raised mainly in the districts of Samsok, Sungho, and Sadong. The main centers for the production of garlic are Samdok and Sungho districts.

The main centers for the production of cucumber are the Taesong, Sadong, and Mangyongdae districts.

Although the livestock industry is of great significance to the supplementary foodstuffs of the inhabitants, as a matter of fact, citizens barely have meat once a year or so.

The production of eggs, milk, and meat is important in terms of the livestock industry. The main production centers are the Pyongyang Farm, the Yokp'o Livestock Farm, the Mirim Livestock Farm, the Samsok Breeding Farm, the Sop'o Agricultural and Livestock Farm, the Hadan Agricultural and Livestock Farm, and the pig farms in the Yongsong and Samsok districts.

In terms of the production of food grains, rice, corn, and wheat are grown.

Among the wild mountains, hills, and slopes, including the foot of Mount Taesong, plums, cherries, strawberries, grapes, peaches, and apples are cultivated. The Sungho and Samsok Districts produce much of these.

Transportation

Pyongyang is an important center of rail, automobile, and air transportation in North Korea, and it is also a river port.

Rail Transportation: With Pyongyang as the center, rail lines connecting various parts of North Korea extend in all directions.

There are also rail lines connecting with Communist China and the Soviet Union.

Such rail lines as the Kyongui line, the P'yongnam line, the P'yongwon line, the Manp'o line, and the P'yongdok line bring into Pyongyang City the various raw materials, building materials, and food necessary for the economic development of Pyongyang. At the same time, machinery and light industrial products are shipped out to various parts of the country from Pyongyang.

Motor Vehicle Transportation: The city bus service is of considerable importance. The lines served are as follows: the Mount Taesong line, the Misan-P'yongbang line, the P'altonggyo-Song-sindong line, the Pyongyang Railway Station-Industrial and Agricultural Exhibition Hall line, the Pyongyang Railway Station-West Pyongyang Railway Station line, the P'altonggyo-Mangyongdae line, the Misan-Samsok line, the Yongjegyo line, the P'yongch'on line, and the Sadong line. Electric trams run between Pyongyang Railway Station and the Industrial and Agricultural Exhibition Hall, and between Pyongyang Railway Station and Mao Tse-tung Plaza.

River Transportation: The river transportation connecting Namp'o, the satellite city of Pyongyang, and Pyongyang is important not only for the economic development of the industrial area of South P'yongan Province, but also for urban transportation. The river transportation between Pyongyang and Songnim and Pyongyang and Chaeryong is to be developed into a regular transportation service.

Tourism Resources

Since Pyongyang is a historical city, it has many famous places and ancient relics; thus there are plenty of tourism resources.

Moranbong is said to be originally the name of the highest peak on Mount Kumsu (presently Moranbong), but it now refers to all of Mount Kumsu. The so-called "Chollima Bronze Statue" is located at Mansudae, at the western foot of Moranbong, and along the continuing hillside. The "Tower of Liberation" rises on the rocks south of the Ch'ongnyu Cliffs. At the northern foot of the mountain is Kim Il-song University, heralded as the highest institution of advanced learning in North Korea. At the entrance of Moranbong is the "National Historical Museum.

The whole of the mountain has been turned into a park. It contains an amphitheater and the Moranbong Stadium with a capacity of 70,000.

Pine trees and other trees grow thickly on the mountain, and it presents an extremely beautiful view contrasting with the Taedong River.

On this mountain are the Naesong and Oesong Castles, historical remains from the Koguryo era, the Ch'ilsong Gate, the Hyonmu Gate, the Pubyok Tower, and the Ulmil Pagoda. It also includes such famous places as the Ch'ongnyu Cliffs and the Kyongsungdae.

The petrified forest in the Chung District is a natural monument. This is a petrified forest of pines and pinus-penthaphylla from the Jurassic period of the Mesozoic era (about 150 million years ago) which have been transformed into silicified wood.

As examples of ancient relics, the following may be cited: the site of the Allak Palace; the site of the Kumgang Temple; the site of the flag pole at the Chunghung Temple; the Sungin Palace; the Sungyong Palace; the Pot'ong Gate; the Ulmil Pagoda; Taedong Gate; Pubyok Tower; Yongwang Arbor; Pyongyang Bell; Osung Arbor; Kija Palace; Ch'ilsong Gate; Hyonmu Gate; Chongum Gate; Old Tomb Group No 1, in the Pyongyang Area; the octagonal stone Buddha vessel at Yongmyon Temple; the hexagonal seven-story stone tower at Nobun Temple; the Old Tomb Groups No 2, in the Pyongyang area, and No 3; the site of Kwangbop Temple; the site of the Taehwa Palace; the site of Mount Taesong Castle; the Ch'ongnyu Arbor; the site of the earthen castle at Nangnang-ri; the site of the earthen castle at Ch'ongam-ri; the castle sites at Nasong, Chungsong, and Pyongyang; and the Tongam Gate.

