The Yongnam-Ro: an Historical Geography of a Korean Royal Road. (Volumes I and II).

Young-joon Choe
Louisiana State University and Agricultural & Mechanical College

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THE YONGNAM-RO:
AN HISTORICAL GEOGRAPHY OF A KOREAN ROYAL ROAD

Volume One

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Geography and Anthropology

by

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August 1982

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ABSTRACT

The Yongnam-ro, the main communication artery between Seoul and Pusan, was the shortest and the most important route running through the central part of southern Korea. This road evolved as a military campaign route in ancient times and finally as an administrative communication artery in the Yi Dynasty.

Although spanning some rugged areas in its course, the Yongnam-ro had some advantages: first, it avoided the troublesome communication system connected by river crossings because its path followed longitudinal valleys of the Han and Naktong rivers; second, it connected the waterways of the Han and Naktong; third, it formed the pivot belt between the capital and the Yongnam region, the most productive and populous province in the country; and finally, it played an important strategic role.

The Yongnam-ro passed through about twenty counties and connected seventy others by means of branch roads. Numerous settlements both administrative and roadside developed along the Yongnam-ro. Administrative towns, power bases of local nobles, functioned as the centers of tax collection, culture, and trade. Roadside settlements were classified into two groups: royal settlements including post stations, public ferries, and hostels; and commercial settlements including periodic markets, river ports, and inn complexes.
Royal settlements, mainly post stations, formed consanguine villages because of the entail service. Commercial settlements developed by commoner merchants in the seventeenth century and many of them became leading regional or local service centers in modern Korea.

Although the Yongnam-ro was established solely for administrative purposes, it functioned as the route of trade and cultural diffusion. The impacts of the Yongnam-ro still survive in the roadside landscape and cultural traits of the people. Modern Korean urban network is based on the frame of the Yongnam-ro, even though its location was partially shifted. The Yongnam-ro zone is the most important industrial and commercial axis of Korea. The tradition of agricultural technology and landuse of the Yongnam region are reflected in the modern landscape. Cultural and political ties between the national core and the Yongnam region remain strong.
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The Rulers of the Yi Dynasty
CHAPTER I
INTRODUCTION

The road is one of the great fundamental institutions of mankind. Since man invented the built road, it has played as an important role in the changes in his history and his environment. An emblem of civilization because it represents human intelligence, technology, behavior, and mode of life, the road's varied effects have ramification through every aspect of the state. The road is a basic element, a key, and an enabling mechanism of the cultural landscape. Indeed, it is difficult to minimize the role of the road in cultural history.

Even the rudimentary route has geographical importance because, at any particular time, its location and interrelation with physical and cultural conditions have determined the character of transportation and communication and, in turn, the character of human activities (Brunhes, J.:1952, p. 55; Newton, M.B.:1970, p. 134).

The old roads of Korea have influenced the growth and nurturing of settlements, controlled the development of strategies, given a framework to all economic and cultural developments, and provided channels of trade, communication, and ideas. Succinctly speaking, the roads have moved and controlled much of the history of Korea, and Korea's past geography is stored behind the history of its roads.
The purposes of this study are to discuss the emergence and evolution of the routes and towns along the historic royal highway, the Yongnam-ro, and, subsequently, to analyze the relationship between the location of the road and the various regional economics and cultures. Although this study focuses only on one of Korea's historic routes, the subsequent discussion should provide a sufficient understanding of the general process of network development and its functions to illuminate other roads of Korea and, indeed, those of other lands.

The area chosen for this study stretches from Seoul to Pusan through the central part of the Naktong Basin. It used to be an arterial route which was connected to the capital city, and it reflected the wealth and talent of the nation. Today, except for the metropolitan areas of Taegu and Pusan, however, it is an economically underdeveloped area lacking in manufacturing, steadily declining in agriculture, and generally stagnating in wholesale and retail trade. With a total length of 960 ri (384 Km), it was known as the shortest route between Seoul on the west coast and Pusan on the southeast coast (Shin Kyong-jun:1770, 1-6; Kyongsong Fu: 1936, pp. 1073-78).

This historic royal road has never been known under one specific name. The court named it the Kyongsang-Chungchong Daero (Great Road) or Kyongsang Daero and numbered it the Fourth Royal Road (Kim Jong-ho: 1864, vol. 7; Shin Kyong-jun: 1770, 1-6). Others called it Dongnam-
Dongnae-ro, Southeastern Road to Tongnae (Keijo Fu: 1936, pp. 1008). It will here be called the Yongnam-ro, the road to the Yongnam region, because it has thus been familiar to the common people of that region.

The Yongnam-ro zone consists of the contemporary metropolitan area of Seoul, Kyonggi-do, North Chungch'ong-do, North Kyongs'ang-do, the Taegu metropolitan area, South Kyongs'ang-do, and the Pusan metropolitan area. The Yongnam-ro zone can be divided into two geographical regions: the Han Basin north of the Sobaek Range and the Naktong Basin in the south, known as the Yongnam region. The latter, in particular, has kept a unique historical, cultural, and economic heritage. The term "Yongnam" is broadly utilized by Korean geographers.

This study will concentrate on the eighteenth century, even though the route of Yongnam-ro began to emerge several thousands years ago. It is during the eighteenth century that the Yi government completed the reconstruction of the Korean nation after severe devastation by the invasions of the Japanese and the Manchus. That period, known as the Yong-Chong Era (1724-1800), was characterized by the social and economic reform of the Sirhak-pa, or School of Practical Learning. In those days, many books, records, official documents, and maps providing valuable information were completed, and the Yongnam-ro became the busiest route through the travels of merchants, peddlers, and rural people. The Confucian scholar officials, who had for
philosophical reasons suppressed commercial activities at the periodic markets, began to realize their necessity and allowed them to be resumed.

In order to proceed with this study, some misinterpretations and falsehoods concerning Korea's level of achievement in connection with its roads must be pointed out. First, in widely-cited articles, some of the Western travellers and historians who visited Korea at the turn of the twentieth century minimized Korea's communication network; they suggested that little had happened in Korea to influence the dynamics of an emerging civilization and that it was therefore normal for Korea to lag far behind China and Japan, even though those countries were also backward in terms of modern communications systems (Bishop: 1989, p. 489-91; Chong Ki-su: 1966, p. 22; Ministry of Finance of Imperial Russia: 1905, p. 232). These inaccurate records were cleverly used by the Japanese colonial government in their political propaganda to suggest that Japanese contributions were badly needed for the modernization of Korea. What is worse, even some Korean scholars who committed the same error because they relied on secondary sources only, rather than on primary sources. They wrote that the successive dynasties of Korea neglected the construction and maintenance of roads because the Koreans had preferred to use sea and river routes for transportation. They ignored their own history: "Although the courier system was introduced from China, there were few well-built roads. Until
the introduction of railroad system, the land transporta-
tion system was in primitive condition" (Bae Ki-wan: 1973,
p. 479); "Judging from the inefficient road conditions
during the late Yi Dynasty, the overland routes of the
Three-Kingdoms period [first century B.C. through seventh
century A.D.] must have been primitive" (Kim Song-han:
1966, p. 2); and "Overland transportation was in a primi-
tive condition because of coarse road surfaces, lack of
proper bridges, and stagnating industry" (Choe Wan-gi:
1976, p. 379). These hasty conclusions derived, perhaps,
from unscientific and insincere attitudes. In other words,
these Korean scholars indirectly supported the Western
travellers who happened first to see the Korean roads in
their worst historic conditions. The low opinion of Korean
roads is an artifact of the time of encounter, coming as it
did at the end of a long, but declining Yi Dynasty.

The second reason for the inaccurate appraisal of the
Korean road system lies in the character of Korean
historiography. Although the historians of the Yi Court
treated roads as important in historic affairs, they
recorded very little exact knowledge about them. This
neglect can only be explained through reference to the
social and cultural postures of the Yi Dynasty and the
subsequent, sudden loss of interest in traditional culture
that followed the Japanese occupation policy of cultural
liquidation, working in concert with Western influence.
The policies of the Yi Dynasty embodied the influence of the Confucian bureaucrats. An elite culture dominated the society (Kim Wun-tae: 1968, p. 48). It was natural for the elite historians to be concerned solely the administrative aspects of the organization and operation of the postal system. They had no concern for the people who performed their duties at the postal stations, ferries, and public hostels. Merchants and peddlers also fell outside the concern of the Confucian bureaucrats.

During the Japanese occupation of Korea (1910-1945), the postal system was abolished, the people posted along the royal highway were forced to move, and the institutions were totally destroyed by the Japanese.

Third, the different concepts and customs of Westerners are also responsible for the destruction of road artifacts, after the introduction of Christianity. Although they were symbols in folk religious symbols in a few places, most post icons (made of wood or stone), stone piles, small mounds, roadside shrines, and shade trees originally served as road signs and resting places. Foreign and native Christians, however, considered many of these road artifacts to be idols, and they destroyed or severely altered many historic relics.

Fourth, twentieth century modernization of communication and transportation and urbanization drastically changed the landscape. Korea's old roads were not designed for Western modes of transportation, but the
ideal sites chosen by pre-modern Korean road-builders and the old road pattern were often used as the foundation of the modern road system. The Japanese contribution to Korea's transportation was only a partial improvement, principally the widening and straightening of some roads. The latest and biggest change came with the Korean War (1950 to 1953), industrialization since the 1960's, and with the New Village Movement after 1970.

In recent times, Koreans have faced great social and technical changes in the country. These could not have been accomplished by adhering strictly to traditions that pertained to greatly different conditions. The people have to work out new forms to meet new needs and to use new possibilities, rather than dwell on the achievements of the past. A large number of roadside settlements and remains that survived the Japanese destruction and the Korean War have unfortunately been removed and destroyed. Few of these changes have been documented since the beginning of Japanese dominance.

Despite the vulnerability of the surviving relics and landscape features to being scattered or lost, few people pay attention to document or collect them. The last of the former postmen, ferrymen, footrunners, inn keepers, and peddlers are hard to find, and sometimes they may not be reliable witnesses. The last chance to gather original data is rapidly fading because the old postal system was abolished in 1913 and most of the former civil servants who
served as informants were over seventy-five in 1974 when interviewing began for this study.

A few Japanese historians interested in Korea's old transportation and communication system have made good contributions to this field of study in various ways. Nakamura (1933: pp. 1-59) analyzed the regional background of the Han and Naktong basins and discussed the development of inter-regional transport routes between Seoul and the Yongnam region. Naito (1934: pp. 78-136) studied the origin and development of the postal system of the Koryo Dynasty (918-1392). Their works attracted the attention of Korean scholars, particularly that of historians, since the 1960s.

A group of historians in the Korean Military Academy accomplished a pioneering work in which one chapter deals very thoroughly with communication (Military Academy of Korea: 1968). This work appeared as revised by the authors in "The History of Communication of Korea" (Ministry of Communication: 1970, pp. 1-149). In these works, the historians discussed the development of the governmental communication system from the Three-Kingdoms period to the Yi Dynasty (1392-1910), with a particular emphasis on the organization of administrative networks.

Choe Wan-gi (1976: pp. 391-446) and Yi Dae-hi (1968: pp. 83-102) distinguished themselves in specific topics. Although they consider the inland navigation route as minor in importance, Choe and Yi discussed the development not
only of the tax grain route but of the commercial routes along the Han and Naktong rivers.

Choi Jae-gyong (1975, pp. 35-72) studied the origins, rise and decline of the public hostels during the Yi-dynasty. He made a great contribution to the toponymy of the former hostel settlements.

In spite of the valuable contribution of historians to the study of transportation in Korea, some failings in their approach must be pointed out. First, these historians provide only general information about the communication and transportation systems as tangible artifacts; none of them pays attention to a specific route. In other words, they study the organization and operation of the postal system, the public hostels, and the transportation of tax grain, but they neglect the form and function of the road per se. Judging from their approach, these historians' works are not very different from those of the former historians of the Yi Dynasty, they both rely upon the old documents and classics that were written by the elite historians who neglected the commoners' way of life. Second, these historians' coverage generally stops at the sixteenth century when the system was completely consolidated. Third, most historians are not familiar with the methods and concepts of reconstruction of the past or with fieldwork. Their reconstruction maps of the old postal system were based on the twentieth century administrative map, despite the advisability of reconstructing old
administrative units so as more accurately to portray the historic situation.

The lack of details in the Korean classics and histories, the severely damaged landscape of the old routes, and the scarceness of documentation have discouraged Korean geographers until Kim and Roh led them into this topic. Kim Song-han (1966: pp. 1-8) discussed the rise and fall of the Han-Naktong inland navigation route before and after the introduction of the railroad system. Ro (1969) described the transportation system of fifteenth century Korea. Kim Song-han contributed to the reconstruction of the old river transport of the Han river, and his study is based on early twentieth century documents and on fieldwork.

The new trend in the historical geography of routes, focusing on a specific route, began in the 1970's. Choi Young-joon (1975: pp. 53-82) chose one of the historic royal roads, the Yongnam-ro, and discussed its historical background, network organization, function, the development of roadside settlements and associated landscape changes. His reconstruction of the settlements, road signs, institutions, and relict landscapes, were based on old pictorial maps, modern topographic maps, and fieldwork. However, he only covered half of the Yongnam-ro. The next study of this type was that of Lee in her Master's thesis. Lee Hye-un (1976) compared the function, network pattern, and settlement along the Northwestern Royal Road, the Euju-
ro, with that of the Yongnam-ro. She experienced difficulty in fieldwork because most of her area is located in North Korea, but she overcame it by shrewd use of classical archives and maps.

Chong, an art historian and historic archaeologist, who has devoted his life to the investigation and reconstruction of ancient military roads, should be a model for geographers. He reconstructed the ancient military campaign routes of the Koguryo Kingdom in the northern Korea and the Silla Kingdom in the southeastern Korea in the fifth to seventh century (Chong Yong-ho: 1972: p. 73-87; 1974: pp. 215-23; 1977: p. 19-61). His works are mainly based on his fieldwork, excavation of old settlement sites and abandoned fortifications, folklore study, and the study of epigraphs.

The pattern of contemporary landscape is a product of cultural succession through time. The influence of the past upon the present landscape along the Yongnam-ro can still be traced in many cases. It is reflected in the road alignment, settlement pattern, landuse, and physical features along the road. This study attempts to analyze the past pattern from the present in order to reconstruct the geography of the historic Yongnam-ro.

Kniffen (1951: p. 125) remarked that transportation is one of the best subjects for which historical information is available, but a geographer must be aware of the characteristics of his source materials, their original
purposes, limitations, and contexts (Baker: 1970, p. 14). Archives should be important primary sources (Ernst and Merrens: 1978, p. 288). Artifacts are also primary sources (Gregory, D: 1976, p. 295). In this study, primary data were acquired from both archives and material remains, but the historic records of the Yi Dynasty contain few comments on the existence, road conditions, and the volume of traffic. The historic records of the Yi Dynasty were prepared by the government for purposes of tax collection, administration, and military affairs. Moreover, the earlier the records the less quantitative material that they include. The land registers, trade data, population censuses, and other official records are only found sporadically in the Yongnam-ro zone. Overall only an extremely limited quantification is, thus far, possible. For these reasons, this study rests mainly on selected sample areas where statistical data were available. Most quantitative research focused upon the Annals of King Sejong (early fifteenth century), the Yong-Chong Era (1724-1800), and gazetteers of the late nineteenth century.

Darby (1960: pp. 51-55) listed some of the major sources of historical geography: archaeological investigation, maps, place-name evidence, and historic records. In this study, the sources from archaeological evidence are limited because roads have not yet captured archaeologists' attention in Korea. Ceramic pieces, roof-tiles, coins and other artifacts, which were collected on the grounds of
abandoned settlements, none the less do provide valuable information.

A preliminary examination of old and modern maps was done for the investigation of the alignment of old roads. The comparative study of the old maps, modern topographic maps, and air-photos is a well known method among scholars (Belloc: 1923, pp. 7-12; Hoskins: 1967, pp. 34-40). Fifty of about four hundred local maps of the Kyujang-gak Collection in Seoul National University, covering the Yongnam-ro zone, were used. Those pictorial maps were compared to the modern topographic maps (Figure I), which were published in the 1910's (1:10,000 and 1:50,000) and 1970's (1:25,000 and 1:50,000). Some complete maps of Korea, such as Daedong Yojido, Daehan Yojido, and Choson Haeryuk Jondo, and provincial maps of the nineteenth century were also used.

The reconstruction of road alignments, boundaries of old counties, and the locations of old market sites and post towns was made possible through the examination of maps. An old base-map was prepared to plot the reconstruction of population density, agricultural products, distribution of institutions, and communication networks. Comparative study of maps also gave place-name evidence. The old maps generally bore fossilized toponyms that indicate the locations of old road signs, ferries, rest areas, and other facilities.

The official records and classics are valuable sources
Fig. 1. Comparison of old pictorial map (18th century) and modern map (1910s).
in this study. They are the Annals of the Yi Dynasty, gazetteers of the local counties, gazetteers of the postal districts, land registers of the post stations, genealogies, legal codes, essays, cadastral maps, and other manuscripts. Most of these sources were studied at the Kyujang-gak Collection of Seoul National University.

The itinerary of the fieldwork was chosen according to the preliminary work with maps and archives. A distance of about 400 km. from Seoul to Pusan was investigated from 1974 to 1980: The area between Chungju and Sangju was intensively investigated during several periods of fieldwork from 1974 to 1977 and in July 1980 because relics were well preserved in that area and because the area was the most important gateway between the southern and central regions on the Yongnam-ro.

Local elders, who experienced landscape change since the early twentieth century, were interviewed. The informants helped to collect relict place-names, undocumented information, and old road sites. Cadastral maps, genealogies, and some county gazetteers were acquired during the fieldwork. The morphological approach was followed during the field research. Among the physical features, natural and cultural vegetation communities, old quarry sites, road-cuts, and road surface, were investigated. Abandoned and populated roadside settlements, agricultural fields, road signs, and other historic relics were also examined. Through the different approaches, the back-
ground of road alignment, mode of transportation, route, function, and human impacts on the landscape in the past could be interpreted.

Chapter II, entitled "The Route and Region", deals with an analysis of geographic characteristics of the Yongnam-ro zone, emphasizing the economic and administrative importance.

Chapter III, "The Yongnam-ro Through History", furnishes a discussion of the origin and evolution of the route between the Han Basin and the Yongnam region. The discussion is based on historical and archaeological sources mainly in secondary accounts. Investigation of historic remains provided supplemental evidence.

Chapter IV, entitled "The Yongnam-ro in the Yi Dynasty", provides the process of materialization and the organization of the Yongnam-ro in the Yi Dynasty. The latter part of this chapter is more detailed because of the greater availability of source materials.

Chapter V, "The Road", includes road alignment and the institutionalization of the Yongnam-ro through time. In this chapter, particular concern is concentrated on the road condition and mode of transportation.

Chapter VI, "Roadside Settlement", deals with royal and commercial roadside settlements. Their historic background, development and decline, pattern, and social structure are discussed.

Chapter VII, "The Route and Landscape", is a
discussion of the evolution of roadside landscape and its role in the contemporary landscape. Such road artifacts as old trees, roadside shrines, post icons, abandoned fields and dwelling sites, and eroded road beds are investigated.

Chapter VIII, "Impact of the Yongnam-ro", provides the reconstruction of the function of the Yongnam-ro in the Yi Dynasty. Of particular concern is the role of the old cultural pattern on that of the contemporary Yongnam-ro zone and the development of urban network.

Chapter IX, "The Yongnam-ro as a Geographical Example", summarizes the larger conclusions that can be drawn from an intense study of an East Asian imperial road. Implications are traced for cultural, historical, and political geography in general.
The story of the route began with the story of man. Primitive man wandered on the land to gather wild fruits, hunt animals, and scoop water from streams. Road building started when man intentionally put his physical and mental mark on the land. Through roads, he could exchange his resources with other settlements, but without organized power and technology, such roads could not be permanently built and maintained.

Indeed, "The Road is a social fact" (Jenison: 1949, p. 2). Some animals move through their territories on paths, but they move by instinct, and their paths are never planned. Buffalo trails were used by the pioneers in the American West (Roe: 1929, pp. 299-300). Korean classics also imply similar origins for ancient roads (Sinjung Dongyuk Yoji Sungnam, Vol. 29, Mungyong-hyon, Sanchon [Physiography]). Although we cannot reject the opinion attributing the origin of ancient winding roads to wild animal paths, only man invented roads and his roads had geographic meaning. Road served as economic, political, and military tools and thus modified the physical and cultural landscapes.

Some geographers erroneously attempt to formulate the historico-geographical model of a region, or to generalize
the human landscape by studying only material culture. They explain and interpret man's creative behavior as a result of the material landscape. The human spirit, however, is the key factor in modifying the environment. Succinctly speaking, a historical geographer's conceptual starting point in the study of road geography should be the study of man's spirit as manifest in the cultural history of the pertinent region. Even so, the practical starting point must finally be for geographers the tangible elements in the landscape.

Cultural History and Mobility, East versus West

From the behaviorist's point of view, it is because of its dynamics and well organized mobility that European civilization came to dominate the world since the seventeenth century (Wagner: 1972, pp. 4-6). This remarks is open to discussion: Did the heyday of a dynasty coincide with an effective mobility system? Did the Oriental society surpass the European world in its mobility before the seventeenth century?

Oriental civilization before the seventeenth century was in some respects superior to that of Europe. Despite its well-developed cultural, economic, and political background, however, East Asia did not have a very high-regard for international contact. Both internal and international mobility systems were inferior to those of Europe, which had highly developed, continental, overland
trade and pilgrimage routes. The peoples of China, Korea, and Japan opened their countries to foreign cultures, but they stayed economically isolated. To some, this historic isolation arose from economic factors (Smith: 1913, p. 534):

But the great extent of the Empire of China, the vast multitude of its inhabitants, the variety of climate, and consequently of production in its different provinces, and the easy communication by means of water carriage between the greater part of them, render the home market of that country of so great an extent, as to be alone sufficient to support very great manufactures,....

This explanation, however, accounts for only one facet of the whole. A more complete knowledge of the Oriental philosophy and cosmogony that influenced the development of trade and of the communication system gives a more comprehensive explanation.

The background of the mobility system of East Asian society must be discussed in light of its political philosophy, economic structure, and culture. Examination of the two mainstreams of Chinese philosophy, Confucianism and Taoism, will improve understanding of the political thought of the society that influenced unique landscape. For Confucians, wisdom and virtue lay in knowing man. For Taoists, by contrast, knowing nature and following its laws was more important (Pak Hyo-bom: 1974, p. 62). The Chinese devised a single system of environmental orientation based on their two philosophies in which man's various functions are reflected in particular environmental
and spatial characteristics. In this system, man's functions can be put in two categories: the Confucian social man and Taoist natural man. This dual conception of man affected the traditions of political thought and science.

Confucianists were concerned mostly about people. Mencius, a pupil of Confucius, stated "The people are the most important element in the state.... The prince is the last" (de Bary: 1967, p. 171). Under Confucian leaders, spiritual and intellectual democracy tended to transcend classes. Confucian rulers in East Asia did not abuse their power by tyrannizing their subjects. They governed with great, paternalistic gentleness, as long as they had the complete submission of their subjects.

In a sense, Taoist naturalism reveals the Chinese mind more truly than Confucianism (Pak Hyo-bom: 1974, p. 62). Lao Tzu, the father of Taoism, suggests in the Tao Teh Ching the importance of road development (de Bary: 1960, p. 53):

Therefore, Tao is great, Heaven is great,
Earth is great
And the king is also great
There are the Great Four in the universe
And the king is one of them.
Man follows the ways of the earth,
Earth follows the ways of Heaven;
Heaven follows the way of Tao,
Tao follows its own way

Lao Tzu's statement has a similar meaning to that of a Korean proverb: "The people's voice is the voice of God". It means that the king must hear the people's voice and
understand the people's mind. It is the way of Taö. If the king followed the way of Tao, his ideas and mind also were carried to the people (Lao Tzu, Tao Teh Ching [Trans. by Wu, J. C. H.]).

As political philosophies, Taoism and Confucianism greatly influenced the development of the royal highway system of Korea. Korean kings applied Confucianism in governing the people and Taoism in the understanding of the people and country. The filial relationship between the Confucian ruler and the commoners was the basic political doctrine. As a patriarch of the monarchy, the king had the authority.