[Oct 77 pp 216-221]

[Text] 2. South P'yongan Province

Administrative Areas

South P'yongan Province roughly occupies the central part of the western region of Korea, bordering on Chagang Province, North P'yongan Province, South Hamgyong Province, and Kangwon Province.

Its area is about 13,000 square kilometers, or 6 percent of the total area of Korea. It is divided into 1 city and 22 counties. The capital is Pyongyang City. Presently, its administrative areas are Namp'o City and the counties of Taedong, Sunch'on, Unsan, Pukch'ang, Maengsan, Yangdok, Sinyang, Songch'on, Hoech'ang, Kangdong, Yonggang, Onch'on, Chungsan, Kangso, P'yongwon, Sukch'on, Anju, Mundok, Kaech'on, Tokch'on, and Yongwon.

Natural Conditions and Underground Resources

The important characteristic of the natural conditions and underground resources of South P'yongan Province is their diverse components. This provides a condition favorable to the balanced development of all sectors of the economy.

Topography: The terrain of South P'yongan Province is high in the eastern part and gradually becomes lower toward the west. In terms of its topographical characteristics, the province may be divided into three areas: the eastern mountainous area, the area of the central hills, and the western low region. More than 60 percent of the total area is composed of plains or hills of less than 300 meters in elevation.

The eastern mountainous area is covered by the Myohyang Mountain Range, the Nangnim Mountain Range, the Puktaebong Mountain Range, and the Ahobiryong Mountain Range. This mountainous area is composed of comparatively high mountains of more than 1,000 meters and mountains which continue steeply, including Mount Puktaebong (1,327 meters), Mount Sobaek (2,014 meters), Mount Kap'ung, and Mount Myohyang (1,909 meters).

The central hilly area is composed of low hills containing the middle reaches of the Taedong River and the basins of the Piryu and Nam Rivers, and it is surrounded by the Chamo Mountain Range, which branches off from the Myohyang Mountain Range, and others. The hills in this area are low, usually of less than 500 meters, and their slopes are very gentle. Between the hills relatively broad plains and valleys have developed.

Such conditions are favorable to the diverse development of agriculture and also to irrigation facilities.

The western low area includes the area west of the Chamo Mountain Range and the basin located in the lower reaches of the Taedong River. With the exception of isolated mountains here and there, it is topographically characteristic that the major part of the area is composed of alluvial and pene-plains of less than 100 meters in height. Thus, the Anju and Onch'on Plains and the Pyongyang Pene-plain have been developed, and the area is extremely favorably disposed to intensive farming, including pomiculture.

Broad tidelands have been formed along the coast of the Yellow Sea. Such tidelands have been developed as agricultural land and salt pans. Almost all of South P'yongan Province belongs to the basin of the Taedong River. The Taedong River originates from the Nangnim Mountain Range and flows into Kwangyang Bay.

The Taedong River (431.1 kilometers) deeply erodes the eastern mountains in its upper reaches to form ravines. Thus, it possesses rich water power resources. Because the river is broad in its middle and lower reaches, it flows slowly. It contains a large volume of water of significance for irrigation and industry, as well as for water transportation.

The water channels of the P'yongnam irrigation system, the Kiyang irrigation system, and many other irrigation systems make rational use of the waters of the Taedong River.

The tributaries of the Taedong River, such as the Piryu (150.5 kilometers) and Nam (193.2 kilometers) Rivers, are large rivers in themselves with

plenty of water power resources, and they contribute greatly to the supply of irrigation water.

Climate: The climate of this province generally reflects a distinctly continental influence which varies regionally according to topographical conditions.

The annual average temperature of Yangdok is 7.6° C. Against this, it is about 10° C in the coastal region.

While precipitation is 718 mm in the Kwangyang Bay region, it is 1,040 mm in Yangdok, and as much as 1,200 mm in Tokch'on and Yongwon.

Small precipitation in the coastal region contributes to the development of salt pans.

The temperature drops and precipitation increases as we move from west to east.

Another of this province's climatic distinctions is that precipitation is small in the western grain basket region, and rainfall tends to be heavily concentrated seasonally. In other words, it is extremely dry from April to June, the rain being concentrated in July and August. Thus, this region is often subject to droughts and damages from flood. Therefore, it is necessary to maintain irrigation facilities and establish anti-flood measures.

Underground Resources: This province has diverse and large deposits of underground resources.

Important resources include anthracite, brown coal, iron, lead, zinc, gold, copper, graphite, antimony ore, phosphorite rock, and inexhaustible quantities of limestone.

Anthracite is deposited in the coal fields in the northern part of South P'yongan Province, including Kaech'on, Tokch'on, Pukch'ang, and Unsan Counties, and in the coal fields in the southern part of South P'yongan Province, including Kangdong, Sungho, Kangnam, Taedong, and Kangso Counties. This represents 70 to 80 percent of the total anthracite deposit of North Korea.