Postal roads conveyed royal order to the commoners through the Confucian officials. Direct communication between the king and the commoners was almost impossible unless the king followed the sage's way of life. The egalitarian philosophy of Taoism could not appeal to the political leaders in Korea, but its natural philosophy affected the development of geomancy, geography, and hydrology. In road building, Taoism probably influenced the location and cosmetics of roads. Generally Confucianism emphasized the form and symbol of the authority. The roads and government buildings emphasized the form and symbol of the authority. The roads and government buildings showd the dignity of the authority. The role of Taoism was to restrain Confucian authorities from extreme formalism that could bring about hardship for
the commoners. The Taoist concept, anyone might see, was reflected in the road design and the roadside landscape.

The mentalities of the East and West have been contrasted as "Place-bound" and Time-bound" (Needham: 1960, p. 46; Pak: 1960, p. 40). The philosophical background of the place-bound Eastern society was closely related to the Confucian morality that emphasized ancestor veneration, filial duty, and perfect virtue. Korean geomancy, a modified form of Taoism, also influenced on the place-bound tradition.

Ancestor veneration was embodied by the special honor paid to the birthplace of clan and family history. In most cases, the birthplaces of clans formed major kinship villages that kept the graveyards, family shrines, genealogy, and ancestral treasures under the control of the head families. In social, economic, and cultural aspects, the village in place-bound society often retained independent and isolated characteristics.

The traditions of mutual dependence and reverence of the seniors were the essence of social life. The village councils, constituted of the elders, decided such important village affairs as agricultural activity, marriages, funerals, and clan ceremonies. The head of each family had patriarchal authority, but he also had responsibility for the proper upbringing of children and the care of the parents. Most villages in an effort at self-sufficiency cultivated almost all crops, such as food grains,
vegetables, and fibers and bred livestocks. Education in Confucian learning was highly regarded for the preparation for the civil service examination. Every village established its own school somewhat like the one room school of the United States of America.

Transportation may be classified into economic and noneconomic categories (Bamford and Robinson: 1978, p. 84). Economic transportation has the purpose of moving goods or people for profit, while noneconomic transportation includes cultural activity, recreational travel, pilgrimates, and administrative communication. Economic transportation could not develop well in the subsistence economy of place-bound society.

Korean Roads, an Example of the East Asian Model

The Korean royal road system was maintained for the purposes of communication between the court and the commoners and the transport of tax grain and tribute. New ideas, regulations, orders and other cultural matters diffused from the capital through the local county seats and the wealth moved into the royal capital. Under good government, prosperity was not reflected in the palace and public buildings, which remained simple in form, but in the bustling activity along the highway linking the court and local government seats. Wise and learned kings and their agents felt that the roads did not need to be luxurious, but they made sure that these roads were well operated and
maintained. During times of poor administration, the roads and roadside institutions were neglected.

The Korean word *gil* (길), which is equivalent to *Tao* (道) in Chinese, has such varied meanings as "road, route, journey, way, distance, direction, circuit, reason, morality, province, and region". *Tao* is a compound word consisting of two words: "to go" (走) or "to run" (走) and "head" or "leader" (首).

The term *do* (도), the Korean pronunciation of *Tao*, is at present used for both "road" and "province". It probably began to be used to designate a political unit in the ancient Koguryo monarchy (37 B.C.-668 A.D.) whose local governor was called the *Do-sa*, "provincial governor" (Im: 1979, p. 45), but this term became generally applied during the Koryo Dynasty (915-1392) which consisted of seven provinces.

In terms of communication, *do* came to designate a road which was used mainly for administrative purposes, more specifically, a postal district including up to a dozen or more stations, used by government officials to commute between their posts and the court. Another word, *ro* (로), adopted from Chinese, was also widely used for the main royal roads like the Yongnam-daero, So-ro (the Western Road), Puk-ro (the Northern Road), and so on. However, the real Korean term *gil* became generally adopted everywhere, e.g., *han-gil* (한 길) meaning great (wide) road, *Sae-gil* meaning byroad, *San-gil* or *gogaet-gil* meaning mountain
path, and jirum-gil meaning short-cut.

In the Western world, the most ancient and genetic term of road is derived from the Sanskrit, vah, which indicates the idea of movement, as in the Sanskrit vahana, or the Latin vehiculum ("vehicle"). Road derives from rad, meaning "journey on horseback" and path from pad meaning "foot-trodden track" (Oxford English Dictionary: 1961, vols. 7, 8, and 12). There is little evidence of the relationship between the terms of road and movement or vehicles. Words meaning "vehicle", such as sure (wagon), dalgwji (cart), kuruma (wheeled vehicle), palgu (slide car), and ssol-mae (sled) did not influence the term "road".

Why and how does the Korean concept of the road form a marked contrast to that of Westerners? It probably originates in cosmological differences. In the place-bound tradition, the road was thought of as a communication tool from the ruler to the people. The communication system partook of the dynasty's vertical structure. In the time-bound Western society, the tradition of great mobility may have originated from the wanderings of the pre-Germanic migrations. Roads played an important role of communication routes between rulers, and among people. The interregional communication network of Western society increased more dynamically than the hierarchial structure extent in East Asia.
The Region and the Route

Cultural geographers are said to be concerned about the knowledge of place (James: 1952, p. 203). One cannot discover the background of the Yongnam-ro without a previous study of the regional characteristics of the Yongnam-ro zone because these regional differences influenced the circulation system of that region.

In the historical study of transport geography, the morphological approach must be taken in order to formulate a general theory. A general theory includes hypotheses establishing meaningful explanatory links among related phenomena. A morphological study of the geography of historic routes should consist in studying morphological phenomena (forms) in the physical, historical, political, and economic contexts.

The Physical Setting of the Yongman-ro

The mountainous spine of Korea lies close to the east coast, overlooking the East Sea (Sea of Japan). This Taebaek Range, beginning at the southeast corner of the Peninsula, just north of Pusan, rises toward the north. The Taebaek Range widens in western North Korea and joins broadly with the Kaema Massif in the south Paektu Mountain. Although it is pierced by a few passes, the Taebaek Range nearly isolated the coast of the East Sea. By contrast, much of the west coast, which faces the Yellow Sea, is accessible by broad, open valleys. The principal such
Riverine lowland the core of the Korean Peninsula is the basin of the Han River. The main course of the Han River arises on the westward slopes of the Taebaek Range and flows, first, southwestwardly to flow directly toward Seoul, the metropolis of the Han Basin, and to issue into the Yellow Sea near Kanghwa Island. A second main branch of the Han system arises also the westward flanks of the Taebaek, but far to the north, within the present North Korea. Thence, the river flows southward to join the Han about 50 kilometers east of Seoul. With these two principal streams, the Han Basin forms the core of southern Korea, matched in a sense by the basin of the Taedong River that is commanded by Pyongyang in the northern Korea.

Indeed, each of the great cities of Korea occupies a basin, for the Korean Peninsula is basically a mountainous appendage that extends southward from mainland Asia. The various basins are formed by spur-ranges that branch off the Taebaek Range. South of the upper Han basin lies the basin of the Naktong River. The two are separated by the Sobaek Range. The Naktong River runs generally due south, past Taegu, and on to its delta near Pusan.

The landforms of Korea are often compared to the skeleton of a gigantic animal lying on its right side. Its ribs are the mountain ranges, that run down from the Taebaek Range to the west coast and have been barriers to communication. The three barrier ranges on the Yongnam-ro--Kwangju, Charyong, and Sobaek--between Seoul and Sangju
provided only minor problems, however, for the development of that road. The Kwangju and Charyong mountain ranges are considerably dissected by the Han River so that the succession of ranges are cut by the tributaries of the Han River (Figure 2).

The mountains consist mainly of broad masses of pre-Cambrian granite and gneiss, forming rounded hills, and the valleys in the mountains are wide and flat. The Sobaek Range, however, consists of a couple of dozens high mountains ranging to heights greater than 1,000 meters. The Sobaek Range is the surface expression of the Okchon Geosyncline worked in Paleozoic limestone. The Naktong Basin is carved into Mesozoic sedimentary rocks and intrusive granite. The landforms of Naktong Basin are generally smoother than those of the upper Han Basin, except for the slopes of the Sobaek Range; floodplains, valley plains, and deltaic plains are well developed on the Naktong River.

The Sobaek Range, the most serious obstacle in the Yongnam-ro zone, forms the watershed between the southern region and the central region of Korea. Numerous valleys, which are dissected by the tributaries of the Han River and the Naktong River, are developed on both sides of the Sabaek Range. The valley of the upper Han River is wider and smoother than the upper reaches of the Naktong River. Several rapids, such as the Yongchu (Dragon Pond) and the Kwangap-chon, occur in the deep meandering gorges of the
Fig. 2. The Landforms of Korea.
upper Naktong River. The valleys and some of the lower passes provided favorable conditions for the development of premodern routes. Wheeled vehicles found few barriers, except on the Saejae Pass between Chungju and Sangju and on the Jakchon bypass in the Naktong Delta. These areas, however, were not serious impediments for the passage of pack-animals and pedestrians.

Man usually looks for a convenient notch in a line of hills to save himself the effort of higher climbing. This began with foot travel and continued right on throughout the history of roads. Korean road builders chose the saddles and low passes in the ranges and tried to direct the roads through these notches. The better known passes from Seoul to Pusan are Tarinae (150 meters) in the Kwangju Range, Jwajong (110 meters) and Im-o (250 meters) in the Charyong Range, Saejae (632 meters), and Kwankap-chon (295 meters) in the Sobaek Range, and Soya (150 meters), Paljorjong (360 meters), Songhyon (290 meters), and Jakchon (120 meters) in the southern Yongnam region.

The Yongnam-ro, therefore, could be channeled easily through the Han and Naktong valleys and the natural saddles between them. The Sobaek Range, the major obstacle on the Yongnam-ro, has an average altitude of about 1,000 meters, but several natural saddles have been well known since ancient times. They are, from the east, the Byoltoe (1,000 meters), Juk-ryong (689 meters), Gyerip (630 meters), Saejae (632 meters), Yiwharyong (548 meters), Chupung-ryong
(200 meters), and a few others. Among them, the Juk-ryông and Sajae were developed as major mountain passes between the capital city and the Yongnam region during the Yi Dynasty. In ancient times, the main highways between the two regions ran through the Juk-ryông and Gyerip, but Sajae was chosen over the Gyerip during the Yi Dynasty, and finally the Chupung-ryông and Yiwha-ryông became the busiest passes in modern times. The passes of Sajae and Gyerip are almost abandoned. The elevation of the Sajae Pass is about 400 meters lower than that of the surrounding mountains of the Sobaek Range and 400 meters higher than Mungyong, a town located about three kilometers away.

Climate can have a profound effect not only on traffic, but also on the form of lines of communication. Throughout Korean history, the Sobaek Range has been an important topographic obstacle; its climate has also affected interregional communication between the Han and Naktong basins, although the range is not very high. During the winter, the northern slopes of the Sobaek Range, covered with snow and ice, contrast markedly with the sunny southern slopes that overlook the Naktong Basin. The major waterways of the Han River and its tributaries were also closed by ice from December through February, but the Naktong River was free from ice.

In the Naktong Basin, large areas were occasionally deprived of road transportation during the summer monsoon season. In many sections, the roadbeds followed the dikes
of the reclaimed lands. The influence of seasonal rainfall patterns on the regimes of rivers and consequently on the transport using them was very early realized.

In road planning, the potential exposure to extreme weather conditions can influence the selection of a route. In the cases of such portions of the Yongnam-ro as the Chungju Basin, Kwangap-chon, Haepyong, and Yangsan, flooding had to be taken into consideration before an alignment could be fixed. Generally speaking, however, the Yongnam-ro was a wisely selected roadway because there were only two wide ferry crossings, three minor ferries, several bridges, and stepping stones. Swamp lands in the Yangjae-chon near Seoul, Dal-chon near Chungju, and Yangsan-chon near the Naktong Delta, have been reclaimed since the Yi Dynasty (Taejong Silok, Vol. 19, 10:2, Jongchuk). The Yongnam-ro was constructed on the dry soils of natural levee, alluvial terraces, and mountain slopes.

The most important factor fixing the main transmontane route along the Yongnam-ro was the relatively easy access to the Han and Naktong rivers which were until the early twentieth century navigable for river junks as far as Chuncju on the Han River and Sangju on the Naktong River. These rivers provides alternate quick routes southward and northward through the Sobaek Range and the shortest distance between the main river ports of Kahung on the Han and Naktong-ri on the Naktong.

During the last thousand years, the principal route
has, with a few minor changes, been virtually the same. The Saejae Pass was crucial because it provided the most direct connection with the route between Sangju and Pusan, the easiest route into the Yongnam region from the Chungju Basin. By going as far north as possible on the comparatively level route through the Sobaek Range, travellers avoided the devious and rugged course up to the Naktong River.

The Historical Setting of the Yongnam-ro

In the political and historical contexts, strategic considerations underlay the establishment of the Yongnam-ro. Control of the Han Basin offered the possibility of controlling the whole Korean Peninsula. The region between the Han Basin and the Sobaek Range became the strategic point of each kingdom on the northern or southern side since ancient times. The region was a political buffer zone among the three kingdoms of Koguryo, Paekje, and Silla. It was originally part of the Paekje territory, but Koguryo pushed Paekje out of that region and finally Silla overtook it. During the military campaigns between Koguryo and Silla from the fourth to the seventh century, military engineers improved the road on both sides of the Sobaek Range. After the unification of the Peninsula, the Silla Court appointed royal family members as governors of the new territories, and imperial communication between the capital city of Kyong-ju and the provinces was greatly
Koryo, the successor kingdom to Silla, organized a new royal communication network focusing on the capital city of Songdo (now Kaesong, 50 kilometer north of Seoul). During the early periods of Koryo, the Yongnam highway was completed between Songdo and Tong Kyong (now Kyongju), the former capital. Strategically, the Yongnam-ro was a deterrent to the rebellion against the Koryo Court by the people in the core of former Silla; it was also a rear base against invasions from the north.

During the late periods of Koryo, the kingdom suffered from the plundering of the Red Turbans (Mongols) from the North and from the raids of the Japanese pirates from the South. While the Koryo troops carried a punitive expedition against the Red Turbans, Japanese pirates began to raid the southern and western coasts. The Japanese pirates first captured ships loaded with tax grain, and then attacked cities on the coastal plain. They severely impeded the transport of the tax grain by ship.

General Yi Song-gye, who commanded the punitive expedition against the Japanese pirates and later became the founder of the Yi Dynasty, felt that the major national communication artery should be located in a safe zone away from coastal plains. The sheltered Yongnam route, which had been an important route for military movement and transport of tax grain, became the major artery of the Yi Dynasty as of the late fourteenth century.
Circulation is a result of areal differentiation. The geographic contrast between the Han and Naktong basins was great during the Yi Dynasty, even though the Korean Peninsula is small. Although conditions are similar in both regions in the summer monsoon season, winter conditions are quite different. In the Han Basin, mean temperatures in January range from \(-8^\circ C\) to \(-4^\circ C\), while in the Naktong Basin they range from \(-3^\circ C\) to \(3^\circ C\). The more favorable climate of the Naktong Basin had allowed the development of an advanced agromanagerial society, even before the time of Christ. Native and exotic crops were grown in Yongnam region, which was a site of the origins of Korean rice culture. Tea, bamboo, and citrus were limited to the south coast, from Cholla-do to Kyongsang-do. Although pears and persimmons were produced in the Han Basin, the Yongnam region dominated their production. Other exotic crops, such as cotton, sweet potatoes, hot peppers, and tobacco, were introduced to the Yongnam region and diffused to other regions. As a result, the Naktong Basin became the richest and most populous among the eight provinces.

The natural regions of the world must be considered in relation to the productive area from which supplies for men and materials are obtained (Cornish: 1923, vii). The Yongnam region with its advantages forms a unique geographic region. Most of the Yongnam region belongs to the Naktong Basin surrounded with the Taebaek Range in the east.
and the Sobaek Range in the north and west.

The Naktong Basin by the Silla Dynasty had developed into the hydraulic center of Korea. The interior Yongnam region is one of the dry regions of Korea. Its annual rainfall is about 800 to 1000 mm., and that of monsoon season from June to August is about 440 to 550 mm, which is equivalent to about two-thirds of the rainfall of other regions. The interior Yongnam region suffers the most from droughts in Korea. In the Yongnam region, rice culture could not have developed without proper irrigation. Many irrigation ponds (po) were built in the small valley areas. Although the origin of such large reservoirs as Susan-je in Miryang, Konggom-je in Sangju, and Daeji-je in Uisong is not clear, they were built in ancient times (Yi Pyeong-do: 1977, p. 304-05). The people of the Yongnam region helped unify the Korean Peninsula under the same history, language, law, culture, and customs in the seventh century. The Naktong Basin, "the granary of Korea", has been important in the history of Korea for more than a thousand years. It nurtured the people during the Koryo and Yi Dynasties, and it proved to be the salvation of Korea during the Korean War between 1953 to 1957.

Through the 500 year history of the Yi Dynasty, the Yongnam-ro zone supported nearly a third of the Korean population with its agricultural wealth and other products. It had 31.1 percent of the population of Korea during the reign of King Sejong (1418-1450), and 29.4 percent in the
late eighteenth century (Table 1). In the eighteenth century, the Yongnam-ro zone was connected with the densest populated metropolitan area of Seoul and the second most densely populated population of the Naktong Valley (Figure 3).

Table 1.
Cultivated Lands and Population of the Yongnam-ro Zone.

<table>
<thead>
<tr>
<th>Regions</th>
<th>Cultivated Lands (kyol)</th>
<th>Population (persons)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fifteenth Century 1789</td>
<td>Fifteenth Century 1789</td>
</tr>
<tr>
<td>Number of Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kyonggi-do (12)</td>
<td>41,970</td>
<td>32,460</td>
</tr>
<tr>
<td>Chungchong-do (7)</td>
<td>28,730</td>
<td>37,480</td>
</tr>
<tr>
<td>Kyonsang-do (62)</td>
<td>301,150</td>
<td>288,000</td>
</tr>
<tr>
<td>The Yongnam-ro Zone (81)</td>
<td>371,850</td>
<td>357,940</td>
</tr>
<tr>
<td>Whole Country</td>
<td>1,626,660</td>
<td>1,411,950</td>
</tr>
</tbody>
</table>

*The census in the fifteenth century counted only males from 16 to 60 years old.

Sources

4. *Sejong Silok Chiriji*.

At least five of the larger cities and towns—Seoul, Chungju, Sangju, Taegu, and Miryang—among the ten largest cities in Korea, developed along the Yongnam-ro. Other large towns such as Kwangju, Suwon, Wonju, Yoji, Sonsan,
Fig. 3. Korea, distribution of population, 1790s.
Songju, Kyongju, Chinju, Changwon, Kimhae, Pusan, and Ulsan also belonged to the Yongnam-ro zone.

It is also probable that in its natural resources the Kyongsang-do led all other provinces. In the late nineteenth century, the province had seventy-one counties (each one having a magistrate), 421,500 households, and about 310,440 men from sixteen to 60 years old fit for military duty. Two high-ranking officials assisted the provincial governor in his functions, and the admirals of the three provinces had their headquarters in Tongyong, Kyongsang-do. Among the magistrates, the governors of Sangju, Andong, Songju, Chinju, and Kyongju held high ranks equivalent to that of the vice minister of the royal court.

The provincial seat of government of Chungchong-do was at Chungju and that of Kyongsang-do was at Sangju during the early Yi Dynasty (1392-1592). But the former moved to Kongju and the latter to Taegu in the second half of the Yi Dynasty. Deutsch distinguished between population density and communication network as determinants of core area growth: "It should be noted that the density that makes a core area is one of traffic and communication rather than mere members of passive villagers densely settled on the soil" (Deutsch: 1953, p. 174). Despite his deterministic concept, his statement fit the Yongnam-ro zone. Chungju was located in the far eastern corner of the Chungchong Province, and it was isolated from other areas of the province. Sangju was in the northwestern corner of
Kyongsang-do. The shift of provincial capitals, therefore, was inevitable. And it had a considerable effect on the destiny of the Yongnam-ro. Chungju and Sangju did not benefit from that shift, but Taegu accomplished the dream of becoming the political focus that they had tried to realize during the United Silla Kingdom. If we compare the Yongnam region to a parallelogram, Taegu is located very close to its center. The four major cities in the four corners, Andong in the northeast, Sangju in the northwest, Pusan or Tongnae in the southeast, and Chinju in the southwest, are almost equidistant from Taegu in the center (Figure 4). The Yongnam-ro ran through the middle of the Naktong Basin from the northwest corner to the southeast, and that route was connected with the sea route to Japan. This suggestion may be criticized as locational determinism, but the existence of Japan in the southeast affected the development of the Yongnam-ro. Without Japan, the Yongnam-ro would have been less important.

Numerous local routes branched out from the main truck of the Yong-ro. The major focal points were Sangju, Taegu, and Miryang. These three cities prospered as administrative and commercial centers because they benefited from both the overland routes and the Naktong River route. Miryang was at the navigation terminus of ocean-going junks, Taegu was close to the junction of the Naktong and Kumho and Sangju was the terminal of the large river junks and the gateway to the Sobaek Mountains.
Fig. 4. Centralized location of Taegu as a provincial capital.
The influence of the Han River was more important than that of the Naktong. The role of the Naktong was regional, while that of the Han was national. The Han River has done for Korea what a highway may do for another country. It was, together with the Yongnam-ro, the mainstreet of Korea: People from the north, south, east, and west gathered there. It was used to transport the crops either to the market or as tribute to the king's court.

When the Korean Peninsula was divided into three kingdoms in ancient times, the Sobaek Range functioned as a pioneer boundary. The regions of the northern and western parts of the Sobaek Range had a different landscape and culture from those of the area south of the Range. The region between the Han River and Sobaek Range served as a buffer zone between the north and the south. That no-man's land served as refuge for men in trouble with the law or trying to dodge military duty. Despite the ending of the political boundary on the Sobaek Range by the unification of the peninsula, the relict boundary is still reflected in the contrasts between the two sides of the Range. The difference between the upper Naktong and the upper Han basins is less marked than that of other areas because of the active transportation through that segment of the relict frontier zone.

Two major gateway communities, Sangju and Chungju, developed on each side as responses to increase trade or to the settling of sparsely populated frontier areas since the...
Three-Kingdoms era. They are located along natural corridors of communication and at critical passages between prosperous areas, densely populated and with good agricultural, mineral and craft productivity. They are also situated at the contact point between areas with different industries and different levels of sociopolitical complexity. There are three origins for the population of the gateway cities: settling of the military troops and their families, settling of the upper class people exiled from the capital city, and urban movement of the increased native population (Eberhard: 1956, p. 258). During prehistoric times, Sangju and Chungju may have developed as agricultural communities and later as trade centers. During the Three Kingdom period, Chungju was the advance base of the Koguryo, and Sangju was the northward and westward base of the Silla Kingdom. After the unification of the Korean Peninsula, a great number of the elite were transferred to these cities by the Silla Court in order to control the new territory (Samguk Sagi, Silla Bongi 4, King Chinhung 19:2). Rather than being banished, they were sent as colonists. During the Koryo and Yi dynasties, the Korean people suffered from invasions from the north and from the raids of Japanese pirates. Generation after generation, people from northern and central Korea fled to the Yongnam region. Most people returned home after the war, but others settled there.

The economic base of the Yongnam-ro zone dominated
other regions. The major part of the revenue of the successive Korean kingdoms came from taxes. The land-tax, like the European tithe, consisted of a percentage of land revenue. During the early periods of the Yi Dynasty, the average of total arable lands throughout the country was about 1,630,000 kyol (Annals of King Sejong, Topography). The term kyol means "knot" and represented 100 A-frame Jigye loads of sheaved paddy rice. This administrative unit of farmland is equivalent to an American rice or soybean field yielding 100 bushels (Choe Ching-Young: 1971, p. 112).