Large quantities of iron are deposited in Kaech'on County. Lead and zinc are plentifully deposited in the region of Songch'on and Hoech'ang Counties.

Limestone in particular is one of the plentifully deposited resources. It is of extremely important significance as a raw material used in the cement and chemical industries.

Thus, since this province is endowed with ores for fuel and metal ores necessary for the development of various industries, including heavy industry, and ores for the chemical and raw building materials industries, conditions are extremely favorable for a comprehensive development of the economy.

Economy

South P'yongan Province is one of the important industrial-agrarian provinces in North Korea. The province's industry represents about 12 percent of the total industrial output of North Korea, along with Pyongyang City, North Hamgyong Province, and South Hamgyong Province. It is most important in terms of coal excavation.

This province occupies first place in agriculture in terms of cultivated area and production.

Industry: South P'yongan Province has several conditions which are encouraging to the development of industry. First, there are plentiful deposits of coal, iron ore, and other, various, useful ores. Second, the production centers of fuel and raw materials in the province are situated in close proximity. Third, with its developed transportation network, convenient organic production ties with Pyongyang City and other neighboring regions are guaranteed.

Thus, this province contains important heavy industrial sectors, such as the ferrous metal industry, the machine industry, the non-ferrous metal industry, the chemical industry, and other, variegated, industries.

Coal Industry: Anthracite and brown coal are produced in this province, with the former playing an absolutely predominant role. Because the anthracite produced in this province has large amounts of fixed carbon and possesses a high calorific value, it of extremely great economic value.

Coal is not only supplied as fuel to factories in all parts of North Korea, but is also used for carbide production.

Since the coal mines in the northern part of South P'yongan Province are situated at the center of the northwestern industrial region, they supply fuel to the transportation sectors in that region as well as to industries throughout the province.

The coal mines in the Sinch'ang area are recently developed ones, and supply fuel to large-scale thermal power generating stations and neighboring industrial regions.

The comprehensive coal mine in the Sinch'ang area is the largest coal mine in North Korea, and three million tons of coal is excavated there annually.

The coal mines in the southern coal field area of South P'yongan Province supply fuel to industries in Pyongyang City and to those in the southern part of the province, and at the same time, they contribute greatly to the demands of the inhabitants.

The brown coal dug at the Anju Coal Mine is used for railways and in industry.

Metal Industry: This sector occupies an important position in the industry of this province.

The total output of the metal industry accounts for about 50 percent of the total industrial output of the province.

Those conditions favorably disposed to the development of the metal industry in this province are: first, there are plentiful deposits of metal resources in the province and fuel and power supply centers are located nearby; second, it maintains close production ties with the development of the machine industry in the northwestern region, including Pyongyang City.

The important plants are the Kangson Steel Works and the Namp'o Smelting Refinery.

North Korea claims that the Kangson Steel Works produce 10 times the level of steel ingots and 30 times that of steel materials as compared to their respective pre-Liberation levels.

The Namp'o Smelting Refinery is the largest non-ferrous metal production plant, refining such metals as copper and lead from the lead and zinc ores of the northwestern region. Factories are attached to this refinery which produce copper wire, rolling, superphosphate of lime fertilizers (an annual production of 50,000 tons), and sulphuric acid (annual production of 30,000 tons).

Machine Industry: The machine industry represents a sector which has made progress since the Liberation, particularly since the Korean War. The major machine industrial sectors are those involved in the production of transportation equipment, agricultural machinery, electric, and communications equipment.

The Tokch'on Automotive Plant is the largest motor vehicle plant in North Korea. North Korea has propagandized that the plant is capable of producing 7,000 trucks, ambulances, and passenger cars, but there is no way to confirm this.

North Korea has also propagandized that the Kiyang Tractor Plant has the capacity of producing 7,000 tractors.

The Namp'o Communications Equipment Plant is known to produce radios, telesets, switchboards, amplifiers, and other communications equipment and meters.

At the Taean Electric Appliances Plant various types of generators, transformers, and other home electric appliances are produced.

Chemical and Other Industries: Because this province has a convenient power supply in addition to rich anthracite and limestone deposits, the chemical industry has developed.

There is a large-scale glass plant, and also the Kangnam Ceramic Plant (with a capacity to produce two million bricks annually) in Namp'o.

On the basis of heavy industry, the way for the development of light industry has also opened up. Among those of importance are the Yangdok Agar-agar Factory, which produces agar-agar, and the Kuson and Namp'o Salt Plants.

There are fiber mills at Anju, Songch'on, and Yangdok, and food processing factories at Namp'o, Sunch'on, Yangdok, Tokch'on, and Songch'on.

Factories producing daily necessities are located at Namp'o, Kiyang, Suan, P'yongwon, Anju, Tokch'on, Yangdok, Sunch'on, and Sukch'on.

Agriculture

South P'yongan Province possesses favorable circumstances for the development of agriculture.