All the farmlands were classified according to productivity into three grades. Those in the three southern provinces of Kyongsang, Cholla, and Chungchong were first grade; those in the three central provinces of Kyonggi, Kangwon, and Hwanghae, second grade; and those in the two northern provinces of Hamgil and Pyong'an, third grade. Each grade was in turn subdivided into three categories. In other words, there were nine different grades of farmlands according to their productivity: Grade I (a, b, c), Grade II (d, e, f), and Grade III (g, h, i).

The farmlands in the eight provinces were classified into nine grades (Table 2). Although Kyongsang-do (Yongnam region) possessed only about 17.2 percent of the dry fields and 27.7 percent of rice paddies of the country, it was the leading agricultural region: It held about 62 percent of the Grade Ia rice paddies of the country. Kyongsang-do
<table>
<thead>
<tr>
<th>Provinces</th>
<th>Grade of Lands</th>
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<tbody>
<tr>
<td></td>
<td>D: dry field</td>
<td>P: rice paddy</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e</td>
<td>f</td>
<td>g</td>
<td>h</td>
<td>i</td>
<td></td>
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<tr>
<td>Kyongsang</td>
<td>59,000</td>
<td>82,700</td>
<td>57,100</td>
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<td></td>
<td>51,000</td>
<td>38,800</td>
<td>13,700</td>
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<tr>
<td>Cholla</td>
<td>55,200</td>
<td>63,100</td>
<td>48,300</td>
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<td></td>
<td>29,100</td>
<td>52,000</td>
<td>29,900</td>
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<td></td>
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<tr>
<td>Chungchong</td>
<td>2,200</td>
<td>102,100</td>
<td>36,800</td>
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<td>1,100</td>
<td>76,200</td>
<td>1,800</td>
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<td>24,800</td>
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<td>49,000</td>
<td>20,600</td>
<td>6,600</td>
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<tr>
<td>Kangwon</td>
<td>57,400</td>
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<td>8,500</td>
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<td>Hwanghae</td>
<td>70,000</td>
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<td></td>
<td>34,700</td>
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<tr>
<td>Pyong'an</td>
<td>273,700</td>
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<td></td>
<td>350,600</td>
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<td></td>
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<tr>
<td>Hamgil</td>
<td>123,700</td>
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<td></td>
<td>6,700</td>
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</tbody>
</table>

Source: Sejong Silok Chiriji
also had 50 percent of the Grade Ia and 34 percent of the Grade Ib dry fields of the country. The farmers paid an average of 7.5 bushels of rice or soybean in tax on their crop per kyol (Table 3). The size of one kyol of land varied according to period, region, and quality of land, but one average kyol corresponded approximately to 4.5 acres (Choe Ching-young: 1963, p. 21). Based on the average yield Kyongsang-do should have paid about 1,500,000 bushels of beans and 800,000 bushels of rice in tax, but their actual tax grain must have been well above that because their yield per acre far exceeded the national average. Among the seventy-one counties in the Yongnam region, Sangju, Songju, Sonsan, Kimhae, Indong, Miryang, and Taegu were large and fertile agricultural areas. Kwangju, Yoju, Yongin, Suwon, Juksan, and Chungju in the Han Basin were also large agricultural communities. In these two regions, the communities showing the best balance between agricultural wealth and population support were Kwangju, Chungju, Sangju, Sonsan, Songju, Taegu, and Miryang.

The maximum aggregate of agricultural land was recorded as 1,625,233 kyol during the reign of King Sejong: 1,155,349 kyol of rice paddy (Sejong Silok Chiriji). In 1644, the total taxable land in the eight provinces was reduced to 683,336 kyol (Ban'gye Surok, Vol. I, Jonje Sang). During the Japanese invasion from 1592 to 1598, Korea was devastated, and farmland was left fallow. The
<table>
<thead>
<tr>
<th>Grade of Harvest</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Tax Grain (Unit: Bushel)</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Based on King Sejong the Great, 1971, p. 124
Manchu invasion in 1638 ravaged the country once again, and things were at their worst during the first half of the seventeenth century. The government's annual revenue from the land tax has decreased even more, from 1,087,477 sok (5,577,882 bushels) to 272,912 sok (1,395,309 bushels). Kyongsang-do suffered the most because the Japanese invaders landed in Pusan, marched into the province, and turned it into a major battlefield. It took almost two centuries to reconstruct the province and to recover from the economic devastation. The aftermath of war was so serious that Kyongsang-do became second in agricultural leadership to the rival neighboring province of Cholla which was less damaged during the Japanese invasion.

Yi Jung-whan, an eighteenth century Korean geographer noted as a pioneer of systematic geography, was influenced by the tradition of modern geography of Europe by means of cultural contact with the Catholic missionaries in Peking. His discussion of the effects of economy and transportation on the development of settlement was, for that reason, basically different from that of the neo-Confucian scholars, who indulged in vain speculation. He stated that the fertility of agricultural lands is the most important factor to support people and produce surplus materials which can be traded for exotic goods. Profit results from the trade and transportation of goods between inland areas and the sea coast. The focal point of overland and river routes provides favorable conditions for the development of
settlements. The traditions and customs of people—including their desire to learn, their concern for property, and their religion—also influence the development of settlements. Finally, the scenic beauty of the landscape, the convenience of transportation, and the availability of areas sheltered against warfare, disease, and flooding are also important elements influencing people's choice of a settlement.

Among such possible settlement locations as coastal, riverine, and valley sites, Yi considered the valley to be the best, and he selected the upper Naktong Basin as the ideal settlement site (Taengniji, Vol. II, Pokgo 4, Sanchon). He stated that a number of great noble families originated from that area or settled there after migrating from other areas. Yi quoted from a Korean proverb "More than half of Korean great men are in the Yongnam region, and half of Yongnam's great men are from the Sonsan area". This may sound like a determinist statement, but the Yongnam region has in fact been the cradle of knowledge and achievement since the Silla Kingdom. Many great scholars, men in high office, military leaders, artists, and religious dignitaries were born and trained in Yongnam. A communication network to link the royal court in central Korea with the Yongnam region was of major strategic importance. First, Yongnam was one of the most productive areas of the state; secondly, the royal court recruited most officials from that region; and thirdly, the court
needed to watch the nobles of the area to prevent them from rebelling.
CHAPTER III
THE YONGNAM-RO THROUGH HISTORY
Origins of The Road

Cultural phases based on technology and economic
development have left their impact on the landscape. The
geographical study of old roads, therefore, needs to be
based on cultural history. The cultural history of Korean
highways can be divided into three ages: Ancient Age, from
the early chiefdom period to the United Silla Dynasty
(22,000 B.C. - 918 A.D.), Middle Age (918 - 1392), and
Modern Age (1392-1910). The Modern Age is to be subdivided
into two periods, before and after 1700.

The origin of ancient Korean roads seems to be lost in
time, but historians agree that the Middle Age was the
period of organization of communication routes, and that
the Modern Age was the period of reorganization or
consolidation. To the main administrative function of
roads must be added after the 1700s, commercial and cul-
tural functions until then neglected by the government.

While the search for food sources probably explains
the existence of most local paths around primitive settle-
ments, long distance routes are linked to the irregular
distribution of important resources. Many archaeologists,
geographers, and sociologists consider that ancient road
systems have evolved from primitive trade routes. "An
increase in long distance trade occurs with the appearance
of incipient chiefdom societies, thus suggesting that trade
is an important factor in the process of social stratification" (Hirth: 1978, pp. 35-6).

Institutionalization of trade also helped reinforce regional redistribution systems because the newly acquired goods were allocated locally through old networks. As to the size and organization of chiefdom societies, the concept has been more precisely formulated (Renfrew: 1975, pp. 13-4):

In most, perhaps all, early civilizations there function a number of autonomous central places which are not brought within a single unified jurisdiction. It is such autonomous territorial units, with their central places, which together constitute what we would all term a civilization. They may be recognized as.... The Early State Module.... which falls within a restricted size range. Frequently the modular area is approximately 1,500 square kilometers with a mean distance of about 40 kilometers between the central places of neighboring modules. Special environmental or social factors may reduce this distance to about 20 kilometers, while intervening parcels of uncultivable land may increase it to at least 100 kilometers. Many early civilizations comprise about 10 of such early state modules.

The approximate size of the Sam-Han territory was 90,000 square kilometers, i.e., slightly smaller than Korea today. The total number of tribes was about ninety, therefore, the average size of each early state module would have been approximately 1,000 square kilometers. The maximum distance from the center to territorial boundaries was probably about 30 to 40 kilometers, which must be related to the means of transportation available. Such centers as Kwangju, Chiksan, Koryong, Sangju, Kimhae, and Saro (today's Kyongju) became the foci of political, religious,
and commercial activities. An interregional overland trade network developed among the early state modules of Korea.

Archaeological evidence shows the existence of interregional trade networks among the early state modules and between the Sam-Han tribal leagues and the Chinese commandery prefectures. The knife-money coins, which were made and widely used in mainland China during the Warring States period (430-211 B.C.) have been found in northwestern Korea as far south as the Taedong River. They were probably minted in the state of Yen, China (Henthorn: 1971, p. 21; Loewe: 1967, p. 53; Yu: 1967, p. 6). Chinese coins, minted in the Wang Mang period (A.D. 8-22), glass, looms, spearheads, javelin heads, iron daggers, and other artifacts of Chinese origin have been found in the shell midden of Kimhae and in other locations (Hatada: 1969, p. 5).

Ancient civilization based on agriculture, ceramics, and metallurgy developed about 2,000 B.C. in Korea. Tribal societies seem to have existed in those days. The oldest and most powerful chiefdom, Ancient Choson, dominated the territory between the Liao River in southern Manchuria and the Taedong River in northern Korea (Han Woo-Keun: 1974, p. 12). The use of iron was introduced to Ancient Choson from China during the fourth and third centuries B.C. That kingdom was conquered in 190 B.C. by Wiman, a military leader, and King Chun of Choson fled southward to the state of Chin where he called himself King Han (Han Woo-Keun: 1974, p. 12).
1974, pp. 15-16). Wiman's kingdom was conquered by the Emperor of the Han Dynasty, and the Chinese subdivided the kingdom into four prefectures: Nangnang, Chinbon, Imdun, and Hyonto.

Chinese colonization had a considerable impact on the ancient history of Korea. Anti-Chinese tribal leagues were organized, but most of them were influenced by the advanced Chinese culture. The establishment of Nangnang, in the area of Pyongyang, provided a major turning point in the history of Korea. Particularly did the diffusion of a culture using iron implements stimulate the development of paddy agriculture in the lower Naktong delta. Iron was the most important trade-item of the Chinese, and it was supplied by Pyonhan and Karak in the lower Naktong Basin (Kim Won-ryong: 1976, pp. 127-30; Pearson: 1974, pp. 93-101).

From the fourth century B.C. to the third century A.D., three Korean tribal leagues collectively known as the Sam-Han, appeared: the Mahan, Chinhan, and Pyonhan. Mahan held the territory south of the Han River and along the southwest coast. Chin-han was along the eastern part of the Naktong River, and Pyonhan, lay along the western and southern Naktong Basin (Fig. 5).

The sizes of the population and territory of the tribal league are hard to pinpoint, but rough estimates can be reached. Mahan seems to have consisted of some fifty tribes, Chinhan of twelve, and Pyonhan of twelve. The
Fig. 5. Early political divisions of Korea.
largest tribe in Mahan is recorded as having consisted of about 100,000 households and the smallest of several thousand. In both Chinhan and Pyonhan the largest tribes had four or five thousand households and the smallest six or seven hundred (Han Woo-keun: 1974, p. 33).

Men generally try to control trade in specific commodities so as to prevent others from trading the same items. Pre-modern agricultural societies were large, expanding, administrative-military structures, based on relatively limited economic units, while commercial communities formed an extended system of economic relations between independent units (Fox: 1971, p. 47).

The ancient towns or political centers of the chieftains in the Han Basin, probably bound together by a loose commercial confederation of merchants, hardly formed a nation. Few of them developed interest in controlling their territory politically as neighboring agricultural societies did. Their trading partners were probably the Chinese in the Taedong Basin, and the Koreans including the three Hans, Yemaek, and Okcho. The merchants of the Han Basin probably acted as political informers and as cultural brokers. In urban communities during the Chou dynasty in China (12th to 3rd Century B.C.), there existed a symbiotic relationship between the ruler and the merchants. Merchant provided military information to the rulers in exchange for protection in their trade and for tax relief (Chang Sen-dou: 1961, p. 115). There seems to have emerged a similar...
merchant class in the Han River area where ancient Koreans contacted the neighboring Chinese merchants in the Chinese commandery-prefectures. Some of the merchant clans emerged as local nobles as of the late Three-Kingdoms period. The progenitor of the Yi family from Michuhol (present day Inchon) was appointed by the Silla Court as envoy to China, and his descendants became powerful nobles during the Koryo Dynasty (Singjung Dongkuk Yoji Sungnam, vol. 6., Inchon Tohobu, In-mul [personality]). Wang Kon, the founder of the Koryo Dynasty, was also from a merchant family of Songdo. Other well-known noble clans from that area include the Yi clan of Yonan, the Yun clan of Paju, and the Hong clan of Namyang, but the precise origins of these clans are not known. The Hong Clan may be related to commercial business because their home was well known as a boarding and boat-landing site for China envoys from the Silla Court (Sinjung Dongkuk Yoji Sung-nam, vol. 9. Namyang Tohobu, Gojok [historic site]).

Advanced Chinese culture penetrated northwestern Korea. Trade developed between the Chinese and the agrarian societies in the Sam-Han area. The Korens, loose political organization left them at some disadvantage (Han Woo-keun: 1974, p. 21):

One of the chief aims of the Chinese government of Nangnang appears to have been economic exploitation. Fish, salt, iron, timber, and farm products were exacted from the Koreans for local use or for shipment to China.... One ancient record tells of a labor force of 1,500 Korean men drafted to cut timber in the Han region south of the colony. Chinese
merchants also went south, and we hear that iron was being supplied from Pyon-han. Salt and iron had long been government monopolies in China, and these commodities were so considered in Nangnang.

The civilized Chinese society in Northwestern Korea was based on commercial activity, and agricultural activity was not highly respected. The Chinese settlers traded China-made exotic goods for northeastern coast sea-products and furs, for southern rice, soybean, and other grains, and southeastern iron ore, and west coast salt and fish. Such different economic backgrounds influenced the development of a trade network among the regions, and the Han Basin, located in the center of the Peninsula became the focus of trade routes.

From the Chinese colony to the Sam-Han area, bronze, iron, lacquer ware, paper, silk, medicine, and other exotic good were probably the main traded commodities. Rice and other agricultural products moved to the north, and salt and fish from the west coast to the north and remote inland areas. Rice, the most valuable grain, was probably traded from the southern regions through the Han River route to the north. Salt from the west coast was taken to the Han Basin from which it was sent to the north and to inland areas. The Chinese colony was the main consumer of rice, salt, fish, furs, and iron ore. In early times, iron-making was introduced from China, but the Pyon-han people produced ironware and exported it to Japan and probably to the Chinese colony (Hatata: 1969, p.11).

Salt has been one of the most universally traded...
commodities throughout time (Gilmore: 1955, p. 1013). Among the rural Koreans salt is used symbolically in various kinds of rituals. Shamans spread salt in from of main entrances or burn it during special ceremonies. A number of place-names related to salt are found along the Han-Naktong route and the Yongnam-ro. The most typical name Yom-chang "salt storage", can be identified in river route settlement names and Yom-bat or sogum-tul "salt yard" or "salt fair," as well as Yomjon gori "salt street" or Yomjang gori.

Salt played an important part in the struggle for power as can be expected of an item that is in such demand and in very uneven supply. The struggle for salt sometimes resulted in warfare (Gilmore: 1955, p. 1014). There is no evidence of battles waged to gain supremacy over salt producing areas in Korea, but it probably played a strategic role by, for example, the blockading of the enemy's salt supply. It was used as a bargaining in peace conferences and for the signing of treaties. The salt fair sites in Chungju, Mirunghi, and Tanyang are located along the ancient from between Koguryo and Silla (Chung Yong-ho: 1980, personal communication). The ancient Yongnam route was opened and developed by merchants who dealt in salt, rice, fish, and ironware. Salt was an indispensable item to the Chinese, northern hunters, and southern farmers. While not perishable, salt is soluble and heavy. Its transportation cost is high, therefore inland navigation
routes are better for this purpose than overland routes.

The central part of the west coast of Korea was the largest salt producing area. From salt pans near the estuary of the Han, river boats went up to the southern border of the Chinese prefectures, to the eastern mountain regions, and to the Sobaek Range in the South. From the termini of the Han River, the salt moved to the consumers in the mountain valleys. Tax collectors, if later times can guide us, were posted at crucial points on salt trade routes.

The busiest seasons along salt trade routes were the late autumn and spring. The harvest season of salt almost coincides with that of agricultural products. Salt traders transported their wares inland, traded it for grains and other goods, and went back to their trade bases with their cargos. Salt trade followed a loose network with no specific standards of engineering. Engineer build roads were not to emerge until the Three-Kingdoms with its numerous military campaigns.

The Three-Kingdoms Period

In the early Three-Kingdoms periods, Silla and Paekje dealt discreetly with the Koguryo Kingdom in the north, the strongest kingdom. Paekje and Silla once, however, put up a united front against the Koguryo invasion into the Han Basin. Throughout military campaigns, the Korean Peninsula was unified by Silla, and these wars accompanied the
development of the communication network. Unfortunately, one of the main purposes of the Silla's unification was the expulsion of Koguryo, which had half continental and half peninsular characteristics. Both Eastern and Western historians state that military considerations have influenced transportation from the earliest times to the present. The unification of the peninsula by Silla, therefore, influenced the development of the peninsular character of the network pattern after the exclusion of Koguryo from the map of Korea.

The oldest recorded road engineers were the unmani, army engineers in the service of Sargon II in 720 B.C. (Merdinger: 1952, p. 268). Military campaigns for territorial expansion initiated the straight alignment of ancient roads in Japan (Fujioka: 1971, p. 10; Ashikaga: 1926, p. 26). A political power who could build large tumuli, began in A.D. 613 to build planned roads in Japan. The first roads were distinctively military in character, intended mainly for the troops and their supplies. Whatever commercial and cultural functions took place in consequence of was secondary. To cut the shortest path, builders paid little attention to natural obstacles or to the effect of the roads on the localities through which they passed (Mitchel: 1965, p. 297). Roman roads seem to some to have been too expensive and not very valuable as highways for purposes other than military conquest (Pound: 1976, p. 301; Cooley: 1976, p. 19). Ancient military
engineers built roads for the forward movement of troops, only to abandon them afterwards (Merdinger: 1952, p. 268).

It is difficult to know whether Korea's ancient roads were costly because few stone pavements remain to this day, and because many old roadways were overlaid by new ones during the Koryo and Yi dynasties. Only a few relics of fortresses, temple sites, and stone monuments have survived. The study of ancient roadways itself is still in its infancy in Korea, but it is already clear that the crooked ancient trade roads between the Han Basin and the Yongnam region were straightened by military engineers.

In the first century B.C., three ancient kingdoms were founded in southern Manchuria and in the Korean Peninsula. The core of Koguryo was Hwando-song (now Chi-an) on the middle Yalu River in Manchuria, that of Paekje was Wire (now near Seoul) south of the Han mouth, and that of Silla was Saro (new Kyongju) near the southeast coast.

The Expansion of Koguryo.

The Koguryo equestrian hunters began to increase their power in rugged southern Manchuria. They sugjugated the Chinese commandery prefecture in Manchuria and northwestern Korea in A.D. 313. After the expulsion of the Chinese from Korea, Koguryo ventured to challenge the southern kingdoms, Silla and Paekje. King Kwanggaeto (391-412) led a large force southward, threatening Paekje. King Changsu (413-491), his successor, transferred his capital from Kungnae-
song in southern Manchuria to Pyongyang in 427, and used it as an advance base for his southern campaign.

Paekje was founded by a royal family member of Puyo from Manchuria in the lower Han Valley. Paekje succeeded the Mahan Kingdom. Paekje, unable to resist the powerful Koguryo kingdom, was gradually confined to the southwestern part of the Peninsula. In 475, Wire-song, the capital of Paekje, fell to Koguryo, and King Kaero was killed. Paekje was forced to move its capital far to the south to Ungjin (modern Kongju), and finally in 538 to Sabi (modern Puyo on the Kum River). The entire Han Basin passed into Koguryo hands.

The imperialism of the three kingdoms caused direct contact at the borders. While Paekje had controlled the Han Basin, Silla could pay little attention to the power of Koguryo because neighboring Paekje played the role of buffer state between those two kingdoms. The existence of that buffer state led to the development of a border zone landscape between Paekje and Silla, in the Sobaek Range. The motivation for Koguryo's imperialism seems to have been a desire to acquire rice, iron, and salt from the southern kingdoms. Population increase may have led Silla to imperialism. According to ancient records, Kyongju, the capital of Silla, had 178,036 households during the heyday of that dynasty (Samkuk Yusa, vol. 1). Some historians disagree with these figures but others think they are plausible because the metropolitan area of Kyongju during
United Silla was much larger than that of today (Yun P.S.: 1977, personal interview). If so, Silla would have had an enormous population, and that might explain the Silla move for territorial expansion.

Throughout history, man first settled down by permanent occupation of a territory, then mountains and other barriers tended to become permanent frontiers between the various peoples. The Sobaek Range was a natural barrier between Koguryo and Silla or between Paekje and Silla. The location of frontiers, however, is determined more by the political will of the neighboring states than by natural features. In other words, the frontier is a man-made line. When we discuss the function of the frontier, its landscape must be examined first. One may say, "It is a sociological boundary" (Steiner: 1941, p. 79); and another may insist that it is a cultural barrier (Prescott: 1978, pp. 192-93). The first statement is colored by a person's concern about linguistic, social, religious, economic, or governmental matters. The second one shows someone more concerned about the different cultures that may develop on either side of the frontier. The first priority should be the boundary itself as an element of the cultural landscape, including the remains and relics of buildings, fortresses, and communication networks. The second consideration should be the variations in landscape and land-use patterns reflecting the population density, mode of life, and social and economic arrangements. The
third element of study should be the influence of the presence of a boundary on the behavior of the inhabitants.

The influence of the ancient frontier is still remarkable in the Sobaek Range. It is a distinct line between different dialects, house-types, strong regional ethnocentrism, and difference of customs. The areas along the Yongnam-ro, however, have more similarities in many respects than other areas of the Sobaek Mountains.

In discussing the border landscape of the Three-Kingdoms period, it is obvious that the area considered is not a sharp demarcation line, but rather a frontier zone, a strip of territory. Such a zone existed between Ching China and Korea in the eighteenth century in which settlement was forbidden by either power (Broek: 1941, p. 5). Such a no-man's land may well have existed between Silla and Koguryo. The entire mountainous belt of Sobaek Range from Chungju to Mun'gyong did not until fell under the control of a single power. Although a water divide can be the best and fairest line of division (Curzon: 1908, p. 19), neither Silla nor Koguryo fixed their boundaries along a crest.

The average width of the Sobaek Range is about thirty kilometers; its northern slope is gentler and longer than the southern slope. Silla had more strategic disadvantage in defense. That condition prompted them to establish military bases beyond the crest of the Sobaek Range. Historic records indicate the military activities of Silla
on its northern border: "Malgal tribes invaded the northern boundary of Silla several times. Hence the court of Silla built long palisades along the Sobaek Range" (Samguk Sagi, Silla ponki vol. I. King Chima, 14:1; King Ilsong, 4:2). Military engineers fortified the Gyerip Pass in A.D. 155 and the Juk-ryong Pass in 157 (Samguk Sagi, Silla ponki, King Adala 3:4, and 5:3). In A.D. 168, some 8,000 Silla cavalrymen crossed the Gyerip Pass and attacked the Han Basin to keep Paekje in check, after the kidnapping of Silla people (Samguk Sagi, Silla ponki, King Adala 14:7).

The Expansion of Silla

Silla annexed Sabolju (247-261) on the upper Naktong River, and established the military base of Sangju-jong, appointing a military governor chosen from among the court nobles. Silla forces crossed the Wharyong Pass and occupied the area of Poun in the upper Kum Basin (Daedong Jiji, vol. 9. Kyongsand-do, Sangju, Yonhyok).