First, it has more cultivated area than other provinces. The cultivated area in this province is about 350,000 changbo. Of this amount, wet paddies represent 100,000 changbo, and dry fields account for about 250,000 chongbo. This corresponds to 17.7 percent of the cultivated area of North Korea.

Second, it is favorably suited to irrigation. The cultivated area in this province is distributed mainly in the western plains region and in the central hilly region. These areas are flat and have plenty of water. Given such curcumstances, large, medium, and small scale irrigation and water conservation projects such as the P'yongnam, the Kiyang, and the Kangnam irrigation systems have been widely carried out.

Since the basin of the lower reaches of the Taedong River, which includes the Anju plains (Twelve 3,000-ri Plains) and the Onch'on plains, is a broad and flat cultivated area, it is fit for an intensive type of farming.

The relatively broad valleys and mountain valleys in the central hilly region are used for diverse kinds of farming such as food grains, industrial crops, livestock raising, and pomiculture.

And in the eastern mountainous region, the major part of cultivated areas are sloped, and are used for hillside farming.

During the Seven-Year Plan, the reclamation work of tidelands in the Mundok-Sukch'on area, and in the Onch'on-Namp'o area, were carried out.

The planted area of this province accounts for 18.3 percent of the total planted area of North Korea, and it produces 19.8 percent of the total food grain crop.

Food Grain Crops: It is reported that the food grain production of this province is 700,000 tons, or almost twice that of the pre-Liberation period, against its goal of 1.3 million tons.

Of those crops grown, rice is the most important, and this province produces about 25 percent of the total rice crop of North Korea. The main areas of cultivation are Sukch'on, Mundok, P'yongwon, Chungsan, Anju, and Kangso Counties.

Corn is the most important crop, next only to rice, in this province. The province accounts for about 25 percent of the total corn crop of North Korea. The corn crop is distributed mainly in the western low region, the central hills area, and the dry fields of the mountainous area.

The main production centers of beans are Sunch'on, Kaech'on, Unsan, and Kangso. In terms of production, the province is the foremost in North Korea.

Industrial Crops: The major industrial crops are cotton, hemp, tobacco, castor-bean plants, and sunflowers. Cotton is raised in the lower reaches of the Taedong and Ch'ongch'on Rivers, centering in Yonggang, Kangso, Onch'on, Chungsan, Sukch'on, and Mundok Counties. Its output is next only to South Hwanghae Province.

Tobacco has long been raised in large quantities here, together with that raised in South Hwanghae Province. Its main production centers are those places with large amounts of precipitation and good drainage such as Songch'on, Maengsan, Yangdok, Pukch'ang, and Tokch'on Counties. About 25 percent of the total tobacco crop of North Korea is produced here.

Hemp is raised in Yongwon, Yangdok, Maengsan, Sunch'on, Songch'on, Kangdong, and Unsan.

Pomiculture: In terms of pomicultural production, this province is second only to South Hamyong Province, owing to the climate of the province which is suited to the cultivation of fruit trees, and it possesses a broad, hilly, mountainous area.

Apples are the major crop among fruit trees. Apples are raised in several counties, including P'yongwon, Onch'on, Sukch'on, Yonggang, Yongyu, and Namp'o.

Besides these, pears and grapes are also raised.

Livestock Industry: In terms of the number of cattle and pigs, South P'yongan Province has first place. Also, many rabbits, sheep, and goats are raised. The livestock industry in this province is developed on the basis of the production of feed by the double-crop system, natural feed in the mountainous and hilly areas, and agricultural by-products.

Sericulture: Conditions favorable to the development of sericulture in this province also exist. That is, the climate in the hills and mountainous valleys is mild, and conditions are favorable to the development of mulberry tree farms. In terms of silk cocoon production, this province is as important as North P'yongan Province. The main cocoon raising areas are Songch'on, Tokch'on, Kaech'on, Unsan, Pukch'ang, Maengsan, and Yangdok Counties.

Transportation

Because South P'yongan Province is located in the center of the northwestern region, and also Pyongyang City is located within the boundaries of this province, transportation networks are evenly developed.

Transportation networks are developed in all directions with Pyongyang City at the center. Through such transportation networks all parts of the province are connected and there are also connections with other parts of North Korea.

Railway Transportation: Railway transportation forms the basic element of transportation in this province. Representative of the major railway networks are the P'yongnam line, the Kyongui line, the P'yongwon line, and the Manp'o line, which run through the province.

The Kyongui line (Seoul-Sinuiju) [sic] connects Pyongyang City with North P'yongan Province and North and South Hwanghae Provinces. The P'yongwon line (Sop'o-Kowon) runs through this province east-west, and guarantees productive ties with the Hungnam area, the Wonsan area, and the east coast area.

The Manp'o line (Sunch'on-Manp'o) guarantees productive ties with the Kusong-Unsan area and with the Sariwon-Haeju area, and connects the northern and southern parts of the province.