The development of frontier settlements through the advance of an enemy power promotes similar activities from the other side (Prescott: 1978, p. 38). The invasions of the Malgal tribe and the Paekje forces stimulated the development of frontier settlements along the Sobaek Range by the Silla Court. The construction of the Gyerip Pass and Sangju-jong, the frontier base of Silla, influenced the development of the military route between the northern
Koguryo's policy of southward expansion, coupled with the development of garrison settlements along the Sobaek Range, spurred Silla in turn to colonize rapidly neighboring tribal kingdoms. The transfer of Koguryo's capital from Kungnae-song to Pyongyang is a reflection of Koguryo's southward expansion. By capturing the Han River, Koguryo then ruled the northern half of the Korean Peninsula and most of Manchuria. Once the Koguryo forces crossed the Sobaek Range and advanced to the line of Boun-Yonggung-Yechon-Ponghwa in the northern part of the Naktong Basin, but the Koguryo and Silla powers fixed the boundary of the Sobaek Range some time between the middle of the fifth and the late sixth centuries (Samguk Sagi, Koguryo ponki, vol. 6, King Changsu, 56:2; Koguryo ponki, vol. 7, King Munja, 5:7).

Before Koguryo captured the Paekje capital at Wiresong, Silla realized the potential military threat posed by the Koguryo forces. Silla's construction of the Samnyonson fortress (470) in the upper Kum Basin exemplifies this awareness. Built as one of the outposts of Sangju, its initial function was to protect the northern frontier from the invasion of Paekje, but it became the outpost against Koguryo invasion upon the fall of the Paekje capital, Wiresong. The headquarters of the field army corps was located in Sangju, and the fortress of Samnyon became a frontier garrison (Chong Yong-ho: 1972, p. 66). They functioned as
Missing in number only.
the advanced bases of Silla during King Chinhung's northward campaign against Koguryo from 551 to 553 (Samguk Sagi Silla Ponki vol. 4 King Chinhung, 11:1, 12:1), and for the unification of the Peninsula in the second half of the seventh century (Samguk Sagi Silla Ponki. King Taejong Muyol 7:6).

The Samnyon-san fortress, about 80 kilometers east of Puyo (formerly Sabi-song), held strategic importance. Several important routes radiated from there and several strategic bases were almost equidistant from it. They were: Sangju, 52 kilometers away, Yongdong, 48 kilometers, okchon, 32 kilometers, Chongju, 48 kilometers, and Usul (now Taejon), 48 kilometers. Thus did Samnyon-san fortress become a very coveted point (Fig. 6). A salt-trade route seems to have run from the west coast through the Kum River to the Silla frontier during ancient times (Song Ju-taek: 1977, p. 154). This early communication route would have reached the Samnyon-san fortress through Poun, Kong-ju, Jinchon, Juksan, Ichon, and Hansong (Chong Yong-ho: 1972, p. 60).

Silla occupied the Han Basin in the early 550s and built bases and administrative centers. Kugwon-song (former Koguryo garrison) became one of Silla's military bases and its sub-capital (Samguk Sagi, Silla ponki: vol. 4, King Chinhung 18:2). Such military bases and administrative centers as Namchon-jong (now Ichon), Hansong (now Seoul), and Wonju were rebuilt (Samguk Sagi, Silla
Fig. 6. Military routes of the 5th century and the route of the Yongnam-ro.
The Samnyon-san fortress opposed invasion from Koguryo and Paekje and served as a northward base for Silla. Fierce wars among the three kingdoms, the shifting of boundaries and the setting up of new capitals helped to consolidate the control of larger areas. New warrior-officials and viceroyals congregated in those cities.

After the transfer of Paekje's capital from Hansong to Sabi (now Puyo), the Samnyon-san fortress gained even more importance as a northward and westward advance base. A direct road through Poun, Kwanki, and the Wharyong pass, was connected to Sangju, the frontier headquarters of Silla.

Internal Development During the Three Kingdoms

The organization of local administration affected the development of routes. Koguryo and Paekje each divided their territories into five administrative states corresponding to the five directions of Chinese cosmology: east, west, north, south and center. Each province was governed by a military official from a noble family and a civil official. The secondary level of administration was the song (fortress). The song, similar to a city of today was the seat of local military and administrative headquarters, the collecting point of taxes, and a trade center. The song was under the direct control of the king.

Well-developed networks grew from Pyongyang to the
provincial capitals. Main arteries linked the royal capital of Pyongyang to the former capital at Kungnae-song and to Wire-song (now Seaul). The Wire-song road extended southward through the Han Basin to the southern border of Koguryo and met the networks of Silla and Paekje in the Sobaek Range.

Even though Koguryo was initially influenced by the Chinese civilization and adopted the Chinese administrative system, little is known of its postal system. "The postal system was probably already developed in Koguryo, although the oldest record of such a system in Korea appears in the history of Silla" (Naito: 1934, p. 234). Korean historians seem to agree with this assumption. Where historic documents mention inpassing the management of horses and stations arranged in stages, these notes can be taken as suggestive evidence of a postal system, particularly in the light of nearby Chinese and subsequent Korean patterns. "The ruling class of Choson [pre-third century B.C.] rode horse-drawn carriages..." (Han Woo-Keun: 1974, p. 13). Koguryo possessed an efficient government supervision of horse-breeding and raising and a well organized horse-relay system. There were more than 20,000 calvalrymen (Nam Doyoung: 1976, pp. 12-16). Two different chapters of Samguk Sagi imply the existence of a postal system during Koguryo. The first one refers to King Munja's reign, specifically to A.D. 509; the second one is an excerpt from the diary of General Li Chi who commanded some T'ang mili-
tary expeditions: "After passing through seventeen sta-
tions from Pyongyang, we arrived at this castle [Kungnae-
song]..." (Samguk Sagi, vol. 1. Koguryo Ponki, King Munja
17; Chapji, vol. 37, No. 6 Topography 4. Koguryo). This
does not really prove that the Korean postal system ori-
ginated during Koguryo. Therefore, historians recognize
Silla as the period of origin of that institution.

Samguk Sagi records the emergence of the postal system
during Silla; "Postal stations were established in all
directions, and the court ordered government officials to
improve the roads" (A.D. 487) (Samguk Sagi, Silla ponki,
vol. 3, King Soji 9:3). The construction and managment of
the communication system passsed from military to civilian
officials. A well-organized communication system was pro-
bably one of the elements that improved Silla's power for
the conquest of the Kaya Confederation and the subsequent
occupation of the Han Basin in the sixth century (Fig. 7).

The government used transportation as a tool for
social consolidation through military power. During the
wars between Koguryo and the Chinese empires of Sui (A.D.
612) and T'ang (642-55), Silla took advantage of the situa-
tion to prepare for conquest north of the Han Basin.
Finally, Silla allied forces with T'ang for the conquest of
Paekje and Koguryo. Silla and T'ang troops first attacked
Paekje (660) which was much weaker, then subdues Koguryo
(668).
Fig. 7. Political developments of the ancient period in Korea.
The Consolidation of United Silla.

The T'ang rulers intended, however, not only to incorporate all conquered territories into the Chinese empire, but to subdue Silla as well. In 671, Silla troops engaged the Chinese and drove T'ang forces out to the Korean Peninsula. By then, most of the peninsula, except for the northern part of the Taedong Valley and Wonsan Bay, had come under Silla control.

The Kingdom of Silla was organized into three provinces (chu) before the unification. Each province was divided into a number of districts (kun), and each district into a number of counties (hyon). Officials of the province, district, and county were appointed by the royal court. Normally the provincial governors, who were equivalent to European viceroys, were appointed from the royal family. After the unification of the Korean Peninsula, the territory of United Silla was divided into nine provinces, more than one hundred prefectures, and about three-hundred counties (Ministry of Home Affairs: 1979, pp. 46-52).

Three elements distinguish the growth of a nation from mere territorial possession: historic tradition, geographic unity, and leadership (Peattle: 1944, p. 30). Koguryo had leadership, but lacked geographic unity. Silla possessed all three of these prerequisites, plus mobility. Silla troops constructed defenses in the mountain passes of Juk-ryong, Gyerip, Wharyong, and a few others in the Sobaek
Range and were therefore well suited to undertake the unification of the Korean Peninsula.

Unification is the great national event for the whole Peninsula. The communication network, the language, the laws, and the civilization of Silla brought the Korean people together and laid the foundation for a unified Kingdom. Cultural and social innovations took place under the Silla Dynasty. Political change grew out of the control of new territories. Regional administration had grown from three provinces (chu) to nine by 685. There were five sub-capitals including Kumgwan-kyong (now Kimhae), Sowon-kyong (now Chongju), Namwon-kyong (now Namwon), Chungwon-kyong (now Chungju), and Pugwon-kyong (now Wongju). There were also nine provincial capitals, 117 prefecture seats, and 293 county seats (Soguk Sagi Silla ponki vol. 9 King Kyongdok 16:12). Sons from distinguished families from the capital city were ordered by the court to relocate in the sub-capitals and provincial capitals (Soguk Sagi, Silla ponki, 4, King Chinhung 14:2). The urban heritage of Silla lasted well after the unification. Silla towns continued to be well populated.

In times of peace, the communication system functioned for trade and administrative purposes and for cultural diffusion. Since the postal system was established in 487, it ceased to be of strictly military nature, but became an administrative, economic, and cultural facility. Soguk Sagi related some historic events which promoted trade
March, twelfth year of King Soji's reign: the government established standing stores in the capital city and promoted commercial activity (vol. 3 Silla ponki, King Soji, 9:3).

January, Tenth year of King Jijung's reign: Dong-si [the East market] was established by 508 in Kyongju (vol. 4, Silla Ponki, King Hyoso 4:12).

The population and trade continued to grow in the capital city. Large amounts of goods were collected from the new territories and traded at the markets of Kyongju. Sub-capitals and other administrative or garrison towns also functioned as trade-centers. There were at least 420 commercial centers in United Silla, classified into three groups: standing-markets in the capital and sub-capitals, castle-town markets (song-up), and street-markets (karo) (Mun Jong-chang: 1941, p. 7).

The local governor's main duty was the collection of taxes, which consisted of the land-tax and of tributes. Well developed routes allowed the smooth transportation of tax grain and tribute. Transportation radiating from Kyongju was practical to reach some central areas, but not the regions in the west and the north. Kyongju's lack of centrality in the southeastern corner of the Peninsula diminished its strategic utility for political supervision. King Sinmun tried unsuccessfully to move the capital to Taegu, which was a better location, although not ideal, but he was prevented from doing so by the noble families of Silla (Yi Pyeong-do: 1977, p. 12). The disadvantageous
location of Kyongju indirectly led to revolts in the remote regions. Political chaos caused the paralysis of the communication system and finally destroyed the kingdom.

The Koryo Dynasty

In the late Silla Dynasty, farmers' uprisings began to occur in response to inefficient administration. They grew larger and larger and turned into regional rebellions led by several leaders in Pugwon-kyong (now Wonju), Chungwon-kyong (now Chungju), Chukju (now Chuksan), Sang-ju, Mujin (now Kwangju), Wansan (now Chonju), and other areas. The Sobaek Mountains became the stronghold of rebels. At the turn of the tenth century, the territories outside the Yongnam region were out of the control of Silla. Silla lost two-thirds of its territory and the country became divided into three sections: Later Koguryo, Later Paekje, and Silla.

Later Koguryo, with its capital of Cholwon, controlled the territory to the north of Sangju and Kongju. Silla monarchy was confined to the Naktong Valley. Later Paekje occupied the former Paekje territory. This political chaos was, however, of short duration; the rebel leaders lacked political keenness and Silla could not maintain its independence.

The Reunification Under Koryo

During late Silla a group of merchant-warriors from
the esturies of the Han, Yesong, and Imjin rivers became wealthy by trading with China. When the farmers' rebellion broke out, the merchants, led by Wang Kon, joined Kungye's forces to crush the rebels. Wang Kon, a native of Songdo (now Kaesong), then solidified his political position in the Later Koguryo as a general and minister. In 918, he overthrew Kungye, king of the Later Koguryo, and founded the Koryo Dynasty. Although the Korean Peninsula was once unified by the Silla monarchy in 668, its effect was limited because the antipathy against the Silla Court was strong in the former Paekje and Koguryo territories and because the unification was broken after two hundred years. After the reunification by the Koryo Dynasty, then the cultural and natural barrier of the Soabek Range was finally broken.

The Yongnam-ro must be discussed in light of the historic events in the unification and of Wang Kon's political doctrine. By 935, the last king of Silla, King Kyongsun, decided to abdicate and to hand over the remnants of his kingdom to Wang Kon. His submission to Koryo meant the end of the longest lasting dynasty was conferred legitimacy by the Silla court and consequently had the authority to lead a war against the Later Paekje. In addition, Songdo, the Koryo captial, and Kyongju developed a closer relationship. In other words, the foundation of the Yongnam-ro began to develop officially as a consequence of that historic event. The surrender of the last king of
Silla is narrated in *Samguk Sagi* (Samguk Sag'i, Silla ponki
12, King Kyongsun, 9:11):

When the king left Kyongju in order to submit himself and his monarchy to our king [Wang Kon], he was escorted by his court officials. Wagons and horses extended over ten miles. The road was packed with a train of attendants and crowds of curious people surrounded the king's company like a wall.

An internal power struggle of Late Paekje helped King Taejo (posthumous title of Wang Kon) successfully reunify the Korean Peninsula in 936 after his subjugation of Paekje.

King Taejo devoted his energy to establishing a firm control over the south. He first controlled the Silla aristocracy in clever ways. He offered former King Kyongsun the highest post in his government and made him governor of Kyongju whose revenues were set aside for his own use. Some former Silla officials were appointed to the Koryo Court. A large migration occurred from the Yongnam region to Songdo after the fall of the Silla moncarchy. The elite families who had played important roles in the reunification or who were high Silla nobles and members of the royal clan intermarried. This merger resulted in adoption of the Silla dialect as the official language of Koryo (Weems: 1960. p. 141), as well as the use of Silla political and cultural structure. The focus of political power moved away from the Yongnam region to the Songdo area which became the center of attraction. But Yongnam, with large population and multiple resources remained the life support of the remote capital, both economically as the
market-place of Korea and intellectually as the cradle of great men. The former merchant-led society of the estuary of the Han and Yesong rivers had moved the national core to Songdo from Kyongju, the former agro-political society.

During the reunification, independent provincial clans offered some resistance. To bring them under his control, King Taejo instituted several measures. First, he strengthened his government by offering positions in the central bureaucracy to all the powerful clan leaders and the military leaders who had served with him. He also gave them land-grants and annual stipends. He only made one exception to his largesse: The people of former Paekje were totally excluded from such participation. This is reflected in one of the Ten Rules that he formulated for the guidance of his descendants:

Rule Number Eight: The territory south of Charyong and of the Kum River is an area of evil fortune, and people dwelling there must not be selected as government officials.

The reunification of the Korean Peninsula by the Koryo Dynasty was a turning-point in the establishment of a postal system focusing on central Korea (Koryo sa, vol. 82. Pyongji Yokcham [postal system]). Thoroughly set on reunifying the Peninsula, King Taejo chose a central location for his royal capital: Kyongju was too far southeast and Pyongyang too far north. Songdo, however, was almost equidistant from the Yalu River and Kyongju.

The geographic location of Songdo was politically,
commercially, and culturally ideal. During the early periods of reunification, the northern boundary of Koryo was on the estuary of the Taedong River and Wonsan Bay. Pyongyang was abandoned and the old Koguryo territory in north Korea and Manchuria came under the control of Kitan. In terms of political geography, the choice of Songdo as royal capital reflected the Koryo monarchy's aggressive spirit, in their intention to recover the lost territory of ancient Koguryo.

Yesong-kang, the port of entry to Songdo was the advance base for the trade with China before the unification, now became an international trade base. Traders flocked there from China, Japan, Southeast Asia, and Arabia (Yi Pyeong-do: 1977, pp. 313-5; Rogers: 1958, p. 196). The development of inland navigation promoted trading activities in Songdo. Large amounts of grain and tribute were taken to Songdo by boats and carts. Songdo became the national focus of collection and distribution.

As historic events prove, the chaotic state of the communication system during the Later Three-Kingdoms period came to an end with the unification. But the postal system became rationally organized only after the shift of the capital from Kyongju to Songdo. The new communication system intensified the administrative strength to Koryo. The strengthening of royal power started during the reign of King Kwangjong (949–975) and was achieved under King Songjong (981–997). In 956, King Kwangjong enforced a law
that freed a large number of people who had been illegally enslaved. This event weakened the power of clan leaders and nobles and at the same time increased state revenues by adding these newly freed people to the tax-rolls (Yi Pyeong-do: 1977, pp. 101-03). Many of them were then posted along the royal highway at postal stations and ferries.

In 858, King Kwanjong adopted the Chinese Civil Service examination to open government positions to talented people and to displace the landlords from their position of power. During the early period, former Silla officials and meritorious leaders who had served with King Taejo in the campaign for unification monopolized important posts. By the next generation, the government had established a two-part classification, military and civil service. After the adoption of the civil service system, Songdo became the focus of education. Kukja-gam, the National Confucian Academies and royal libraries were established in Songdo and Pyongyang in the late tenth century. Twelve local academies were also established in major cities (Yi, Pyeong-do: 1977, p. 238-9). Although these educational institutions functioned as preliminary schools for the civil service examination, they contributed greatly to the development of culture in the capital city and in the various regions. The cultural ties between the national university and the local academies were formed in the early twelfth century.
The central organs of royal government, derived from the T'ang system, consisted of three boards and six ministries — Personnel, War, Revenue, Rites, Justice, and Public Works. The highway management and the postal system came under the Ministry of War. The Ministry of Public Works was responsible for the maintenance of roads, bridges, and ferries, and the Ministry of Revenue used the postal system to carry taxes and tribute to the capital. Kongyok-so, the Commissioner of the Postal Service, under the Ministry of War, managed the postal routes (Koryo Sa, vol. 77, Paekwanji 2, Kongyok-so). Although patterned after the Chinese T'ang system, the postal system of Koryo was shrewdly adapted to Korea and well developed during the reign of King Songjong. He consolidated it and provided postal lands for the postal servicemen, attempting thereby to insure their permanency in those positions (Koryo Sa, vol. 78, Sikhwaji, Chonje, Konghae Jonsi). This in turn prompted the development of roadside settlements and led to an increase in population and commercial activity along the roadways. Another facet of the consolidation was the change of names of postal station, ferries and river ports (Koryo Sa, vol. 3, King Songjong, 11:11).

The country was divided into ten provinces, 128 counties, 335 prefectures and 29 military bases (Mun Jongchang: 1941, p. 10). To supervise local administration, two sub-capitals were established, Pyongyang and Kyongju. Kyongju was later replaced by Namkyong (now Seoul). Main
arteries radiated from Songdo to the provinces in the northwest, northeast, southwest, and southeast. The northwestern and southeastern roads were the most important.

King Taejo once advised his descendants not to offer high government posts to the people from the southwestern region, Chola-do. His prejudice may be the source of the continued discriminatory treatment of the people of that province. The local administrative system and the communication network reflected this negative bias: the distribution of large towns was concentrated along the highways to the northwest and the southeast. The two sub-capitals of Pyong-yang in the northwest and Kyongju in the southeast were located along a straight line, as were Songdo, the royal capital, and Namkyong. The provincial capitals of Whangju, Chungju, Sangju and other large towns were also located along that route.

The uneven distribution of the major cities was also probably related to the uneven population density and productivity. The mountain valleys and basins of the Han and Naktong rivers retained their large populations because of their great concentrations of agricultural and mineral products until the Japanese invasion (1592 to 1598). Many historic records indicate that, as a result of being used as a landing base by the invaders and consequently severely devastated, Yongnam became superseded by Honam as the national cultural center and the market-place of the
nation.

The subsequent kings of Koryo faithfully adhered to the Founder's "Ten Rules", which included adopting Buddhism as the state religion and political philosophy. Because Buddhism was considered to be most effective in the protection of the kingdom, kings granted land and slaves to build splendid temples. Monks grew wealthy and became nobles. Being exempted from taxation and military service, the monks' position became attractive not only to the pious, but to the ambitious. Those who entered monkhood under false pretensions often used the income from their agricultural lands, forests, and salt pans to engage in usury. They were nevertheless not a majority, and most temples became the repositories of science, art, and literature.

Since Buddhism had been introduced to Korea in 370 A.D., it had contributed to the development of art, temple architecture, pagodas, bells, and statues. During the heyday of Silla, Kyongju was a Buddhist city. When Songdo became the royal city, seventy government-established temples, including Hungwangsa, the headquarters of Buddhism during Koryo, were located in Songdo.

The institutionalization of Buddhism was reflected in the recruiting system and in religious ceremonies. The court began to select elite monks through a national examination and to classify them into seven ranks reflecting the feudalism of Koryo society. There were
three major Buddhist religious ceremonies during the year, The Yondung (Lantern Festival) in February, the Palgwan (Harvest Festival) in November, and the Buddha's birthday festival on April eighth by the lunar calendar that were celebrated in the royal capital and in major cities. Many Buddhist monks and laymen gathered there for these ceremonies, coming from all over the country. Foreign envoys and merchants also took advantage of these gatherings to practice their trade. The number of monks attending the great ceremony at the Hungwang temple on one specific occasion came close to 3,000 (Yi Pyeong-do: 1977, p. 291). Such religious ceremonies led to pilgrimages. Songdo and Kyongju especially became the national religious foci, and the road between them functioned as a pilgrimage route. Although most temples and shrines were destroyed during the Yi Dynasty which oppressed Buddhists, some relics along the Yongnam-ro have survived. As observed by the author during his fieldwork, especially in the Sobaek Range area, pagodas, Buddhas, shrines, temples, footstones, and broken pieces of rooftop marking of abandoned temples, can still be found along the ancient roadway.

The differences between the terms used for place names of ancient settlements and those of new settlements are good clues for the reconstruction of the history and sites of shifting settlement. An attempt was made to verify the pattern and through interviews of elders, but no substantial amount of information was gathered, and it is
in some instances hard to separate fact from fiction. Many informants lacked thorough knowledge of the oral history of their home towns. Reliable information had therefore to be gathered from two additional sources, from the examination of artifacts in the field and from the study of old gazeteers, history books, and old maps listing the place names of extinct historic institutions. Old Korean gazeteers and maps often describe precisely the origin, size, and other characteristics of institutions, both extinct and extant.

Various artifacts such as pottery and piece of roofing tile, are reliable period indicators. In Miruk-ni sites, there are sherds from pots of the Silla period, from celadon ceramics dating of Koryo, from porcelain of the Yi Dynasty. At the Joryong-won site, three different cultural layers were identified from the various ceramic pieces (Nam Bong-hwan [Director of the Cultural Center of Mun'gyong County]: 1980, personal interview).

After Songdo had become the new focus of the integrated communication network, four important highways to distant points of the kingdom were completed, mostly by incorporating and renovating older roads. The most famous imperial road of Koryo was the one from Songdo northwestward to Manchuria through Pyongyang. It was the most important strategically because it was not only the symbol of the northward policy of Koryo, but also the road of cultural contact with China. It became the basis of the
Yi Dynasty's So-ro, or Uiju-ro, well known as the road used by envoys to China.

The second royal highway went from Songdo to Tongkyong (now Kyongju) through Namkyong, Chungju, and Sangju. Although this route was only second in strategic importance, it was first in the national economy and culture. It became the model for the development of the Yongnam-ro during the Yi Dynasty. Although it is difficult to identify the exact path of the road between Songdo and Kyongju, it is fairly clear that it ran west of the Han River, on higher ground than the present line of the Kyongbu railways (Seoul-Taegon-Taegu-Pusan) and east of the Naktong River. During the early centuries, the military road of Koguryo and Silla became a very important north-south artery between Songdo and Kyongju. The ultimate challenge for the ancient road builders was the Sobaek Range, that mountainous no-man's land shutting off Yongnam region from contact with the north during the Three-Kingdoms periods. After the reunification of Korea by the Koryo monarchy the cultural and natural barrier of the Sobaek Range was finally broken.