The P'yongnam line (Pyongyang-Namp'o) connects Pyongyang with its outer port, and an important industrial center of the province, Namp'o, and guarantees the productive ties between the industrial regions and plants along that line.

Besides these, there are the P'yongdok line (Taedong River-Changsang), the P'yongan line (Namp'o-Onch'on), the Kaech'on line (Sinuiju-Kaech'on), the Anju Coal Mine line, the Tokp'al line, and the Unsan line (Kaech'on-Unsan).

All these lines guarantee close cooperative production among the major plants, mines, and coal mine areas of the province, as well as with the industrial areas of North P'yongan and Chagang Provinces.

Automobile Transportation: Automobile roads also radiate from the center, Pyongyang, supplementing area without railways.

The major roads run between Yongwon-Taehung, Hamhung, between Maengsan-Yonghung-Hamhung, between Kangdong-Songch'on-Yangdok-Wonsan, between Sangwon-Suan-Singye, between Yangdok-Maengsan-Yongwon-Huich'on, and between Pyongyang-Namp'o.

River Transportation: The Taedong River plays an important role in the river transportation of this province. The Taedong River not only has abundant water, but also its inclination is gradual in the middle and lower reaches to slow its flow. Thus, it is extremely favorably disposed to navigation.

The Taedong River is navigable by boat from its estuary to a point of 260 kilometers, near Pukch'ang.

The Piryu River, a tributary of the Taedong River, is also navigable to Sinsongch'on, 54 kilometers in its upper reaches, and to Samdung on the Nam River, another tributary.

Presently, there is regular navigation on the Taedong River between Pyongyang and Chaeryong, and between Pyongyang and Namp'o.

Marine Transportation: The port of Namp'o, the outer port of Pyongyang and the center of marine transportation in this province, is also located here. The port of Namp'o is located close to industrial regions, and is very favorably situated for land and river transportation connections. Thus, it serves as an important base for coastal and distant sea navigation routes.

[Nov 77 pp 218-223]

[Text] North P'yongan Province is situated in the northwestern part of Korea.

According to the current administrative areas of North Korea, North P'yongan Province is divided into 1 city and 24 counties; these are Sinuiju City, and the counties of Uiju, Ch'ihyon, Yongch'on, Yomju, Ch'olsan, Tongnim, Sonch'on, Kwaksan, Chongju, Unch'on, Pakch'on, Yongbyon, Kujang, Haengsan, T'aech'on, Kusong, Unsan, Tongch'ang, Pyoktong, Ch'angsong, Sakchu, Taegwan, Ch'ongsong, and Ch'onma. Its area is 12,300 square kilometers, and it has a population of 1.94 million (estimated for 1976).

Natural Conditions and Underground Resources

North P'yongan Province has comparatively diverse natural conditions and rather abundant underground resources. The topographical characteristics of North P'yongan Province are its low mountains and valleys, the broad plains along the Yellow Sea, the hilly region in the intermediate areas, a coastal line with many irregularities and many islands, and broad tidelands along the coast.

The eastern part of this province is generally mountainous. These mountains represent extensions of the Kangnam, Chogyuryong, Myohaeng, and P'inandok mountain ranges. Mountains occupy 80 percent of the total area of the province, and their average height is 600-700 meters.

The upper reaches and tributaries of the Taeryong, Ch'angsong, and Samgyo Rivers have heavily eroded these mountains to form deep valleys. Mountainous valleys such as the Kusong and T'aech'on valleys have evolved.

Plains are developed in the western coastal area and in the basin of the Ch'ongch'on River. Among these are several plains, including the Yongch'on, Unjon, and Pakch'on plains. These plains are fertile, and are relatively well irrigated to form a paddy field region.

The topography of the coast is extremely complicated. The total length of the coastal line is as much as 760 kilometers. Along the coast there are many capes and bays, including the Ch'olsan Peninsula, and more than 170 islands, led by Sinmi Island. The complicated coastal topography is accompanied by an extreme tidal difference, and forms large tidelands. The total area of tidelands is as much as 115,000 chongbo. It is reported that of this amount, about 50,000 chongbo may be used for agricultural land or reed fields.

In terms of climate, since it leans toward the north, it is characteristically of a more distinctly continental climate than South P'yongan Province.

The average annual temperature is 8° C, which is about 1° lower than South P'yongan Province. Therefore, the cultivation of cotton crops, which require heat, is limited. Moreover, barley demonstrates a strong resistance to cold, and is cultivated with the spring planting.

Precipitation is 1,000-1,300 mm. It is much greater than in South P'yongan Province. The Ch'ongch'on River basin, together with the Yesong River basin, is one of the places with the heaviest precipitation in Korea. Rainfall is concentrated mostly during July and August, causing inundations. It is dry during the April-June period.

The Yalu River, which represents a basic factor in the river system, forms the northern boundary of the province at approximately the 200th kilometer section from its estuary. The Yalu River not only contains a large volume of water, but also its course is relatively slow. Thus, the navigational distance is as long as 700 kilometers. This river is also significant as

a source of water for industry and irrigation. The Samgyo River, which joints the Yalu River at the level of its lower reaches, represents a basic source of irrigation along the Yalu River, and it has been very significant in the development of agriculture in this province. The Ch'ongch'on River plays as important a role as the Yalu River in the economic development of this province. Two tributaries, the Taeryong and Kuryong Rivers, joint the Ch'ongch'on River. These rivers are significant as sources of irrigation water, and also represent considerable water power resources.

North P'yongan Province has many forest resources, and underground resources as well. The forest area occupies about 70 percent of the total area of the province. In terms of forest composition, about 60 percent of the total forests in this province are latifoliate, and the remaining 40 percent are acerose. It is reported that recently North Korea began developing fiber and pulp forests composed of poplars, white poplars, and aspen, and oil and fat forests of pine nut and Manchu walnut.

In North P'yongan Province, minerals such as gold, silver, copper, zinc, and rare metals are plentifully deposited. A characteristic of the underground resources of this province is that they are deposited at relatively shallow levels due to a long period of erosion and shaving. Gold and silver have important positions among the underground resources of the province. In the granite region, surface sand ore beds of rare metals and sand gold are being developed. The deposits of non-ferrous metals such as copper ore and zinc ore are large as well. Moreover, considerably large volumes of such valuable resources as tungsten, molybdenum, nickle, graphite, peat, and limestone are deposited. Also, good quality anthracite is deposited in the southeastern part of this province. Such resources have great significance for the development of industry.

Economy

Generally, the following conditions may be mentioned as favorable to the economic development of North P'yongan Province.

1. The province has abundant water power resources, underground resources, and the raw materials necessary to the development of light industry. Therefore, the electric power industry, the extractive industry, the chemical industry, led by the chemical fiber industry, and the pulp and paper-making industries can be developed.

2. In terms of geographical location, this province is conveniently located for transportation. Since it borders on China, it holds a distinct advantage for making inroads into the continent.

3. Because of the Yalu River's course, cities in the basin are able to use plenty of water for industry.

It is estimated that by taking advantage of such conditions, North Korea is concentrating on the development of such industrial sectors as the

electric power industry, the machine-building industry, the chemical industry, the fiber industry, the pulp and paper-making industries, the extractive industry, and a diversified agriculture, with an emphasis on food grains.

Industry

Among the important industrial sectors of North P'yongan Province are the fuel and power, chemical, textile, daily necessities, food processing, and fisheries industries.

Fuel-Power Industry: On the lower reaches of the Yalu River is the Sup'ung Power Station, with a capacity of 700,000 kilowatts. The Sup'ung Power Station transmits electricity to the industrial centers in the province and all parts of the northwestern region, with its center at Pyongyang. It is reported that North Korea is building small-scale power stations. Thus, the province has the largest power generating capacity next only to South Hamgyong Province.

Anthracite for fuel is excavated at the Yongdung and Yongmun coal mines. The anthracite from the Yongdung coal mine is supplied mainly as industrial and home fuel in all parts of the province, and some of it is also supplied to Chagang Province.

Additionally, some peat is excavated along the west coast at Chongju, Yongch'on, Sonch'on, and Unjon.

In terms of excavated ores, the respective importance of non-ferrous metal ores and rate element ores is great. There are mines such as the Taeyudong, Unsan, Sinyon, Ch'onma, and Ch'olsan Mines.

In addition, such ores as graphite, tungsten, mica, and kaolin are excavated in North P'yongan Province.

Machine-building Industry: The machine-building industry has been developed since the Liberation. Thus, in terms of output, it occupies the largest position in the province's industrial output. Together with South P'yongan and Chagang Provinces, its influence is considerable.

Large, medium, and small scale machine plants are distributed to all parts of the province. Among these, the Sinuiju, Kusong, and Unsan areas are important centers for the machine-building industry.

The Pukchung Machine Plant and the Nagwon Machine Plant in the Sinuiju area mainly produce construction machinery, power machinery, and mining machinery. Crains, pumps, bulldozers, excavators, hot-bulb engines, and diesel engines are said to be produced also, among other things.

However, all these products are so crudely built that they easily break down.

At the Kusong Mining Machinery Plant, mining carts, winches, drills, test drills, and other mining machinery are produced.

At the Unsan Tool Plant, drills, taps [phonetic], dies, cutters, and other cutting tools are produced.

Besides these, there is a railway factory at Kujang and an electrical machine plant at Sup'ung.

Chemical Industry: The chemical industry is one of the most recently developed industries.

The Ch'ongsu Chemical Plant produces carbide by using the considerable electric power of the Sup'ung Power Station, as well as the limestones produced nearby as raw materials. Together with the Pongung Carbide Plant and the Sunch'on Calcium Cyanamide Plant, it is one of the three largest plants in North Korea.