The choice of the side of Songdo for the capital of Koryo was related to the location of existing trade networks. King Taejo, coming from a mercantile background, considered commerce a very important factor in his choice of a capital. Several government-patronized markets sprang up in the capital city, and numerous regional markets were
also established. There were about 500 markets in the realm (Mun Jong-chang: 1941, p. 9). There were large regional market in Pyongyang and Kyongju; about 20 medium markets and small markets in administrative and garrison towns, and in transportation centers. The average distance between markets was approximately 16 kilometers, taking about one day on foot for the round trip (Mun: Jong-chang 1941. p. 9-11).

Formation of the Korean Postal System

Under an aristocratic monarchy, an institutionalized communication system is crucial. Ex-slaves were posted along the highway and managed the postal roads, horses, ferries, and public hostels. According to historic records, there were 525 stations in the kingdom, and these stations were distributed throughout 22 postal districts (Koryo Sa, vol. 22, Pyongji 2, Cham Yok) (Figure 8). The stations were classified into 6 classes according to their importance and the traffic flow that handled. A first-class station had 75 postmen, a second-class station 60, a third-class 45-50, fourth-class 20, fifth class 12, and sixth-class, 7. All postal roads were classified into three grades according to their amounts of traffic flow. The stations on the great roads had larger numbers of servicemen that the lower grade roads; the large station consisted of more than 40 households, the medium station had more than 10, and the small station fewer than 10.
Fig. 8. Political subdivisions and postal system of the 11th century.
There were five postal districts (do) between Songdo and Kyongju, from north to south the Chongyo-do, Kwangju-do, Pyonggudo, Sangju-do, and Kyongju-do. Historic records show three possible routes from Song-do to Kyongju. Any of them may have been the main highway between these two towns (Table 4). The first connected Songdo with the major cities of Namkyong, Kwangju, Chungju, Andong, and Kyongju. It went through somewhat rugged areas, but it was useful as an alternate route to the Han River during winter and during flooding. From Namkyong to the Jukryong Pass, this road almost paralleled the Han River and even met it in some instances. Between the Jukryong Pass and Kyongju, it was almost straight. After King Hyonjong completed his administrative system, that road became very important. It went through two out of the three sub-capitals and three prefectural capitals out of twelve. These were, from north to south, Namkyong, Kwangju, Chungju, Andong and Kyongju.

In the late Koryo Dynasty, several hundred thousand Red Turbans (Mongols) invaded Koryo (1361), and King Kongmin fled from Songdo to Andong through Kwangju and Chungju (Sinjung Dongkuk Yoji Sungnam, vol. 6, Kyongi Kwangju-mok Yok-won). In the early Yi Dynasty, this road was used by the Japanese envoys. All these facts seem to support the assumption that this road was the main highway between Songdo and Kyongju.

The second road between Songdo and Kyongju connected
Table 4. Itinerary between Songdo and the Yongnam region in the eleventh century

<table>
<thead>
<tr>
<th>Songdo</th>
<th>CHONGGYO DISTRICT</th>
<th>KWANGJU DISTRICT</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CHONGGYO • CHONGTONG • MASAN • BOKJI • NOGGYANG • NOWON</td>
<td>DOKTONG • KYONG • AN • ALI • OHAENG</td>
</tr>
<tr>
<td></td>
<td>CHONGGYO • ANGI • CHOLPA • CHONGNO • UGOK • JANGSU</td>
<td></td>
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<table>
<thead>
<tr>
<th>PYONGGU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAHUNG • YONWON • HWANGGANG • SUSAN • JANGRIM • CHANGNAK • CHANGBO • PYONGUN</td>
</tr>
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<thead>
<tr>
<th>SANGJU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN'GYO • ANGI • CHOLPA • CHONGNO • UGOK • JANGSU</td>
</tr>
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<tr>
<th>CHONGGYO D.</th>
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<tbody>
<tr>
<td>YONGSO • CHONGPA</td>
</tr>
<tr>
<td>YANGJAE • KUMNYONG • JUWACHAN • BUNHAENG • MUGUK • YOAN • DANWOL • ANBU</td>
</tr>
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<table>
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<th>SANGJU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOSONG • YUGOK • DOKTONG • SUSAN • ANGYE • SSANGGYE • CHONGNO • UGOK • JANGSU</td>
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<table>
<thead>
<tr>
<th>KYONGJU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHONGTONG • GAHWA • ABUL • MORYANG • HWALLI</td>
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<table>
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<tr>
<th>SANGJU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAGWON • NAKTONG • YONHYANG • SANGNIM • BOMO • AMNYANG</td>
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<table>
<thead>
<tr>
<th>KUMJU DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SONGUL • HYON • YUCHON • YONGGA • MUHUL • HWANGSAN • SOSAN • HYUSAN</td>
</tr>
</tbody>
</table>
the large towns of Namkyong, Chungju, Sangju, and Kyongju. It followed almost the same path as the Yongnam-ro of the Yi Dynasty from Seoul to Taegu.

The third road was probably the ancestor of the Yongnam-ro. A number of stations of the Yongnam-ro of the Yi Dynasty already existed during the Koryo Dynasty, but they were lined up along secondary roads and became really active only later. They were integrated to the Yongnam-ro southward, however, followed the same path as this third road. The section between Taegu and Pusan was not very active during the first half of the Koryo Dynasty, but bustled with activity during the Mongol dominance (1270-1356). During the Mongol invasions of Japan, Koryo was forced to build ships, store provisions and provide troops for the Mongols. The movement of government officials, troops, horses, and supplies between the capital and Kumju (now Kimhae) -- the advance base of the expedition -- brought a heavy traffic flow on that road (Koryo Sa Joryo, vol. 18 King Wonjong 15:1).

An institutionalized network is crucial in an agro-economic society. In all ancient civilizations, the hierarchy of settlements influenced the development of roads between higher and lower-ranked cities and contributed to the political integration of these civilizations.

Although some historians praise the Mongol and Arab contributions to the development of communication systems the Mongol contribution to the postal system of Koryo is
particularly questionable, contrary to some claims regarding their contribution to road construction (Borth: 1969, p. 37):

Along with their military prowess, the Mongols became the world best road builders, Genghis Khan, in fact, made roads an integral element of his war operations. He made up his armies with special forces whose entire responsibility was the building and maintenance of roads....He decreed that post stations be setup a day's journey apart, and that as many as twenty horses be kept in readiness at each of them for couriers, whose efficiency exceeded that of the Pony Express of the American West of the 19th century. Behind each army, the Mongols sent organizers and men of education produced by the Uighur culture of Mongolia. The most important functionary was the duragshi, the man appointed to administer and maintain the roads in his district, and to keep traffic moving in all kinds of weather.

Such a statement is open to discussion before it can be extended to Korea. Political anarchy generally results in road anarchy (Brunhes: 1952, p. 69). Before 1200, coming from Outer Mongolia, the Mongols never consolidated power as other agro-economic societies had in East Asia. Although they established one of the greatest empires in history, they kept semi-nomadic traditions. The population of Mongolia has always been very sparse and the Mongols could not develop cities and communication networks. What they had was beaten tracks that led to pastures. After they achieved cultural contact with civilized people by conquests, the Mongols adopted the already existing institutionalized communication systems of the conquered. They appointed communication specialists (duragshi or
darugachi) among the natives because they themselves were not familiar with postal systems (Koryo Sa, vol. 58 King Ch'ungryol 4:7). The Yuan Dynasty, founded by the Mongols in China, established a postal system in the conquered countries. The personnel of that postal system included postmasters (cjamin), stablemen (ulaacin), and supervisors (tatagasun).

The Mongols contribution to the development of the postal system of Koryo was therefore not really important, although both a Japanese and a Korean author seem to think otherwise. One states (Naito: 1934, pp. 378-9):

The author is going to summarize the influence of the Yuan postal system because its influence was considerable. I think that the organization and management of the early Koryo postal system was not very consolidated. It definitely seems possible that the regulations for the control of postal stations and the establishment of river stations and the express messenger systems were established after the Mongol dominance.

A Korean historian struck a similar note (Ministry of Communication: 1970, pp. 5-6):

The postal system of the Mongols was unprecedentedly perfect in the history of China....Such system was enforced in the conquered areas as a kind of means of sovereignty. It was in 1259 that Koryo surrendered after thirty years of resistance against the Mongols....

Such praise of the Mongol role may originate from a misunderstanding of nomadic culture or from an overblown appraisal of the Mongol's contribution in the world history.

A negative appraisal of the cultural contribution of
nomads seem more reliable. "Nomads are known, not so much as originators of culture but, due to their constant movements, as carriers of the culture of other peoples" (Peattle: 1955, p. 23). Actually, the Mongols did not possess an institutionalized communication system, but adopted the well-maintained Chinese T'ang system. Similar examples are the Arabs in the Near East and the Mongols in Russia; they neither constructed major roads nor showed much interest in road-maintenance (Wittfogel: 1963, p. 37 and 174).

After the surrender of Koryo to the Mongol Yuan Dynasty in 1259, the Mongols began to intervene in the management of the postal system of Koryo. The Mongol Emperor ordered the Koryo court to submit census records, to keep horses at the post station, and to insure the transport of military provisions (Koryo Sa Joryo, vol. 18, King Wonjong 3:12). In 1260, the Mongols established post villages (Irgens) for the operation of their own system in Korea, despite the existence of the Koryo system (Koryo Sa Joryo, vol. 18, King Chungryol, 12:2). The supervisors (tatagasun) were appointed by the Yuan government and posted along the highways between the Yalu River and Songdo, and between Songdo and the southern coast. Their main purpose was to supervise the preparations for the invasion of Japan. During that time, the existing Koryo stations became impoverished because they had to serve uncommonly large number of troops and Mongol officials and
provide many horses (Koryo Sa Joryo, vol. 18, King Wongjong 1. 15:1).

Once having surrendered to the Mongol Empire and having become its vassal, Koryo lost its title of Empire. While Korea had remained autonomous in its government, the highway system became part of a Sino-centric hierarchy. Some roads, such as the one from Songdo to the Yalu River, while they remained busy, were degraded to local roads by the Yuan Dynasty. The road from Songdo to the Yongnam region also became continental in orientation. The Mongols incorporated the roads into the Yuan network and required that their own stations along the Yuan lines be supplied with provisions.

It has been a common error among scholars to think that the postal system of Koryo was completed under the influence of the Mongols. On the contrary, the Koryo system included only a few Mongol contributions, such as the river post system and other less valuable ones; for example, the adoption of the ma-pae (horse plaque), an official bronze token that entitled its bearer to a certain number of horses or wagons at postal stations during the Koryo and Yi dynasties. On one side of the mapae, the number of horses allowed to the bearer, according to his rank, was engraved. On the reverse side, figures of the authority of the mint and the date of minting (Figure 9).
Fig. 9. Horse plaque (mapae): an official bronze token.
The use of map illustrates the Mongol interference in the postal system of Koryo. Before the Mongol dominance, Koryo officials had no restrictions on the number of horses that they could request. Even merchants could receive and trade horses that they could request. Even merchants could receive and trade horses freely. After the Mongol invasion, however, horses became requisitioned by the conquerors for military purposes. Horse-breeding became impoverished during wartime.

The Japanese Piracy

In 1356, King Kongmin started to remove the pro-Mongol aristocrats from the influential positions in which the Yuan Dynasty rulers had placed them. The northwestern territories, until then under direct Mongol rule, were regained by Koryo. The Koryo Court stopped the Mongol interference in the postal system. Nevertheless the postal system could not truly be revitalized because of the continual warfare with the Mongols and the Japanese pirates. The Koryo Dynasty faced national difficulties once again with the Wae-ku (the term Wae-ku, meaning "dwarf Japanese freebooters," was coined as early as 1223 when piracy started). Starting in 1352, they again plundered the sea coast of Korea.

During the Ashikaga Rebellion in Japan, the tragic condition of social confusion and food shortage in Japan brought numerous common people and warriors to starvation.
The central government in Honshu Island could not control the seaboard people in Kyushu and other remote islands. As the national chaos increased, most of the unorganized warriors along the coast and on the islands became pirates. Japanese pirates established their headquarters on the small islands in the Inland Sea of Japan. They ravaged not only ships transporting tax grains, but also the towns along the coasts of China and Korea. The Tsushima and Ikki islands in the Korean Channel were their primary advance bases. The Goto and Kagoshima islands near Kyushu were their secondary bases (Fig. 10). From the primary bases, they attacked the coasts of Korea and southern Manchuria, and from the secondary bases they ravaged the China coast from Chihli to Kwangtung (Kuno: 1937, p. 69). Japanese pirates destroyed towns and villages along the Yellow Sea coast in the fifteenth and sixteenth centuries. The failure to solve the problem of Japanese piracy accelerated the downfall of the ruling dynasties of Yuan and Ming in China and of Koryo in Korea (So: 1975, p. 3). Koryo especially suffered. It was attacked more than 500 times in the fourteenth and early fifteenth centuries (Table 5).

The problem of national defense related to the troubles within and without the monarchy. During the last half of the fourteenth century, Mongol power was on the wane. Rebellions began in China and the Mongol Empire became disorganized. The manauders known as the "Red Turbans" defeated the Mongol army and invaded Koryo in 1359.
Main Bases of Japanese Piracy

Area devastated by Japanese Piracy

City attacked by Japanese Pirates

City devastated by Japanese Piracy

Major Battle

Invasion Route of Japanese Pirates

Punitive Expedition

Yongnam-ro

Fig. 10. Japanese piracy and the development of the Yongnam-ro, 14th century.
<table>
<thead>
<tr>
<th>Periods</th>
<th>1280-1300</th>
<th>1301-20</th>
<th>1321-40</th>
<th>1341-60</th>
<th>1361-80</th>
<th>1381-92</th>
<th>1393-1400</th>
<th>1401-28</th>
<th>Total</th>
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<tr>
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<td>5</td>
<td>2</td>
<td>7</td>
<td>29</td>
<td>258</td>
<td>162</td>
<td>35</td>
<td>34</td>
<td>533</td>
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</table>

Sources: Koryo Sa Joryo Vol. 23-35
Han'guk Runje Sa (A History of Military System of Korea), 1968, p. 19.
and 1361 (Koryo Sa Joryo, vol. 27, King Kongmin, 9:3, 10:8). King Kongmin abolished the Mongol system and broke the Mongols dominance in Korea. He recaptured the northwestern territory.

The Koryo government was confronted by serious problems in the repulsion of Japanese pirates. First, its main force units were stationed on the northern frontier for the defense against the invasion of the Mongols and the Red Turbans, leaving southern and western coasts defenseless. Second, the long peace of about 250 years had reduced the vigilance of the Koryo government. Third, the application of civil service examination changed the characteristic of the Koryo Court; it had pursued the policy of militarism in the early period, but it eventually became a civilian government, dominated by the literati who controlled both administration and military affairs. The civilian government gave preferential treatment to the military officials in rank and salary, but little authority. These conditions brought about the poor quality of military power in the late Koryo Dynasty.

The Wae-ku were well trained, professional warriors. Their fleets ranged in size from fifty to five hundred ships (Koryo Sa Joryo, vol. 31, King Sinwu 6:8). Their attacks were both sudden and short. They moved from village to village, and from town to town. Sometimes they marched far into the interior and attacked even fortified cities. Even Songdo was threatened several times (Koryo Sa
The Koryo court decided to evacuate people from strategic area to Hansong (now Seoul) (Koryo Sa Joryo, vol. 30, King Sinwu, 2:7). The seaboard inhabitants of Cholla, Yanggwang, and Kyongsang were so afraid of Wae-ku raids that they fled to the mountains of the interior and deserted their homes (Koryo Sa Joryo, vol. 30, King Sinwu 1:7). The fields lay fallow and deserted. Not only was the farmers' life destroyed, but so was the state revenue. The Mongol Emperor sent an Imperial rescript to King Kongmin (Koryo Sa Joryo, vol. 20, King Kongmin, 19:5):

I heard that you exert yourself too much on the practice of Buddhistic austerities, and your people in the coastal area evacuated into the remote inland areas about thousand ri from their homes. When I asked somebody about the reason, he answered, "Because of Japanese piracy." Then I asked again, "How about the fortress and the troops?" He said, "There were neither fortresses nor troops there." If it is true, we think, it is really serious...You, therefore, seem not to pay attention to national defense, and the dignity of the monarchy will be endangered. Food should be the first consideration above everything else to the people, but the plains are abandoned, therefore people will be confronted with food shortage.

The Koryo court officials discussed these problems and considered counterplans against the pirates. Cho Jun's memorialization to the throne was one of them (Koryo Sa Joryo, vol. 32, King Sinwu, 14:8):

Fertile rice paddies reaching to thousands of ri were abandoned after the Japanese pirates' plundering. The fields were covered with weeds and the country lost the benefits of fisheries, salt producing, animal breeding, and agricultural
products....Please exempt people who reclaim the waste lands in the abandoned villages from taxation and corvee for twenty years. Transfer the people from the control of civil officials to that of regional commanders of naval forces: let them construct the fortresses and shelter the old and weak people there; post scouts in remote areas and operate the beacon-fire stations carefully. Let them engage in farming, fishing, blacksmithing, and other occupations. Build more warships for the navy. When the enemies come, let the people move into the fortresses, and order the navy to attack the Japanese pirates. If this project is accomplished from Happ'o to Uiji, refugees may be able to go back home soon. . . . The king approved this project.

After the Red Turbans, Khitans, and Jurchens (Manchus) were repelled, the Koryo court prepared the punitive war against the Japanese pirates. A number of administrative towns and garrisons were fortified under the guidance of military leaders. The Koryo navy was equipped with guns. After several sweeping victories on the west coast, Unbong, and other places, Koryo troops were able to forestall the pirates (Koryo Sa Joryo, vol. 31, King Sinwu, 6:8). In 1390, Pak Wi, the Commodore of Kyong-sang province, attacked Tsushima Island, the advance base of Japanese pirates; he destroyed 300 pirates ships and buildings, and rescued 100 Koryo people (Koryo Sa Joryo, vol. 34, King Kongyang 1:1). However, the subjugation of the Japanese pirates had to wait for the succeeding Yi Dynasty because Koryo declined through a series of misfortunes such as the invasions of the Mongols, Red Turbans, and Japanese pirates.

In 1396, King Taejo, the founder of the Yi Dynasty, ordered a large fleet under the command of Commodore Kim
Sa-hyong to engage in another punitive expedition to Tsushima and Ikki (Yi Sang-baek: 1977, p. 138). The Japanese pirates' plundering markedly decreased at the turn of fifteenth century. They made only seventy attacks on Yi Korea; however, King Sejong was intent on the extermination of piracy in Korea. Two hundred battleships attacked and conquered Tsushima in 1418. Tsushima was incorporated into Korea as a local province with the name of Kerim (King Seijong Memorial Society: 1970, pp. 1154-61). The act ended Japanese piracy in Korea.

Japanese piracy had destroyed the transportation and communication system. The transport of tax grain was especially severely damaged. At first, grain ships and merchant ships were the main targets of Japanese pirates. The Koryo court decided the transfer the transport of tax grain from the sea route to the postal route. King Kongmin ordered the officials to "Reorganize the postal route and to use it for the transport of tax grain. Build public hostels at every strategic place of transportation, and provide accommodation to the transportation units" (Koryo Sa, Sega, King Kongmin, 5:6). After this royal order in 1356, overland routes began to take over a portion of transport of tax grain, and finally land routes handled the whole transport of tax grain from 1376 into 1390s. The sea routes in fact could not be used from 1356 to the early 1390s. (Choe Wan-gi: 1976, p. 397. However, the amount of tax grain was considerably decreased because of the
depopulation of the productive coastal plains in the southern and southwestern regions and of the consequent abandoning of the fields. The postal system itself was in no condition to transport tax grain because it had also been damaged, in this instance by the Mongols. The economic decline of Koryo Dynasty grew directly out of the disorder of communication networks, and it resulted in the collapse of national revenue (Yi Dae-hi: 1968, p. 89). In the late Koryo Dynasty, the government tried desperately to reconstruct communication networks. Cho Jun memorialized the King: "Judging from my analysis, the reason of the ruin of post stations is related to excess use in spite of the limited facilities and shortage of personnel" (Koryo Sa Joryo, vol. 33, King Sinwu, 14:7). In accordance with Cho Jun's proposal, the court appointed trusted public figures among higher court officials as yoksung (Supervisor of postal district). They attended to the reconstruction of post stations (Koryo Sa Joryo, vol. 34, King Kongyang, 1:12).

Until the expulsion of Japanese pirates from Korean waters and the reconstruction of the warehouses at the sea ports, the postal system was the only way to transport tax grain. Among the overland routes, the road between the capital city and the upper Yongnam region was the most important because it was out of reach of the Japanese raids. The upper Naktong Basin and the Han Basin were not invaded by the pirates. Tax grain was collected at every
county seat in that area and moved through the Gyerip or Juk-ryong Pass by draft animals. Kumchon-ri near Chungju was the collecting point of tax grain from the upper Naktong Basin and Han Basin. Thence, the grain was transported along the Han River route and arrived at Songdo by river junks. This route was the only unthreatened life line of Koryo.

In the early Koryo Dynasty, the route between Songdo and the Yongnam region was not finally consolidated as a single line, but the national emergency like Japanese piracy promoted the development of an arterial route that became the foundation of the Yongnam-ro of the succeeding Yi Dynasty.
CHAPTER IV
THE YONGNAM-RO IN THE YI DYNASTY

Introduction

Historic events at the turn of the fourteenth century provide the background of the new communication system of the Yi Dynasty. Some military historians describe the Koryo as a period of organization and the Yi Dynasty as the period of consolidation of the communication system (Military Academy of Korea: 1968, pp. 536-40). Understanding of the importance of the Yi Dynasty for the Korean communication system can be gained by studying historic events and philosophical changes. While the former, including the transfer of the capital city and the reorganization of the government, are generally known, the importance of resurgent Confucianism is often unduly neglected.

Changes in the public philosophy had previously affected the development of communication systems. In the case of the Yongnam-ro, the new theories of the Yi Dynasty held crucial importance. The establishment of that Dynasty was a turning point in Korean history. It brought about the change from the Buddhist Koryo society to a Neo-Confucian, and it brought about the sweeping Sinicizing movement. With all of that came a historic turnabout, not only in political philosophy, but in social and cultural aspects of life.

Although this change in official doctrine was
initiated by a small group of Confucian scholars, it gradually altered the spiritual structure of the Korean people and turned the country into a "Little China." Such changes in policy orientation need not have a permanent effect. During the first half of the Yi Dynasty Confucian scholars indiscriminately adopted the Chinese system. They could not believe that valuable results could be obtained from any other sources than Confucian learning and china. Very few economic, social, and technical innovations were brought about from 1392 to 1592, except during the reign of King Sejong. In the late sixteenth century, the filial relationship between the royal court and the commoners began to collapse because of poor administration. National defense and communication systems also became neglected. The Confucian scholar-officials' misjudgement opened the doors to Japanese invasions in 1592 and Manchu invasions in 1638, resulting in one of the most disgraceful periods in the history of Korea. The country was devastated; the population decreased drastically.

During the seventeenth and eighteenth centuries, European culture started to penetrate the country through the Korean envoys to Peking. This new cultural interaction with the West brought the rise of a new school of thinking, the Sirhak (School of Practical Learning). The Sirhak scholars opposing the theoretical emphasis of Confucian bureaucrats, advocated a practical, empirical approach in government and learning. They were not able to eliminate...
the strong Confucian tradition that had for three hundred years permeated Yi society. They did, however, bring about changes in official doctrine that should not be overlooked. Some of the Sirhak scholars pioneered social, cultural, and economic reforms during the Yong-Chong Era (1724-1800).

The consolidation of the communication system was one of the major projects carried out by the Yi Government. Begun in the early Yi Dynasty, it was completed in 1535. During that period, the roads, postal stations, and postal districts were reorganized. The Sirhak scholars' theory of state was strongly reflected in the reconstruction project.

The Materialization of the Yongnam-ro

Although General Yi's usurpation of the throne was strongly supported by the Confucian scholars, he had no political base, in either the capital city or the provinces. The centralization of royal power became the most pressing objective of the new monarch, General Yi, whose posthumous title would be King Taejo, enacted several policies to create a presence of the new government.