Mining Industry: There are large deposits of non-ferrous metal ores. Important minerals currently excavated are gold, copper, and lead ores.

The Taeyudong and Unsan Mines are gold mines. It is reported that the copper ore dug at the Takhyon Mine in Uiju County is of good grade and its deposits are large, providing bright prospects.

Besides these, there are the Ch'onma and Mullye Mines for lead, while the Chonch'ang Mine is noted for its tungsten.

Those mines with favorable circumstances have become a rather heavy burden for the inhabitants because they are afflicted with increasing hardships due to forced labor at the mines.

Light Industry: Since North P'yongan Province has conditions which are favorable to the development of light industry, it is reported to have been so developed, together with Pyongyang City, as the most advanced light industrial region in North Korea. The textile industry has considerable influence not only in this province, but also in the total economy. It has assumed this importance as the chemical fiber industry has developed in Sinuiju.

The Sinuiju Chemical Fiber Plant is said to produce 20,000 tons of staple fiber annually by using reeds from the lower reaches of the Yalu River and corn straw as raw materials.

The Kusong Textile Mill annually produces 15 million meters of cotton textile, and is the second largest cotton mill in North Korea. These two plants are said to have more than 1,000 of looms each.

The Yongbyon and Pakch'on Silk Mills use silk cocoons produced nearby as raw materials. Yaksandan [phonetic] silk, mobondan [phonetic] silk, and velvet are produced.

The Sinuiju Woolen Textile Mill is the only woolen textile mill in North Korea.

In addition to these, there are such daily necessities factories as the Sinuiju Enamel Ware Factory, the Sinuiju Rubber Plant, and a cosmetic factory. North Korea propagandizes that at the Sinuiju Enamel Ware Factory more than three million pieces of enamel ware, including tableware, are produced annually.

The Sinuiju Rubber Plant obtains cotton cloth from the Kusong Textile Mill to produce canvas shoes. Vinyl chloride shoes are also made at this plant.

Various vinyl chloride and plastic goods are produced at the Sinuiju Daily Necessities Factory.

Agriculture

North P'yongan Province is the third largest food grain producer in North Korea. At the same time, diverse kinds of farming, such as industrial crops, sericulture, the livestock industry, and pomiculture are carried out there.

The cultivated land area of this province is currently about 280,000 chongbo. In terms of food grain production, it is third most important, with 17.5 percent of the total yield. In sericulture, the livestock industry, and pomiculture, this province is next only to South P'yongan Province.

It is claimed that when the irrigation work of the Yalu River has been completed, 90,000 chongbo will be irrigated. North Korea made big propaganda out of this in 1962, when the province contributed significantly to the "occupation of the five million ton food grain height."

Food Grain Crops: The food grain crops grown in this province are rice, corn, beans, and wheat.

Rice represents about 65 percent of the total harvest of food crops in this province, or 20 percent of the total North Korean harvest. It is cultivated mainly in the western plains region, including Yongch'on, Yomju, Chongju, Unjon, Pakch'on, and Kwaksan Counties.

Corn is the second most important food grain crop in the province, and is intensively grown in the valleys and hilly region, as well as in large quantities in the mountainous regions and plains. Accordingly, the king of dry field food grains in North P'yongan Province is corn.

Beans are cultivated in large quantities as the intercropping of corn. Beans are also cultivated in large quantities in the mountainous regions.

Since the double-crop system was initiated, the cultivated area of wheat has been expanded. The main area of cultivation is the warmer zone south of the Chogyuryong Mountain Range.

Industrial Crops: The major industrial crops of this province are tobacco, cotton, hemp, sesame, castor-beans, and lacquer.

Thanks to favorable climatic conditions, cotton is cultivated in large volume in Chongju, Unjon, Pakch'on, Yongbyon, and Sonch'on Counties.

Hemp has been cultivated mainly in the basin of the Yalu River, including Uiju, P'ihyon, and Ch'angsong. But with increasing demands for fiber materials, cotton is now raised in considerable amounts in the Kuryongsong mountains and in the eastern region of the province.

Sericulture: In terms of climate and geographical conditions, this province is favorably disposed to the development of sericulture. Silk worms have long been raised in large quantities at such places as Yongbyon, Kujang, Haengsan, Unsan, Uiju, P'ihyon, and Ch'angsong.

In addition, in the southern and western parts of the province apples are grown.

Livestock Industry: The livestock industry has an important place in the agriculture of this province. Cattle, pigs, sheep, rabbits, and poultry are raised in all parts of the province.

The province holds first place in North Korea's cattle raising industry, and is next only to South P'yongan Province in pigs and poultry. Cattle are raised in large numbers in the mountainous regions and hilly valleys, and pigs are raised in large numbers in the western plains area.

Transportation

North P'yongan Province is one of the provinces with the best developed transportation system in North Korea. Railway transportation plays the most important role among all forms of transportation in the province.

The major railway lines are the Kyongui, P'yongbuk, Kusong-P'al-won-Kaech'on, and P'alwon-Kujang-Tokch'on lines.

The Kyongui line connects this province economically with other provinces, and maintains connections between various parts of the province, as well as production and consumption ties between Sinuiju and other localities in this province. Moreover, it also serves as an important transportation route connecting the province with China and the Soviet Union. North Korea has transported various machinery products, various ores, coal, various light industrial products, and international trade goods over the Kyongui line.

The P'yongbuk line connects the important industrial centers of this province, such as Kusong, Ch'ongsu, and Sup'ung along the route from Chongju to Ch'ongsu, with the inland parts of this province, and also with the coastal

region. This railway line transports various machinery and chemical products, mineral ores, and agricultural and forestry products.

Also, the Kusong-P'alwon-Kaech'on line and the P'alwon-Kujang-Tokch'on line link the Kusong area with the Kujang, Kaech'on and Tokch'on areas.

Automobile transportation also plays a large role among the province's transportation networks.

The main automobile road connects Sinuiju-Sakchu-Pyoktong. The international border route connects the economic regions along the basin of the Yalu River with the mountainous regions.

In addition, there is the Sinuiju-Kusong route, which connects the inland areas of this province.

There is also a road connecting Sinuiju with Ch'onma and Kusong, which connects the inland areas of the province as well.

Other important roads are the Maengjung-Pukchin road, the Yongmi-Tongch'ang-Pyoktong road, and the T'aech'on-Taeyudong-Charyong-gwan road. These roads all play an important role in freight and passenger transportation.

The lower reaches of the Yalu River, which flows through the international border area, have great significance as a water transportation route.

As far as marine transportation is concerned, coastal transportation is operated only between Sinuiju, Ch'ongsong, Yongamp'o, Tasado, Hwangch'op'yong, Sindo, and Ihwado.

Cities

Sinuiju City: This is an international border city located in the basin of the lower reaches of the Yalu River; it is the provincial seat and the largest industrial center in the province.

Characteristic of Sinuiju's industry is its strong light industry. The textile, paper-making, and daily necessities production sectors have great significance. The city includes educational and cultural institutions, the Sinuiju Chemical Fiber Plant, and other plants. Sinuiju is also a transportation center.

Kusong: This is a city developed in the Kusong Valley, which is generally situated in the center of North P'yongan Province. The machine-building industry and the textile industry flourish here. It is also the most important transportation center in the interior of this province.

Tourist Resources

Mount Myohyang: This mountain rises on the borders of three provinces, that is, from Haengsan County, in North P'yongan Province; from Huich'on

County, in Chagang Province; and from Yongwon County, in South P'yongan Province. Mount Myohyang comprises the main peak, Kollo Peak, 1,909 meters above sea level, as well as other peaks averaging 1,500 meters in height, such as Ch'il-song, Wonmang, Ch'onwang, Sonyu, T'ammil, Pobwang, and Haengno Peaks. These grotesque and steep peaks rise as if elevation were a matter of competition. The most beautiful places in Mount Myohyang are Samwon-dong, Manp'ok-dong, Munsu-dong, Ch'ondae-dong, and Ch'ilsong-dong.

Since Mount Myohyang is a tall mountain, the weather changes severely as one ascends from the foot toward the peak. Accordingly, the vegetation distribution also changes. It contains the largest number of plant varieties among the mountains of Korea. There are about 400 varieties of herbaceous plants and about 200 varieties of arboraceous plants.

T'onggun Arbor: This structure rises at the foot of Mount Samgak in Uiju-up. It is estimated to have already been constructed during the early Koryo period. Originally, it was not large, but in 1478 it was expanded. In 1924, it was again rebuilt. Its grandiose figure stands as before. It is one of the eight major scenic beauties in the northwest.

Yaksandong Heights: These are situated in the west toward Yong-byon-up. Large slabs of rock are laid like heads in these heights, and the lower part forms a conical shape. Here, the view of the blue waters of the Kuryong River, the chirping of wild birds, waterfalls, and the red maple trees are beautiful. But it is the azaleas in spring which present an unsurpassed view. It is one of the eight scenic beauties of the northwest.

Tongnim Waterfalls: This is a grandiose waterfall, 100 meters high, in the southern revines of Mount Chungjo, in Tongnim County. It is also one of the eight scenic beauties in the northwest.

Paengyong Grotto: This is a recently discovered cave. The total length as far as it has been explored is 1,910 meters, and it surpasses the Tongnyong grotto in terms of its scale and interior beauty. It is situated at a place 20 kilometers from Kujang.

Tongnyong Grotto: This grotto is situated at the western foot of Mount Yongmun, on the boundaries between Kujang and Kaech'on Counties. It is called the underground Mt. Diamond and was discovered in 1928. The total length is 1,463 meters. Other scenic beauties and sites of relics will be omitted.

10372
CSO: 4208

END