His major projects included the formulation of state policy, the reorganization of bureaucracy, the transfer of the capital city, population census, harnessing the power of local noble, land reforms and the establishment of legal system, as well as the reorganization of the communication system. Such a reorganization included among other things the revamping of the postal system (Wu-Yok), that of the
transport of tax-grain (Cho-un). The transfer of the royal capital from Songo to Hanyang (now Seoul) marked the start of the reorganization.

Social and political reform in the early Yi Dynasty was based on the doctrine of the new government. King Taejo's doctrine had three major principles: Agriculture as the main economic goal, observance of Confucianism and repression of Buddhism, and respect for China and interrelation with neighboring countries. These tenets became the principles of the administration, the economy, and the social and cultural reforms of the Yi Dynasty.

The policy of putting agriculture first was implemented during the reign of King Kongyang, the last of the Koryo Dynasty. The Confucian scholar-officials, a group of rising aristocrats under the direction of General Yi, set the land register on fire in order to weaken the material power base of the old nobility. By the end of the Koryo Dynasty, some royal family members, important members of the bureaucracy, retired officials, many Buddhist monks, and local nobles held large estates with large numbers of slaves and tenant farmers. The growth of these private estates and of the number of serfs created serious difficulties at the time.

First, those private lands were tax-free, and their work forces were also exempt from tax and corvee. The growth of these estates decreased the amount of taxable lands and the number of tax-payers, resulting in
instability in state finances.

Second, discord developed within the ranks of govern­ment officials. The rising Confucian scholar-officials did not have private estates, and the government could not pay them well enough. Most of them insisted that the vast estates held by the upper class and the temple properties be divided among all officials. The external and internal disturbances following the Mongol invasions ruined the peasant society. Some farmers and lower ranked servicemen, including postmen, gave up their lands and positions. Others were compelled by estate owners to become slaves. The emancipation of these people became one of the important goals of the Yi Court. The government emancipated them by changing their social status from slave to freeman and offering them land-grants. In return, the newly emancipated freemen were required to settle on state­lands. By doing this, the government acquired both revenue and man-power.

In the Yi Dynasty, the lowest limit of administrative social class was that of commoner who had the obligation of taxation, military service, and corvee. Lower still were those with no right of participation; these outcasts included butchers, entertainers, slaves, and shamans. These were exempt from taxes and corvee, but could not receive land grants. During the dynastic zenith, the government made its effort to protect the commoners from violation by the local landlords because the commens
contributed state revenue and man-power. Under maladministration, a number of commoners underwent hardship due to the heavy burden of taxes, the oppressive government by corrupt officials, and social turmoil. Many commoners lost their lands. Some of them became slaves of landlords or engaged in such humble occupations as butcher and potter. In other words, poor administration often resulted in decrease of the commoners.

General Yi's Confucian Reforms

Regalism was to be accomplished by concentrating power in the hands of a single ruler and by the adoption of political institutions linked to a strong centralized control (de Bary: 1960, p. 122). Ever since Wang Kon, the founder of the Koryo Dynasty, had adopted Buddhism as the state religion, Buddhism had become a source of trouble in regal power. While professing a firm support of Confucian ideals, King Taejo of the Yi Dynasty in fact practised regal power through governmental control of man-power and property and by commercial speculation in salt, exotic goods, and others. He, however, did follow Confucian doctrine, in a sense, by oppressing Buddhists. The divinity of Buddha was challenged by Confucianists, and the scholar-officials strove to put into practice the Confucian ideal of benevolent paternalism, i.e., Oriental Despotism.

The filial relationship between the ruler of the royal court and the commoners of the country reflected
Confucianism as a political ideology. Local government officials appointed from the ranks of Confucian scholars acted as agents of the royal order. They played the roles of educators, promoters of agriculture, tax collectors, judges, and sometimes of military leaders. This patriarchal structure of government helped development of centralized administrative power.

For administrative purposes, the kingdom was divided into eight Provinces (do), each with a provincial governor (Kamsa) who combined the duties of administrator, censor, and military governor. Under the provinces were the prefectures and the counties.

Despite the origin partly in the previous misuse of the poor, the Yi Dynasty grew at the expense of its peasants. Much of the taxes and rents levied upon them were in fact spent in towns, which served as garrisons, administrative centers, and natural economic centers. The towns became the foci of noble power.

The main royal highways linked the capital city with the provincial capitals and other important cities. The East Asian relationship between the administrative towns and the communication networks served to enhance central power (Wittfogel: 1965, p. 54):

Effective government control involves first the political and fiscal superiority of the directing agency and second the means for conveying commands and commanders to the subcenters of control. The desire to exert power through the control of communication characterizes all political hierarchies. . . .
In the early Yi Dynasty, the Court favored the road between Seoul and the Yongnam region because they reorganized its economic and administrative importance. They knew the Yongman region to be the main center of natural resources and the nursery of great men. To be sure, some of the Confucian scholars who supported King Taejo's reforms hailed from that area, and Yongnam's tradition of training the elite continued.

The Yi Capital and its Royal Routes

The transfer of the royal capital from Songdo to Hanyang held an important theoretical and historical portent. Many motives may have underlain the transfer of the capital from the site of Songdo, the seat of the regime that General Yi had overthrown. Not the least of motives lay in certain advantages for a courier system centered on Hanyang.

The "great capital," or imperial city, is the headquarter of a great and expanding power (Cornish: 1923, p. vii). Comparison of the capitals of the Koryo and Yi dynasties reveals sharp differences between the two. Northward expansion had been the most important policy of the Koryo Kingdom. After many years of struggle, Koryo kings expelled the Mongol officials from the northern territories that had come under the direct control of the Yuan Dynasty and attacked southern Manchuria in the late fourteenth century (Yi Pyeong-do: 1977, p. 663).
Songdo (now Kaesong) occupied something of a forward position. On high ground overlooking the plain of the Yesong and Imjin rivers, it had the crests of the Songak Mountain at its rear, to the south, and beyond this low range lay the Kanghwa Island and the lower Han Basin. Thus did Songdo occupy a classic forward capital site: on the edge of the productive lands of the chief group who supported the central government and on the side toward the greatest threat. As the Mongol-Chinese invaders were driven northward, Sogyong (now Pyongyang) or even Liaotung became the most advantageous site for the capital of Korean Empire on the march. While the government did place important forward elements at Sogyong, they did not press the issue by moving the court to that new forward location and lost—perhaps for that reason—the initiative and the intimate contact with the active front of military advance. Soon, General Yi Songgye would pull back from the Yalu River and turn on the increasingly timid capital at Songdo.

In addition to the no doubt stiffening resistance of the Chinese and Mongols, the burgeoning Korean imperium faced three more difficulties as regards imperial growth. The farther north they marched, the wider became their frontier. From a peninsula width of 1810 kilometers at Songdo to an expanse of 600 kilometers along the Yalu-Tumen Frontier. An ever widening effect in an ever less habitable terrain dissipated the remaining energy of the Koryo Dynasty.
At the same time that the Koryo offensive moved northward, the leadership faced—whether or not they knew it—another constraint imposed by the Korean Peninsula itself. Whereas great capitals normally add their greatest territorial gains on the side way from the greatest threat, that is, to the rear (Cornish: 1923, p. 64). Koryo was gaining new territory in its front, along its line of march. Expansion to the rear was not possible. By occupying a peninsula, the Korean government, then as now, faced a sharply circumscribed imperial potential. The principal lines of potential development lay in consolidation of the Taedong, Yesong, upper Han, and Naktong basins and the conquest of the southwestern region and its Honam Plain, capital at Chonju, the seat of Late Paekje.

To the south, across the Korean Strait, lay Kyushu, the most aggressive part of Japan, and Kyushu's forward outpost, Tsushima Islands, which served as the staging area for Japanese pirates. In addition, then, to the 600 kilometer northern land frontier, the Korean government faced a sea frontier 800 kilometer of which much of the south and west was ready prey to the sea-folk of Kyushu. In a real sense, Yi Korea had inherited two fronts, one of the north and one of the south. In such a situation, the midpoint seemed most promising to the planners of the Yi Dynasty.

Korea is a branch of East Asia. It is by geographic
fortuity positioned between Mukden in Manchuria and Fukuoka in Kyushu. A straight line from Fukuoka to Mukden (approximately N 63 W) passes through or near Pusan, Taegu, Snagju, Chungju, Seoul, Kaesong, Pyongyang, Anju, and Uiju and thus through all of the fertile lowland basins of Korea except the Kum Basin. Korea is thus impaled on its two neighbors, obvious route to empire. The Yongnam-ro occupies the southeast end of this skewer; Seoul, the enter (Fig. 11).

As soon as King Taejo founded the Yi Dynasty, he stated his intention to transfer his capital from Songdo to Hanyang (Seoul). "Because we have established a new state, we need a new capital to give a new mind to the people and to build a new spirit for the new state" (King Sejong Memorial Society: 1970, p. 28). The transfer was completed in 1405 during the reign of King Taejong. Hanyang then became the political, economic, and cultural focus of the state. It meant the return to the Han Basin as state focus, as had been the case before the Koguryo troops had conquered the Paekje capital.

From one point of view, that of a state faced with internal difficulties, a capital is that of a communication center that can control the whole nation (Wolfe: 1962, p. 28). To a regime faced with consolidation of the peninsula, while opposing two foes threatening from opposite directions, Hanyang in the lower Han Basin offered strategic advantage than Songdo. The Han River has long served as
Fig. 11. Hypothetical communication axis of the Korean Peninsula.
a main artery for Korea. Its drainage area covers most of the central part of Korea. It facilitated the unification of Korea. After the transfer of the royal capital. The Han River, the mainstreet of Korea, carried the tax-grain and other goods to the royal court and also carried the harvests to markets. The location of Hanyang was the ideal site for the bureaucratic Yi government as it turn inward.

Hanyang was the post for ocean-going junks transporting tax grain from the southern and western plains. The city also occupied the first good crossing point on the Han River. At Hanyang, the principal land artery of the Peninsula crossed the main inland water route. Ships came in during the rising tide and anchored there. Several tributaries of the Han River were also used by river junks to transport grain, firewood, lumber, and other commodities from the inland areas to Hanyang. They returned upstream carrying salt, fish, and other marine products, as well as manufacturing goods. King Taejo and his officials grasped the importance of this Han River crossing.

The consolitation of communication network was completed forming an X-shape pattern focusing on Seoul, which now had connections with the termini of the four main highways: Uiju of the So-ro (Northwestern Road), Pusan of the Yangnam-ro, Sosura of the Puk-ro (North Road), and Kangjin of the Samnam-ro (Fig. 12). The Puk-ro and the Samnam-ro were relatively less important than those of the
Fig. 12. Postal system of the Yi Dynasty, 18th century.
Uiju-ro and Yongnam-ro, but the Confucian scholar officials honored them. Hamhung, the provincial capital of Hamgil-do in the northeastern region, was the birthplace of King Taejo, and Chonju, the provincial capital of Cholla-do, was the origin of the royal Yi clan.

The foreign policy of the Confucian government resulted in the establishment of overland routes from Seoul to Uiju on the Yalu and from Seoul to Pusan. Envoys to China used Uiju, while envoys to Japan exited through Pusan. The successful establishment of the Yi Dynasty under kings, Taejo, Taejong, and Sejong depended on overcoming the Japanese pirates and on adopting wise diplomatic policies. The early kings of the Yi Dynasty tried to put an end to the piracy with the cooperation of the Japanese government and by offering liberal terms to the pirates, including supplying them with the grain that they sought by their raids. The Korean government finally realized, however, that the Japanese was in no position to help them; Japan was undergoing a period of strife and disunity that was to last until reunification under the new Ashikaga Shogunate in 1392 (So: 1975, p. 3). The Japanese were in such a state of internal turmoil that eradicating piracy did not figure among their priorities.

In the late Koryo, strong fortresses and military stations had been built and garrisoned with troops. Beacon-fire signal stations had been rebuilt and could warn the fortresses and garrison of the approach of Japanese
pirates. During the early Yi Dynasty the Korean navy was particularly strong. Several naval bases, established on the southern and western seabords, greatly contributed to protecting the coastal settlements from Japanese attacks.

King Sejong tried to follow a concilatory policy. The Korean government established trade treaties with very liberal terms to appease the pirate leaders. Later with the cooperation of the Japanese government who had overcome internal strife, the diplomatic effort finally produced the expected results (Yi Sang-baek: 1977, pp. 139-40). Pirate raids gradually decreased along Korean coasts, but unfortunately they seemed to increase proportionally on the coast of China (So: 1975, p. 4).

The appeasement policy began during the reign of King Taejong (1400-1418). The Korean government exchanged regular envoys with the Ashikaga shogun's court and made direct contact with pirate leaders. Pirate chiefs who submitted to the Korean court were given official posts and trading privileges. In the early fifteenth century, Pusan-p'o at Tongnae (now Pusan) and Naip'o at Ungchon (near present Masan) were opened to them. Japanese captains were required to carry passports endorsed by their feudal lords, and the number of their ships became strictly limited by the Korean government (Yi Sang-baek: 1977, pp. 139-40). This appeasement policy was temporarily suspended in 1419 during the punitive Tsushima Expedition against the immemorial pirate haven in the Korea Strait.
An additional port, Yompo of Ulsan County was opened to the Japanese trader, and they were authorized in 1427 to establish permanent offices in the three ports (Yi Sang-baek: 1977, pp. 139-40). King Sejong limited the number of landings of Japanese ships to fifty a year. Each of them was supplied with one thousand bushels of rice (Han: 1974, p. 225). In other words, about 50,000 bushels of rice a year were exported to Japan on a sale subsidized in the interest of peace.

For the Korean government, trading with Japan was a royal gesture toward Japanese feudal lords. It meant three things: following a good neighbor policy, collecting tributes, and pursuing commerce (Kim Pyong-ha: 1969, p. 2). In return, the government expected neighborly amity and the allegiance of the Japanese lords. Japanese traders brought such exotic goods as sulphur, cooper, lead, dye stuffs, aromatics, sugar, chemicals, ivory, black pepper, citrus fruit, monkeys, and swords. These traded them for rice, beans, flour, wine, tea, medicine, cotton cloth, silk, ramie cloth, books, horses, Buddhist manuscripts, porcelain ware, stationery goods, and other craft items (Kim Pyong-ha: 1963, p. 31).

When Japanese ships anchored at one of the three ports, their passports and seals were checked, and they were classified as Shogun's envoys, feudal envoys, or merchants. King Sejong designated specific routes for the use of Japanese envoys. These routes continued in force...
until the Japanese invasion of Korea in 1592 (Fig. 13).

The Jwa-ro (Left Route) ran from Ulsan (Yompo) to Seoul, going through Kyongju, Yongchon, Uihung, Uisong, Andong, Yongju, Punggi, Danyang, Hwanggang, Chungju, Kahung, Yoju, and Yanggun.

The Chung-ro (Central Route) ran from Tongnae (Pusan-po) to Seoul, going through Yangsan, Hwangsan, Miryang, Chongdo, Kyongsan, Taegu, Chilgok, Indong, Haepyong, Sonsan, Sangju, Yugok, Mun'gyong, Yonpung, Gwesan, Umsong, Umjuk, Ichon, and Kwangju.

The Wu-ro (Right Route) ran from Ungchon (Naei-po) to Seoul through Kimhae, Hyonpung, Songju, Kumsan, Chupung, Hwanggan, Yongdong, Okchon, Chongju, Jincho, Juksan, and Yangjae.

The river route to Modupo (Seoul) ran through Pusan, Gamdong-po, Susan, Kaesan, Ssangsan, Dongwon, Palgo, Wolpajong, and Naktong with a connection to the overland route going through Danwol, Kumchon, Kahung, Hungwon, Ipo, Daetan, and Pong'an (Daedong Yoji Do; Kyong-song Fu: 1936, p. 1092).

The inland navigation routes of the Han and Naktong rivers were open to the transport of Japanese cargos. Many of the river ports had accommodations, facilities, and warehouses for the Japanese envoys. None of the former river ports remains in use today. Without relic names the river port settlements and the historic roadways, they could not now be identified. The settlement pattern has
Fig. 13. Japanese envoy routes to Seoul, 16th century.
also changed from urban type on a flood plain to a rural type on river terraces or in the fields.

The opening of these official three ports to the Japanese traders stimulated commercial activity in the coastal region and in the Naktong Valley. The old river ports from the estuary of the Naktong River (Buram-jin, Dongwon-jin, Oegwan, Samun-jin, Mugye-jin, Dongan-jin, Yochani-jin and Naktong-jin) became regular stops for both Korean and Japanese traders. This route also functioned as trade route to Korean markets long after the Japanese invasion of 1592. Even as late as 1980, old residents of Naktong, Oegwan, Samun-jin, Samnang-jin and Dongwon-jin recalled the trading activities between inland traders and merchants from the southern coast.

Military preparedness was necessary around the Sampo (Three Ports) because even after the opening of these ports to them, Japanese pirates still on occasion raided small settlements. Army barracks were established in Kyongju (moved to Ulsan in 1417) and at Koje (moved to Kosong after 1592) (Yi Sang-baek: 1977, pp. 240-1). These military posts gave additional importance to the Yongnam region. Several army and navy bases were concentrated around Pusan. The Yi government considered Pusan an important strategic point because it was the city closest to Tsushima, the advance base for Japanese piracy and for the Hideyoshi Invasion of 1592, and because it was a good harbor. After 1592, military institution were increased and reinforced.
Pusan thus became the official destination of the Yongnam-ro in the early Yi Dynasty (Fig. 14).

Organization of the Yongnam-ro

As an area where the political power of a state is concentrated, a national capital requires the means to make its influence felt in other parts of the state. It needs a well-developed communication net-work (Weigert: 1957 p. 157). Like other despotic monarchies, the Yi Dynasty bulwarked its power with elaborate postal and intelligence systems.

The adoption of Confucianism and the repression of Buddhism were clearly reflected in the Yi society. As a state religion in the Koryo Dynasty, Buddhism and produced adverse results, as overparticipation in politics, speculative accumulation of wealth, and increases in slave-holding. Not to be overlooked, however, even some beneficial effects on the development of art and science, social welfare, and other matters. The temples, however, became the first targets of Confucian reformers. First, most temples were shut down; all their properties, including estates and salt pans, were confiscated; their slaves were emancipated; and the monks were excluded from political power. The monks were asked or forced to retire from the priesthood. Many of them became managers of public inns during the early Yi Dynasty (Choi Jae-gyong: 1975, p. 41).
Fig. 14. Military institutions in the Pusan Metropolitan Area, 18th century.
Although the change of official philosophy from Buddhism to Confucianism promoted the establishment of a solid bureaucratic government, it did not promote progress in either commercial or social development. Although road construction, both in the West and in the East, was often initiated by military engineers, the roads were used by merchants, pilgrims, and other travellers. In Korea, the maintenance work on the roads and the help to travellers had traditionally been done by the religious institutions. In medieval Europe the Church established mansions along the pilgrimage roads (Casson: 1964, p. 301). In Korea, the Buddhist temples of Koryo built wons (hospices) and other types of rest areas along the highway. After the Confucian reform, most of the wons were expropriated, and ex-monks were appointed as managers. The roadside institutions and the roads themselves came under the direct control of the central government. It was apparently a very good system, but government control became ineffective during times of poor administration; both institutions and roads sometimes suffered badly. Commercial activities, religious pilgrimages, and tourism were considered improper by the Confucians. Under such restrictions, few people volunteered to replace the Buddhist monks in road maintenance.

The Korean postal system, known as Wu-Yok or Yok-cham, served simultaneously as a communication network as an essential part of the transportation system of the
successive governments of Korea since the Three-Kingdoms period (ca. 50 B.C. to ca. A.D. 670). Communication was actually the synonym of transportation in the Yi Dynasty. The basic structure of the postal system began to emerge shortly after the founding of that Dynasty, reaching completion in 1535. It was to last until 1910. The reconstruction and modifications were done in four periods: 1392-1491; 1492-1598, 1599-1723, and 1724-1910.

Early during the Yi Dynasty, the government followed the Koryo system. The foundation of the new postal system then followed such publications as Sejong Silok Chiriji (Sejong Veritable Records Gazetteer) and Kyongguk Daejon (Fundamental Statutes for Governing the Country). In the early periods, the government appointed petty officials known as Yoksung ranked as 9b (lowest grade officials) as supervisors of postal districts that included up to 20 stations. In spite of their important duty, their status was insignificant in the Confucian bureaucratic society. Most of the Yoksung came from among commoner clans. Hence, when local governors or military officers broke some regulations or made unreasonable demands, the petty officials could not control them (Sejong Silok, vol. 109, 29:7, Sejo Silok, vol. 8, 3:7, Chungjong Silok, vol. 11, 5:7).

To understand the management of the communication system, one needs to know the administrative organs of the Yi government. The central government of the Yi Court
consisted of six ministries. These were the Ibu (Ministry of Personnel), Hobu (Ministry of Revenue), Yebo (Ministry of Rites), Pyong-bu (Ministry of War), Hyongbu (Ministry of Justice), and Kongbu (Ministry of Works). Each ministry was controlled by one minister whose rank was 2a. Under the ministries were several lower level offices.

The Ministry of War had responsibility for the managing the postal system, military register and weapons, but the chalbang (Postal District Supervisor) was appointed by the Ministry of Personnel, and the management of postal lands was under the direction of the Ministry of Revenue. In addition, the maintenance of roads, bridges, and ferries was under the Ministry of Works.

The Yi government adopted the Chinese censorial surveillance system as of 1402 (Taejong Silok, vol. 3. 2:2; Sejong Silok, vol. 57, 14:7) to protect the post stations and postmen from unreasonable requests from government officials. Such surveillance was provided by the Investigation Censors. In Ming China, Investigating Censors were to a large measure independent agents, reporting directly to the Emperor and under his direct supervision (Hucker: 1958, p. 50).

Seven Investigating Censors, known as Chong Yok Chalbang, were appointed by the king and dispatched through the whole country. They were selected among reputable higher officials of the central government and received both regular and special commissions, entrusting them with
specific geographic or functional jurisdictions. The most important post was that of Regional Inspector. Each inspector visited every locality in his jurisdiction, incognito and without prior warning. He inspected all local government officials, accepted petitions from the people, and advised local authorities. He could impeach anyone, and he freely submitted to the king proposals for new governmental policies. He engaged in joint deliberations with Provincial Governor in his jurisdiction. Inspecting postal routes was one of the most important duties (Ministry of Communication: 1970, p. 47). There were two censorial jurisdictions in the northern part of the Yangnam-ro zone. The Kyonggi Jwado Chongyok Chalbang inspected the districts of Yangjae, Kyong'an, and Pyonggu, and the Han River Route. The Kyonggi Chungchong Udo Chongyok Chalbang inspected the districts of Yonwon, Yulbong, and Hwanggang (Sejo Silok, vol. 9, 3:9, Kyeyu).

In the rank system of the Yi Dynasty, civil service officials were classified into nine grades with two subgroups (a and b) each. The ranks thus ranged from 1a at the top to 9b at the bottom. Civil service officials consisted only one element of the vast bureaucracy administering the Yi Dynasty. They were all executive officials. Under them was a large number of subordinates, called "lesser functionaries," who did not have civil service ranks.

In the early Yi Dynasty, the government opened the
qualifying examination for Civil Service ranking to lesser functionaries with more than ten years of service. Whoever passed the examination received the rank of 9b and could be appointed as supervisor of a postal district ( Yöksung) or a ferry ( Tosung). Such a civil servant had a fifteen month tenure and was then expected to retire. Because of their lower social background and official rank, postal supervisors had many problems controlling post stations and roads in their jurisdictions. They lacked prestige, and their authority was questioned. Consequently, the government decided to raise their civil service status during the reigns of King Songjong and King Chungjong (1472 to 1535) ( Songjong Silok, vol. 27, 18:9, Kyongsul; Chungjong Silok, vol. 29, 30:6, Kyong'in).

When a noble passed the civil service examination, his rank started at 6b, and he was appointed to the magistrate of a small county. In the new system, the official rank of supervisor of postal district was also 6b, but his titular rank ( Tonghun Daebu) was legally higher than that of a magistrate ( Songjong Silok, vol. 27, 18:9, Kyongsul), even though he received no salaries ( Kyongguk Daejon, Ijon, Oegwanjik). He only had up to a few thousand postmen under his control. His jurisdiction was limited to the stations. Because of his nominal position, they were not respected by scholar-officials. Contrary to the government's original expectations, the postal system of the Yi Dynasty had begun to turn to chaos by the middle of the Dynasty.
During the Japanese invasion of 1592 to 1598, the postal system completely collapsed. The stations were destroyed, and their settlers scattered. The post lands, which were the financial basis of the postal system, were reduced by the encroachment of the nobles. During the Yong-Chong Era (1724-1800), the government officials devoted much of their energy to the reconstruction of the kingdom including the reinforcement of the postal system.

The important projects for the refurbishing of the postal system were the application of the Investigating Censor system, or Amhaeng osa, the improvement of the positions of chalbang and postman, the reorganization of postal routes, and the strengthening of the financial basis of the stations. Investigating Censors began to patrol their jurisdiction during the reign of King Yongjo (1724-76). They investigated the living conditions of commoners. They had the power to prosecute incompetent governors of counties (Yongjo Silok, vol. 51 16:4). The censors used the postman as escorts for protection when they needed to face local magistrates to reprimand them. (Mr. Lee at the Yogok station witnessed royal censors fulfilling their duties meticulously [Lee Han-gyu [76]: 1974, personal interview]). Among the twenty stone monuments erected in honor of good administrators of the Yugok district, the two largest ones eulogize Pak Mun-su, the legendary censor who served as the Minister of Revenue in the reign of King Yongjo (Fig. 15).
Fig. 15. Stone monument eulogizing the Royal Investigating Censor Pak, by postmen of Yugok Station, 18th century.
The improvement of the postal system accompanied the reconstruction of the kingdom after the Japanese and Manchu invasions. Although it started during the second half of the seventeenth century, it was only completed during the Yong-Chong Era 1724–1800).

After the Japanese invasion, the stations along the Yongnam-ro were abandoned because the main units of the Japanese forces had marched through them. Buildings had been destroyed, postmen killed, and agricultural lands abandoned (Sonjo Silok, vol. 56, 27:10, Sinyu):

The Yongnam-ro south of the Han River is thick with reeds and weeds and few people are to be found. A number of highway men haunt the area. . .Please build a palisade around the Yangjae station. Reestablish a garrison farm, and labor for the protection of the station and the farmlands against the plundering of bandits [the King approved that project]. . .Kim Susan built a palisade around the Yangjae station, called back the postmen who had scattered during the war and started to cultivate the land with eight additional people the next year.

The reconstruction of the main highways of Korea was urgent, but it could not be accomplished without first reforming the administrative system. Kings Yongjo and Chongjo put such a plan into effect. The government first classified the postal districts into three categories according to their importance: Kyom Chalbang-do, Chamsang Chalbang-do, and Chamba Chalbang-do.

The government appointed court officials close to the king as supervisors of Kyom Chalbang-do and bestowed on them considerable power. A Kyom Chalbang had a rank of 6b. His titular rank was Tonghun Daebu belonging to the Cham
Sang-kwan (staff officials in the royal court). He was privileged by the royal court. The government treated him as special royal envoy while he travelled and he was honored above county magistrates (Kwan So Yokji, Ochondoji). He also had the authority of reporting directly about offenders in his jurisdiction even when they were higher officials. Not only was the Kyom Chalbang not under the provincial governor's control, but he could be promoted to a higher-ranked office at the end of his tenure (Daejon Tongpyon, Ijon, Jesu).

This policy had a beneficial effect on the reconstruction of the communication network. Despite the fact that their positions were stipendless, Kyom Chalbang willingly contributed to such a project because they were in turn honored by the court and the people and because good careers would be subsequently open to them. They gathered the scatterd postmen and protected the stations and humble postal workers from the encroachment of the local nobles or government officials on their lands.

Three of the eleven Kyom Chalbang districts were established along the Yongnam-ro. Many stone monuments, such as the ones at the Yugok station were dedicated by local people to meritorious Kyom chalbang.

Postal Districts and Stations

The stations of the Yongnam-ro were theoretically to be located exactly at twelve kilometer intervals, but
because of the difficulty of travel in the mountainous regions and the requirement of placing a station on each side of each river crossing, the distance between stations was irregular. In rugged areas, for example, the average interval was about eight kilometers (Sejong Silok, vol. 93, 23:9, Kyesa; Ban'gye Surok, Pyongje Hurok, Wuyok).

The terms post or postal service express the fact that men are "posted" at intervals along a road; relay system refers to the regulated interaction between the people so posted (Wittfogel: 19963, p. 55). The Korean term Yok was equivalent to post, but at the time, those were not regularly spaced stations.

In the early Yi Dynasty, the government divided the nation into 44 postal districts. Decreased to 40 in the reign of King Sonjong, these districts remained in service until 1910. A province included several postal districts but postal districts themselves cut through county lines. The Kyongsang province comprised the largest number of districts, eleven of them. The provinces of Kyonggi, Chungchong, and Cholla each had six. A postal district covered from three to ten partial or whole counties. The lands and people of postal districts, however, did not fall under the jurisdiction of the Chalbang, who was merely a highway superintendent, but under that of the governor of the county. He had under his jurisdiction up to twenty stations located in various counties.

The Yongnam-ro from Seoul to Pusan passed through six
different postal districts: The Yangjae-do, Yonwon-do, Yugok-do, Kimchon-do, Songhyon-do, and Hwangsan-do. Yangjae-do and Yugok-do were the most important and largest districts on the Yongnam-ro. Postal districts boundaries were changed a few times. In 1461, for example, the twenty-three stations in the Kyonggi province around Hanyang were under the control of the Chong Yok Chalbang of Kyonggi Jwado (western part of Kyonggi-do). The Yongnam-ro zone in the Chungchong province was under the control of the Udo Chalbang of Kyonggi Chungchong. Yugok-do was annexed to Jangsu-do and Hwangsan-do and Songhyon-do were merged (Table 6).

The boundaries of postal districts were first defined after the completion of Kyong-guk Daejon (Fundamental Statues for Governing the Country) in the fifteen century. In other words, the Yongnam-ro was officially established after completion of the legal code.

When the government reconstructed the postal system in the eighteenth century, the boundaries of the postal districts along the Yongnam-ro were reorganized. The Yangjae station was closed, and Yongwha and Gwachon were established. The Yugok and Kimchon districts lost one station each and four stations of the Songhyon district were transferred to the Hwangsan district. The most important changes in this project were the transfer of the Chalbang station of the Yangjae district, and the reorganization of the Hwangsan district.
Table 6. Itinerary of the Yongnam-jo

<table>
<thead>
<tr>
<th>Fifteenth Century</th>
<th>Eighteenth Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seoul (Changpa)</td>
<td>Seoul (Changpa)</td>
</tr>
<tr>
<td>YANGJAE DISTRICT</td>
<td>YANGJAE DISTRICT</td>
</tr>
<tr>
<td>YANGJAE-MKSAENG-KIUMHONG-WACHAN-BUNHAENG-MUGUK</td>
<td>YANGJAE-MKSAENG-KIUMHONG-WACHAN-BUNHAENG-MUGUK</td>
</tr>
<tr>
<td>DOKTONG-NAWON</td>
<td>DOKTONG-NAWON</td>
</tr>
<tr>
<td>DOKTONG-YOHNYANG-SANGNIM</td>
<td>DOKTONG-YOHNYANG-SANGNIM</td>
</tr>
<tr>
<td>HWANGSAN DISTRICT</td>
<td>HWANGSAN DISTRICT</td>
</tr>
<tr>
<td>HWANGSAN-YONGGA-KINDONG-MURELI-HWANGSAN-YUNSAN</td>
<td>HWANGSAN-YONGGA-KINDONG-MURELI-HWANGSAN-YUNSAN</td>
</tr>
<tr>
<td>ANBO</td>
<td>ANBO</td>
</tr>
<tr>
<td>KIMCHON D.</td>
<td>KIMCHON D.</td>
</tr>
<tr>
<td>GOPYONG</td>
<td>GOPYONG</td>
</tr>
</tbody>
</table>

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The government moved the Chalbang office from Yangjae to near the north gate of Suwon, which then became the official station of the former district of Yangjae (Chonjo Silok, vol. 25 20:9). Hwasong Songyok Uigwe remarks:

The Yongwha station was established one ri [about 400m] east of the north gate of Suwon castle. There was originally no post station on the Hwasong Chik-ro [straight road to Suwon]. Then in 1792, the Yangjae station in the Kyonggi province was transferred to an uninhabited area near the Chang'an-mun [North Gate] that was surrounded by high hills. People and horses moved into this new station, and the Chalbang also moved there in the spring of 1793, and the district name was changed from Yanjae to Yonghwa. Station houses, the main office, and the main gate of the station were built. The government office and the official residence (52 kan 1872 sq. feet) were completed in a few months. Consequently, a village similar to a small county seat was developed. The government appointed the chief as Chalbang and scout officer.... (Hwasong Songyok Uigwe, Appendix I; post station).

The transfer of Yangjae to the Yonghwa station was related to the new town project of King Chongjo (1776-1800). In 1789, the king removed his father's tomb from Yangju to a site east of old Suwon, judged ideal by geomancers. He then had a castle built near that town. The new settlement was renamed Suwon, and after the inhabitants of old Suwon moved into the new town, the old settlement became relict. The project, which lasted from 1793 to 1795, was one of the monumental tasks of the Sirhak school. It was planned by the scholar-officials and reflected their knowledge and technology (Choi Young-joon: 1979, p. 115). The area of this castle was only about 1.3 square kilometers (Son...
Jongmok: 1977, p. 446), but it became an important administrative, commercial, and communication center in the southern section of the Han Valley. The relict post village of the Yonghwa station is now overlaid by modern Suwon. According to local testimonies at Yonghwa-dong of Suwon, the station was about five hundred meters away from the main highway. It was destroyed by the Japanese in 1910 when they took over the post-lands (Pak Jae-Son [82 years old]: 1977; personal interview).

The reconstruction of the Hwangsan district started during the reign of King Chongjo. The Annals of King Chongjo recount the decline of Hwangsan-do and why it was reconstructed (Chongjo Silok, vol. 24, 11:10, Kap'o):

Most of the stations in the realm declined, but those in the Yongnam-ro suffered the hardest blow. Judging from my investigations, this resulted mostly from the location of Chalbang station and the transfer of Woekwan. When the postal stations were initiated the number of households and the amount of land given by the government were proportional to the traffic handled by the stations. The busiest stations were granted 2,000 kyol of land. Hwangsan was only granted 1,210 kyol because it was not very busy. After the transfer of Woekwan from Ungchon, Hwangsan became much busier but could not prosper because of insufficient lands and households to handle the envoys. According to the Hwangsan residents, the problem started after the Japanese settlements moved to Pusan [after the closing of the two other ports in 1539 for- merly opened to them]. Since then, Hwangsan has become very busy serving Japanese envoys. This station is now indispensable, but in serious condition. Please provide more households and lands or supplement it with stations from other neighboring districts. And please demote the Chalbang to Chamha (lower than 7a) because the receptions and farewell parties for the envoys cost too much." Thereupon Hwangsan became a
Chamha station for a while... And its land grant was increased.

The Hwangsan district, covering the lower Naktong Basin was the main point of entrance from Japan. In the early Yi Dynasty, many Japanese envoys landed at Pusan and travelled through the stations of Sosan, Hyusan, and Hwangsan, among others, to Seoul. And large numbers of Korean envoys on horseback—three hundred to five hundred of them—travelled through this road. Providing service and accommodations for them was a heavy burden on the stations.

During the Japanese invasion, this postal district was severely devastated, once again by passage of the major units of the Japanese invaders. Hwangsan, on the levee of the Naktong River suffered particularly. The Japanese, remaining in hiding nearby that station to avoid a Korean ambush at the Jakchon Pass, went through the town and destroyed it before resuming their march (Milju Jingsin-rok: 1910s, Gyotong [transportation]; Map of Miryang Country).

The Yongnam-ro traversed the valleys of Tan-chon, Chongmi-chon, and Dal-chon in the Han Basin, crossed the Saejae Pass and passed through the upper Naktong River, the Kumbo River, the Songhyon and Jakwon passes and let to Pusan. From Donwha-mun, the Gate of Changdok Palace in Seoul and the starting point off the royal roads, to its destination, the Yongnam-ro extended about 960 ri (about 384 km. or 240 miles). Twenty nine roads branched off from
the main trunk, making a total of about 740 kilometers of road (Fig. 16). Along the way, smaller streams were bridged, and larger rivers, such as the Han-gang, Dal-chon, and Naktong-gang, were crossed by ferries.

The construction of Joryong-gwan at the Saejae Pass was crucial for the itinerary of the Yongnam-ro (Sonjo Silok, vol. 39, 26:6, Chongyu and Gapsin). The Saejae and Gyerip passes shared most of the traffic. Rest area and public inns were concentrated in that area.

The size of postal districts and post stations depended on the grade of the road that passed through them. According to the Annals of King Sejong, the Yongnam-ro was divided into three categories during the Yi Dynasty: the road from Seoul of Juksan in the province of Kyonggi belonged to the "great roads"; the stretch between Juksan and Sangju was a "middle road"; and that from Sangju to Pusan in the category of "small roads" (Sejong Silok, Chiriji). Other sources, however, seem to disagree with this classification. Shin classified the Yongnam-ro as "great road" from Seoul to the Naksaeng station, "middle road" from Naksaeng to Sangju (Naktong Station) and "small road" from Naktong to Pusan (Shin Kyong-jun: 1770, Doro Go vol. I [post] 1:6). Yu chose another classification altogether. He classified the royal highways into nine grades (Table 7). It was based, not on the road-width, but on the number of horses and the population at each station. The application of this general classification to the Yongnam-
Fig. 16. The Yongnam-ro and its branch roads.
### TABLE 7. ROAD GRADES IN THE EIGHTEENTH CENTURY.

<table>
<thead>
<tr>
<th>Grade of Roads</th>
<th>Number and grade of horses per station</th>
<th>Number of households per station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st grade</td>
<td>2nd grade</td>
</tr>
<tr>
<td>Large Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 1</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Grade 2</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Grade 3</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Middle Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Grade 5</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Grade 6</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Small Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 7</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Grade 8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Grade 9</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Ban'gye Surok
ro involves some problems because the Yongnam-ro belongs to the large roads in its population of servicemen, but to the middle roads based on the number of post horses (See Chapter VI).

This discrepancy can be explained by the fact that the government distributed more horses on the Northeast Highway, from Seoul to the Yalu River than on any other highway because that highway had a horse post-system, while many other roads had a foot-runner system. Horses on the Yongnam-ro, on the other hand, were reserved for the movement of such persons of privilege as envoys, officials, and foreign diplomats and for the delivery of intelligence messages from the northern frontier.

The importance of the Yongnam-ro was administrative and strategic. At least 23 local administrative centers, as well as several garrison towns, were located along this route. In the early Yi Dynasty, two provincial capitals, Chungju of Chungchong-do and Sangju of Kyongsang-do, were developed as regional centers. After Taegu replaced Sangju. The Yongnam-ro became even more powerful. Kwangju, Sonsan, Miryang, and Tongnae were also important towns.

After the Japanese invasion, the Yi government reinforced the institutions along the Yongnam-ro. Kwangju and Suwon came under the direct control of the central government. Officials with powers similar to those of ministers were appointed as city-governors. Juksan,
chungju, Joryong-gwan, Sangju, Kasan-song, Kumo-Sansong, and Pusan became important military bases for the number of troops posted along this highway.

Despite the extensive reconstruction of the Yongnam-ro zone by the Yi government, the importance of this road gradually decreased after the seventeenth century. One of the main reasons for this decline was the shift of administrative centers. The provincial capital of the Chungchong-do was transferred from chungju to Kongju after the Japanese invasion. The provincial governor of the Kyongsang-do also moved from Sangju to Taegu in 1601. And Suwon, a new town, became the regional center for the southern province of Kyongsgi. Because government institutions in Oriental society attracted a number of people to administrative seats, population tended to shift to higher level centers, Kyongju, the former capital of the Silla monarchy, was the core of Kyongsang-do during the Koryo dynasty. Sangju in the northwestern part of Kyongsang-do became the provincial capital between 1392 and 1592, and Taegu, with its ideal central position in the communication network, replaced it in 1601.

Chungju, the provincial capital of Chungchong-do leaned to the east from the geographic center of the province; it was replaced by Konju as capital in 1598. Kongju is located on the terminus of sea-going navigation of the Kum River and the linkage of the Samnam-ro from Cholla-do. Therefore, it became the regional center of the Kum Basin,
one of the important agricultural regions in Korea.

Kyongsang-do, lying as it does athwart the southeastern end of the high road from Manchuria to the Korean Strait, was the traditional point of contact between Korea and Japan. The southeastern coast of Kyongsang-do faces Tsushima and Kyushu islands, ancient seats of the Japanese sea-folk. From wealth of opportunity and habitual contact, Kyongsang-do could scarcely have escaped the brunt of Japanese aggressive policy.

Cholla-do superseded Kyongsang-do as granary of the country. The government had to reevaluate the financial and administrative importance of the southern region; the communication network was subsequently reorganized in that direction, although this was not part of the original plan. The route from the southeastern region started from Pusan through the central part of the Yongnam region, crossed the Chupung-ryong Pass. At Chonan, it joined the route from the southwestern region extending through Kongju (new provincial capital of chungchong-do), Chonju (provincial capital of Cholla-do), Naju, and Kangjin. The road extended northward to Seoul through Suwon. Thus was the gathering point for the southern highways of Korea moved westward, from Upper Han Basin to the Upper Kum Basin.

Judging from old documents and maps, the major communication route between the capital city and the Yongnam region shifted from the remote east to the lower plains area in the west (Fig. 17). Route 1 and 2 were the
Fig. 17. Shift of communication routes between the Han and Naktong basins.
ancient Silla routes. Route 2 was also used as a major route during the Koryo period. Route 3 was the early Yi Dynasty route. Route 4 acquired importance during the middle Yi Dynasty. Finally Route 5 from Pusan and 6 from Kangjin, joining at Chonan, became the main roads leading to Seoul. In other words, after the Japanese invasion, the Yongnam-ro started to decline because the Yongnam region lost its supremacy as granary of the nation to cholla-do and because of the subsequent shift of provincial capitals. The construction of Suwon facilitated the development of the new network which connected cities such as Seoul, Suwon, Chonan, Chongju, Kimchon, Sonsan, Songju, Taegu, Miryang, and Tongnae. Some Korean geographers erroneously imply that the introduction of western modes of transportation led to a sudden decline of the Yongnam-ro (Lee K.S.: 1967, p. 34; Lee S.H.: 1968, p. 115). In reality, the last shift of the main route just described (Pusan to Seoul through Suwon) which later became the foundation of the Modern National Highway IV and Expressway between Seoul and Pusan—had already been initiated as early as the late Yi Dynasty.

The poor administration of the end of the Yi Dynasty, instigated the farmers' rebellion in Chinju in the Kyongsang-do. It spread eastward, westward and northward. Sonsan, Songju, Sangju, Kwangju, and other counties along the Yongnam-ro zone were out of control for a couple of years in the late nineteenth century (Yi Sang-baek: 1977,
pp. 357-70). Transport was paralyzed again by the Donghak Revolt in 1894 and by other small-scale rebellions in Chungju, Mun'gyong and in other counties along the Yongnam-ro (Kuksa pyonchan Uiwonhoe: 1971 [vol. 6] p. 705). Bandits infested such rugged mountain passes as Darinae (near Seoul), Jwajong (near Juksan), Saejae, Songhyon (near Chongdo) and Jakwon (near Miryang). According to local testimonies the bandits robbed not only merchants and travellers, but even government officials and couriers (Kim Jong-ik [87]: 1974, personal interview at Yangjae-ri; Yi Kyu-bong [82]: 1975, personal interview at Naksaeng-ri; Yi Chun-baek [90]: 1980, personal interview at Sangcho-ri of Mun'gyong Country; Yi Han-gyu [76]: 1976, personal interview at Yugok). Merchants and travellers, therefore, had to organize caravans and use these passes only in the daytime. Such frequent incidents discourage the use of the Yongnam-ro. Merchants and peddlers tended to avoid this route altogether and to select less rugged by-pass routes, such as the Chupung-ryong Pass.

The vertical communication system linking the royal court to the local administrative centers may have been another reason underlying the decline of the Yongnam-ro. Almost all postal routes in Korea were developed for the communication between the royal government and the local government. Each county magistrate was appointed by the central government: he received orders directly from the
court and contacted it directly. Although his senior official was the provincial governor, he did not act as intermediate agent. County magistrates had independent authority. The communication network between the provincial government seats and the counties, therefore, remained in an embryonic stage. In other words, the central government was not concerned about the development of a horizontal communication network. Even routes between provinces did not develop significantly.

During the periods of the Japanese and Manchu invasions, the government began to realize the importance of a horizontal network, but the merchants and the peddlers were responsible for the materialization of such a network. After the two wars, periodic markets developed almost everywhere in the country. The government authorities realized that they could not longer ban them and finally approved their existence (Yi Sang-baek: 1977, pp. 258-9).

The merchants and peddlers travelled from market to market periodically. Their periodic movements had fixed itineraries dictated by their organizations. Each peddler organization had a specific territory covering several counties and was not allowed to trespass into other territories. The peddlers travelled through the mountain passes over provincial boundaries. Administrative boundaries were not significant to them (Stine: 1962, pp. 68-88; Yu Wook-k: 1972). Some peddlers in the Sangju area, who have kept the old tradition, still travel through the western part of
the province of Chungchong-bukdo and that of Kyongsang-bukdo. Other groups from the area of Chungju travel through the Saejae Pass to Mun'gyong and Sangju. They cover a dozen or more counties, one third of them peddling in Chungchong-bukdo and the others in Kyongsang-bukdo (Yu Woo-ik: 1974, p. 8). The peddlers of the Yi Dynasty travelled from market to market according to the market days in the sphere of itinerant trade, each sphere consisting of several counties under the commercial control of the local peddlers' guild.

The government began to use some of the commercial routes as major communication routes between the royal and provincial capitals, but only to a minor extent. The government later began to develop the upside-down Y-shaped pattern, which became the foundation of the modern national highway system of Korea, although its focus moved from Chonan to Taejon during the Japanese dominance (1910-1945). The peddlers' route influenced the development of modern transport routes, particularly the railroads as of the early twentieth century. First of all, the Kyong-bu and Honam lines follow the itinerary of the upside-down -Y shaped network of the Yi Dynasty. The Kyongin, Suin, Suyo, Ansong, Kyongbuk and Kunsan Lines and a few others were built as branch lines of the two main railways. It is through those railroads that the Japanese merchants encroached upon Korean markets.
Summary and Discussion

The Yongnam-ro first materialized with the establishment of the Yi Dynasty. Such historic events as the transfer of the royal capital from Sngdo to Seoul and the promoting of diplomatic relations with Japan gave momentum to the establishment of the Yongnam-ro.

In the Koryo period, the communication artery between Songdo and the Yongnam-ro had not yet been fixed, especially in the southern part of the Sobaek Range, even though the Kyongju--Songdo segment of the route was then already the busiest road in the southern part of the Peninsula.

The Yi government selected one among the several existing north-south routes for the site of the Yongnam-ro from Seoul to Pusan. Pusan gained strategic importance by the opening of the three ports to the Japanese traders. Many Japanese envoys and merchants landed at Pusan and travelled along the Yongnam-ro. Not only was it the shortest route, but it ran through highly populated and very productive regions. The Yongnam-ro almost paralleled the Han-Naktong river route. Among the ten largest cities in the Yi Dynasty, more than five were located along this route.

The Japanese invasion was a critical event that affected the fate of the Yongnam-ro. The invaders landed at Pusan and marched along this route to Seoul. Their
headquarters remained in the Yongnam-ro region for seven years. The Yongnam-ro zone was devastated by the demands of the Japanese Army. The cultural and economical predominance of the Yong-ro region over other provinces began to decline. Cholla-do attracted the government's attentions because the southwestern region was less damaged during the war. The Seoul-Pusan oriented communication system was subsequently replaced by the upside-down - Y shaped system. In this new network, Chonan was at the crossroads of the routes from the Yongnam-ro in the southeast and those from the Honam region (Cholla-do) in the southwest. This communication network became the basis of the contemporary Korean network, particularly that of the modern rail-roads.
CHAPTER V
THE ROAD
Introduction

particularly in the past the main objectives of roads seemed to have been rapidity, safety, and economy of transportation. roads should, therefore, be so located and built as to withstand burdens of goods and passengers and to reach one place from another in the shortest time with the least expense. in road buildings, designed with such purposes in mind, some of the elements to be considered are direction, grades, alignment, surfacing, and the location of road signs.

Road Building and Road Alignment

The civilizing value of roads was strongly left during the despotic monarchies. road construction seemed to symbolize the supremacy of a centralized authority that has scarcely had a parallel. as engineering skills and tools improved, the influence of roads has grown greater.

most long lived and well established states had well designed communication system for military purposes and administrative efficiency (weigert: 1957, p. 158). scholars in many disciplines have discussed this fact.

the babylonian highways were used as models by the hellenistic rulers, whose efforts in turn inspired the official road builders of the roman empire (wittfogel:
1963, p. 37). The great Inca road was the longest and best-built pre-modern royal highway in the New World (Gregory: 1931, p. 121). The Mongol contribution on the development of communication also deserves some praise, although somewhat limitedly (Naito: 1934, p. 381; Ministry of Communication: 1970, p. 5).

From the geographer's point of view, the quality of roads is hard to evaluate. Geographers consider the natural features of the regions, the level of economy, the arrangement of population, the political system, and the efficiency of the road. Natural features, generally disregarded by the military engineers, do affect on the road construction. Scholars in various disciplines agree that the dry regions were favorable in road construction during pre-modern times. The Babylonians, Persians, Greeks, Romans, Mongols, and Incas were dry or semi-dry world people who built good roads. The Chinese, also known as great road builders, earned more fame from the construction of canals. In Monsoon Asia generally, road engineers had more trouble in road building than those of the dry part of the world because the torrential summer rain often made the ground impassable. In East Asian countries, more than two-thirds of rainfall is concentrated in summer from June to August. The road surface is removed by erosion or becomes muddy. Although some parts of the road were paved with stone slabs or bricks, the Roman type of road construction was generally not suitable to this region.
Nothing among Asian roads, therefore, could compare with the Roman road in design and construction, but we should not jump to the conclusion that their efficiency was also inferior to that of the Roman road.

During the dynastic zenith, a government normally paid attention to the management of roads, and their regular maintenance, but roads were subsequently neglected and were allowed into decay during the declining periods. The Westerners who saw the prosperity of Ming or Ching China or Tokugawa Japan therefore praised the Asiatic highway system, while visitors in the declining periods underestimated them:

This branch of public policy accordingly is said to be very much attended to in all those countries, but particularly in China, where the high roads, and still more the navigable canals, it is pretended, exceed very much everything of the same kind which is known in Europe. The accounts of those works, however, which have been transmitted to Europe, have generally been drawn up by weak and wondering travellers; frequently by stupid and lying missionaries. If they had been examined by more intelligent eyes, and if the accounts of them had been reported by more faithful witnesses, they would not, perhaps, appear to be so wonderful (Smith: 1913, p. 572).

Through such criticism, we realize that a traveller's account may report only the phase of Asia in the nineteenth century when the Oriental society, under the difficulties resulting from European colonization, also suffered from poor internal administration.

Geographers view roads perhaps differently from scholars from other disciplines. The function and effects of roads may be more important than design of roads because
the landscape along the road is closely related to human activities. Comparing the Chinese Empire and Mongol Empire, for example, shows that the Chinese could be long-lived because of its well organized communication system, while the Mongol was short-lived because of its loosely organized communication system, despite the attention given to "road cosmetics" (Weigert: 1957, p. 158). Although the Tokaido, one of the Japanese royal roads from Kyoto to Tokyo was no more than a dirt road for the pedestrians and horse riders, it was regarded with respect because of its well organized institutions, facilities, functions, and effects (Hall: 1937, p. 361-2). Leighton's criticism is unusual, but it is a more objective appraisal because few scholars criticized Roman roads:

Stone, either crushed or flat, provided an inflexible and uncomfortable surface to marching feet under hot and dry conditions. When the surface was wet, the stone became slippery. Conditions which were bad for pedestrians were worse for horsemen. As it seems that most Roman horses were unshod, it is likely that hooves would soon deteriorate when used on a stone surface. Vehicles and other draught animals were even more out of place on a hard surface with extremely steep gradients. Lack of breaking power and insufficient harness must have discouraged the use of vehicles on steep ascents and descents (Leighton: 1972, p. 51-2).

As Burghardt pointed out, the most important characteristic of the Roman road was its direction and straightness, although its being level was the greatest aid to swiftness of movement (Burghardt: 1979, p. 3). Swiftness was necessary for military campaigns and control of the
colonies, but it probably was less as useful in the administrative communication network because the Roman roads were non-stop links between the capital city and the termini. In other words, administrative communication between the capital and the regions was not highly regarded. There was little access to the regional centers from Roman highways. The lack of large political units meant that man's horizons were limited. There was little economic incentive for the regional centers to maintain a route which only passed through their area and brought no benefits to their immediate vicinity. Succinctly speaking, the Roman roads were much too luxurious in their design and heavy masonery, and ineffective in any aspect, except for military purposes. In the interest of military presence, the Roman wasted both materials and manpower.

Korea's old road system was underestimated by the European visitors in the nineteenth and early twentieth centuries. They indicated simultaneously that the poorness of land transportation was a fundamental impediment to economic, political, and cultural progress. "The lack of overland route and means of transportation absolutely hinders the large scale agriculture in this rugged country; There are few large villages, and most inhabitants reside in small dispersed settlements consisting of a couple of or a dozen of houses" (Chong Ki-Soo: 1966, p. 22).

Such a report is based on the reports of the French missionaries who travelled only through remote and secluded
places in the mountains in the eighteenth and nineteenth centuries. None of the missionaries could operate near the main highway for objective reason observation for fear of persecution. The missionaries also overlooked the behind the impoverished road conditions, such as the destructive warfare with the Japanese and Manchus and poor internal administration. The inaccurate reports and incomplete evaluations by Westerners caused additional misinterpretation by those who quoted them:

There are few countries in the world where road conditions are in worse condition than Korea, despite the fact that a road is the artery of people's life. Korean roads have never been repaired in the past, and will not be repaired in the future centuries (Ministry of Finance of Imperial Russia: 1905, p. 232).

This Imperial Russian propaganda apparently used the casual, shallow reports of travellers. These casual or insensitive travellers' accounts had continuing effect well into the mid-twentieth century, as seen in supposedly authoritative accounts by professional geographers:

In ancient Korea the roads were in an unbelievable bad condition. The legation road from Seoul to Uiju (the Northwest Highway) was at least sporadically useful for the wheeled-vehicle. Other roads cause great difficulties to heavy wagons. Travel sketches done for a decade after the Opening of the country all clearly reflect these complaints.... The Japanese military campaigns and economic development project stimulated the improvement of transportation in Korea (Lautensach: 1950, p. 79).

The Japanese colonialists at the turn of the century also used these faulty records in their political propaganda, implying that the Koreans were inferior people who had
never developed organized communication system. Although the old Korean roads may have been a less excellent overland route system than the Roman and Chinese roads, the Korean roads were nonetheless appropriate to Korean conditions of transport. The Korean roads were more suitable for carts, horses with shod hooves, and pedestrians.

The dirt surface of Korean road required regular maintenance to keep it in good condition. In the early Yi Dynasty, both central and local governments considered road management very important, but in the later Yi Dynasty, officials neglected it. The surfaces of dirt roads broke down under rainy conditions; the drainage ditches became choked with debris; and erosion attacked embankments. They finally became almost impassable to vehicular traffic. Although they were partly improved during the Yong-Chong Era, the Korean roads had reached their worst condition by the late nineteenth and early twentieth centuries. A fair discussion of the road in Korea, therefore, must examine the road system from the early Yi Dynasty through the eighteenth century.

Production and traffic appear as major determinants of the regional arrangement and location of a route, although relief also affects local alignment. There are correlations between the form of communication networks and their functions. The considerations that should determine the alignment of a road are the natural feature of the
country through which the road must pass, the character of traffic over the road, general character of traffic, and the necessity for branching local roads to the main trunk.

The most important function of road is to increase the chance of communication among the people in different regions. Every route should connect settlements, and passages between two settlements most easily to lessen the labor and expense in road building, because settlements generally develop in flat areas, rather than in rugged regions.

Straightness is more human than natural. Everywhere, early roads were winding. Early man learned that zigzagging paths are more convenient while climbing than straight ones. Natural features were not totally ignored by the premodern engineers; they did remove some natural barriers by cutting cliffs, filling swamps, and bridging stream crossings.

Relief is an important factor in the location of the Yongnam-ro, but its effect is not simple or direct. The major relief features along the Yongnam-ro are part of a valley-and-hill complex. The more frequent landforms include the alluvial valleys in the Han and Naktong basins and ridges in the Kwangju, Charyong, and Soabek ranges.

The alignment of the Yongnam-ro can be divided into three major sections by different landforms: the Han Basin section, the Sobaek Range section, and the Naktong Basin section. The Han Basin section spanned the 140 kilometers
distance from Seoul to Danwol station in the Chungju Basin.

The Yongnam-ro in this region formed three subdivisions: the Tanchon Valley section, the Chongmi-chon Valley section, and the Chungju Basin section. The dividing ranges of these sections are the Kwangju Mountains and the Charyong Mountains. These mountains, mainly of granite, are well dissected and cut by natural saddles, such as the Jwajong Pass on the Kwangju Range and the Im'o Pass on the Charyong Range.

Although the Tanchon, Chongmichon, and Dalchon are short tributaries of the Han River, they have provided large agricultural lands and natural routes. The Yongnam-ro was connected with these valleys by the Jwajong and Im'o passes. The general gradient of the Yongnam-ro from the Lower Han Basin to the upper Han Basin is very gentle because the Yongnam-ro lay on these valleys.

The intermontane road on the Sobaek Range is about 40 kilometers long between Danwol station and Yugok station. The Soabek Range, composed of granite, gneiss, and limestone, forms the major barrier of the Yongnam-ro, but such natural saddles as the Gyerip, Saejae, and Yiwha passes served as the route between Chungju and the Naktong Basin. The mean elevation of these passes is about 600 meters, about 400 meters lower than that of the Sobaek Range (Figure 18).

The northern slope of the Soabek Range is well dissected by the upper Dalchon stream, and its gradient is
Fig. 18. Route topography of the Yongnam-ro and cross-section of the route (below).
gentler than that of the southern slope. The intermontane routes fork to the Gyerip, Sajae, and Yihwa passes. The southern part of the Saeje Pass forms a small Basin that is drained by the Yonggang Stream. The intermontane roads from the Gyerip, Sajae, and Yihwa passes rejoin at Mun'gyong; they become a single road between the Gwan'gap-chon and Yugok station because the Yonggang Valley in this area forms a narrow limetone valley. Numerous roads branch from the Yongnam-ro at Yugok Station. For that reason, the location of Yugok was compared to the neck of the human body by ancient Koreans (Shinjung Dongguk Yoji Sungnam, vol. 29, Yokwon).

The third section of the Yongnam-ro, lay in the Naktong Basin, and is divided into four subsections: the upper Naktong Basin, the Kumho Basin, the Miryang Valley, and the Naktong Delta Bypass. The minor barriers in this section are the Soya Pass between the upper Naktong Basin and the Kumho Basin, the Songhyon Pass between the Kumho Basin and the Miryang Valley, and the Jakchon Pass between the Miryang Valley and the Naktong Delta Bypass.

The granite mountains, running down from the Taebaek Range to the Naktong Valley, are considerably dissected at their extremities so that the succession of ranges is cut by the Naktong River. The ground of granite hills is very well drained even after the torrential summer storms. The hills along almost all parts of the Yongnam-ro have been developed as agricultural fields since ancient times. The
Yongnam-ro was not obstructed by forests in the hilly areas. The third section of the Yongnam-ro, therefore, did not have serious problems in the consolidation of such major centers as Sangju, Taegu, Miryang, and Pusan.

The building and maintenance of good roads, reaching and joining together distant stretches of territory, was generally attributed to the United Silla Kingdom. The later postal system of Koryo, based on the speed of horses used in relays on royal roads should be credited the Silla monarchy. The trails were widened slightly by post-riders on their horses. Travelling by pack-animals and by wheeled vehicles replaced more and more horse back riding, tracks grew wider and the route between a one city and another became more direct.

Army engineers may have been the first men technically qualified to carryout a planned program of road building in early history (Jackson: 1965, p. 2). Most mountain passes on the Soabek Range were constructed by the Silla troops, and the well known Kwan'gap-chon Jando (hanging galey) was built by the Koryo troops during their military campaign to the Late Paekje.

Sometimes road engineers, particularly military engineers, created new routes, but they preferred in many cases to use the existing trails. "It is believed that Roman roads often followed the course of pre-existing tracks, and that Julius Caesar's rapid advance can be explained by his use of these native ways" (Cole: 1954, p.
Although ancient Korean routes have been repeatedly modified for thousand years, the main frame of its network probably existed at least a thousand years ago. A road network is, however, not static; even today in some parts, ancient roads are revived, and in other parts, younger roads are abandoned.

Through all ages, the most important structural elements in a road are the site, surface of road, and the foundation on which the road rests (Gregory: 1931, pp. 173-8). Physiography affects the locale or site alignments of a route, although it can be modified by engineering techniques. The typical engineering efforts in the Yongnam-ro zone can be classified into two categories: masonry works in the mountain areas and straightening of roads in the plain areas.

A roadway located on a mountain-side usually requires masonry works. In some instances, ancient engineers leveled the top of mountain passes to decrease the gradient of the road. Stone notches at Darinae Pass near Seoul have now disappeared since the construction of the Kyong-bu Expressway. The most typical, well-preserved stone notch remains at Kwan'gap-chon.

Notches on the Gyerip Pass, Majimak-jae, Saejae, Songhyon, and other passes were built on dirt. Among these dirt notches, that of Gyerip Pass is among the oldest in the Korean history. After the construction of the Gyerip route in A.D. 155, it became an important military campaign.
road between Silla and Koguryo. It was abandoned upon the fall of the Koryo kingdom, after the opening of the Saejae Pass. Few records or documents about the Gyerip Pass are available after the eighth century. Hence, the following discussion relies on fieldwork.

The left side of the Gyerip notch is covered with gruss and its gradient is very gentle (Figure 19). There is evidence of some soil; the gruss is creeping today. The width of the road surface is about five meters. On the east side of the notch is an embankment, possibly the remains of a earthen rampart. The open space on the east side of the notch occurs the remains of an abandoned settlement, probably garrison or temple site. The site is littered with pottery pieces, large corner stones, and roof-tile pieces. The Tanhyon bongsu (beacon fire station) site is about two hundred meters west of this notch.

According to the local hearsay, the Gyerip Pass was fortified by a stone wall with barrier-gate in the notch itself (Chon Il-yong: 1980, personal communication). If so, the material has long since been removed for other construction.

Road construction on a perpendicular cliff also existed along the Yongnam-ro zone. At least four cliff sites accommodate parts of the Yongnam-ro: Dalchon (near Chungju), Yongchu (near the second gate of Saejae fortifications), Kwan'gap-chon, and Jakchon. The Dalchon and Yongchu routes, short and small in size and not very
Fig. 19. Summit of Gyerip Pass (630 meters), July 1980.
rugged, were not serious obstacles, but Kwan'gap-chon and Jakchon were well known as strategic choke points.

Historic records in the early fifteenth century note:

A stairway was constructed by the cutting of a perpendicular limestone cliff. This road winds six to seven ri (2,400 to 2,800 m.). It is said that when King Taejo of Koryo arrived here on his way of campaign against the Lake Paekje forces, he could not find any access. Finally, he found a rabbit running through its trail on the cliff, and then his troops open the route and could march. Since that time people have called this way Tochon (Rabbit Way). (Shinjung Dongguk Yoji Sungnam, vol. 29, Kyongsang-do Mun'gyong-hyon, Sanchon).

At eighteen kilometers southeast of Miryang, the Jakchon jando was constructed along a distance of five or six ri of dangerous perpendicular cliffs. One side of road was built by the spalling of a rockwall. If one looks down at the bottom, one can see the deep dark blue water a thousand jangs (300 m.) below. One day a local magistrate lost his footing and was precipitated over the cliff into the water. Hence, everybody treads carefully for fear of falling (Yoji Doso, vol. 2, Kyongsang-do, Miryang, Yokwon).

These two road segments often skirted precipices and included many hanging galleries (jando), i.e., wooden balconies jutting from perpendicular cliffs and carrying the road along. The cliff of the Kwan'gap-chon road lay above about 30 meters from the bottom of the Yong-gang stream. This route is now almost destroyed and covered with shrubs and trees. Even today, the fire-spalled wall of the limestone cliff can be seen vaguely from the valley below as an unusual line on the steep limestone wall. Airphotos and classical records verify the existence of a road in that place. The line seen on the cliff and on airphotos can be seen to be a man-made, now abandoned, roadbed that can be

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reached on foot by diligent fieldwork.

The construction of the Kwan'gap-chon road used three engineering techniques (Figure 20). First, the entrance part was formed half through excavation and half through embankment, with an allowance for the shrinkage of the embankment. To guard against slides, benches were cut into the natural surface (Figure 21). At approaches to steep hillsides, embankments were built from material excavated nearby. On rugged faced, the roadbed was notched into the mountain face and supplemented by retaining walls. In the most rugged part, in the middle of the Kwan'gap-chon, the cliff is almost perpendicular, and the limestone surface, which was cut by the road engineers, is very smooth and slippery. Although its width is now only half to one meter, and some parts have disappeared, the original width has certainly wider (Figure 22). Judging from the historic name and the landforms of this part, the so-called Tochon Jando was a "hanging gallery". The average width of the route was at least three meters, including wooden balconies (Jando). Local testimonies also supports this reconstruction because pack animals and sedan chairs, which were used here, called for such a minimum width (Lee Hang-gyu: 1974, personal interview).

The third part, between the notch and Kyontan-won was also built on a steep slope, but the elevation was not very high. The road surface was also formed by excavation, and the roadway, protected by an embankment, survives to date.
Fig. 20. Landforms and engineering techniques of the Kwan'gap-chon bypass.
Fig. 21. Embankment of Kwan'gap-chon Road.
Fig. 22. Remains of hanging gallery. Limestone roadbed is smooth and slippery.
The Jakchon road between Jak-won and Hwangsan station is about two kilometers long. The date of construction of this route is unknown, but the oldest record is found in the Shinjung Dongguk Yoji Sungnam, which was compiled in 1479. In other words, this route was completed before the sixteenth century.

The water level of the Naktong River is about 3.5 meters above the mean sea level in this area, and the elevation of the road surface is about forty to sixty meters at the barrier-gate of Jakwon-kwan. This road clung to the perpendicular cliff, about 50 meters above the river. Although the road surface has been destroyed by man and nature, the average width of this road was probably at least two meters. The engineering technique of this road is similar to that of the Kwan'gap-chon. Several segments still have the projecting ledges that indicate the excavation of rock walls.

The existence of these dangerous places weakened the function of the Yongnam-ro, but no place along the Yongnam-ro was completely impassable for vehicular traffic if people would widen and level the road surface. The areas between Chungju and Sangju and between Miryang and Hwangsan were the most rugged areas in the Yongnam-ro zone. Rugged landforms could not therefore be the reason why the Yi government did not widen more mountain roads to make them passable by vehicles. The Yongnam-ro was established by the Yi Dynasty, but that government preferred to use
existing routes that had been built by the Silla and Koryo governments. The political doctrine of the Yi government can provide more insight into the matter of choosing a road site. First, travelling and migration of the people were not desirable to the Confucian scholar-officials. Commercial activity was controlled by the government. They did not realize the desirability of good roads. Second, the so-called sadae gyorin (the policy of respect for China and of neighborly relationships) spoiled the official mind. After the establishment of the Yi Dynasty, government officials neglected the national defense until the invasion of the Japanese in 1592. This neglect caused a degree of backwardness in the transportation system. Chong Yag-yong, a great Sirhak scholar in the early eighteenth century, criticized this situation (Mokmin Simso, Kongjon 6, Chapter 5, Doro):

It is sad story that people use the rugged landforms of our country as an excuse for the poor progress of the use of vehicular traffic. One says, "A defensive position should not be cut and level," but that is also wrong. Security of the realm depends on its strongholds. That requires the construction of walls or fortifications. I have never heard that rugged mountain road themselves could be strongholds. In the Imjin Woenan (the Japanese Invasion of 1592-98), all the Japanese troops passed through the Saejae Pass. How can we blame the tragedy of war on the imperfection and ruggedness of the road? It is due to the mismanagement of the road that vehicles and horses cannot pass, the merchants do not travel, and goods remain undelivered.

The Yi government considered the use of the Yongnam-ro for national defense only after the Japanese invasion. The
Saejae Pass was fortified in three places. The Kwan'gap-chon and Jakôn were guarded by troops, but few records mentioned the improvement of the road. According to native testimony, traffic moved with much difficulty in these two areas during bad weather. The Jakchon route was generally free from snow-storms and frost because it is located in a warm area, but the Kwan'gap-chon road was almost impassable during snow-storms. Therefore, there were many rest houses and inns within a short distance.

The development of straight roads was common in ancient urban areas. The origin of straight roads, while unknown, might lie in the introduction of the chong-jon (中國 "curbed well" and "grid planned field") system. It was not widely adopted in Korea because the chong-jon system is not suitable to the hilly countries, but it was presumably adopted in several ancient cities in the plains.

The design of planned roads of ancient Japan in the southern part of Nara Basin was closely related to the planning of the imperial castle, and it had begun in the period of ancient burial mounds in the seventh and eighth centuries A.D. (Fujioka: 1976, p. 11). These practices seem to have reached Japan through Korea, requiring a millennium to spread from China to Japan. The construction of large tumuli was facilitated by a strong regal power, engineering technology, and transportation system in Japan.

The introduction of the chong-jon system in Korea
started in an ancient Choson Kingdom known as Kija Choson. The Kija's chong-jon appeared several centuries B.C. in suburban Pyongyang (Shinjung Donguk Yoji Sunggam, vol. 51, Pyongyang-bu, pungsok). The chong-jon system was established around the Kyongju area in the early Silla Kingdom (Shinjung Dongguk Yoji Sungnam, vol. 21, Kyongju-bu, Kojok).

The development of huge burial mounds began in the second century A.D. in Pyongyang area: it diffused to Silla in the late third century A.D. (Kim Won-yong: 1979, p. 138). About 350 ancient tumuli cluster in Kyongju area, and more tumuli may yet be found in other areas (Kim Won-yong: 1979, p. 165).

There may have been well-built, straight roads in Pyongyang and Kyongju areas. A large scale topographic map of Kyongju published just after 1910 shows the remains of chong-jon system of Silla and the grid pattern of roads (Fig. 23). The dry fields and rice paddies in the grid pattern originally were built-up areas in the United Silla Kingdom. Large amounts of artifacts remain in the fields and found by archaeologists support the idea that ancient Kyongju was several times bigger than the modern town in the early twentieth century. Four highways, almost straight, focused on the city. The street pattern of ancient Pyongyang and Kyongju influenced the development of straight roads in the cores of tribal kingdoms such as Sangju, Kimhae, Chungju, Seoul, and others. This tradition
Fig. 23. Remains of grid planned roads (chong-jon system) in Kyongju.
was applied in the successive dynasties. The national capital, provincial capitals, and other large towns used to exhibit a chong-jon street pattern. The road from Seoul to Suwon and from Seoul to Yongin were generally straight. The roads near Suwon, Chungju, and Taegu also were straight.

Road Survey

The survey of roads was the first step in road-building in the past and present, but little is known about the kind of survey techniques used by the old Korean road builders. The preliminary reconnaissance of landforms must precede surveying. Ancient British engineers' reconnaissance may, for example, be enlightening (Jenison: 1949, p. 28):

The reconnaissance engineer of the ley (the great English system of roads) apparently went to the top of the highest peak of the range in his area and marked the farthest hill in the direction he wanted to go. And he aligned with it a pond, or mouth of a river, or a tree. Before he came down he built a cairn of stones near where he stood, not on top of the ridge, but just a shade down and ran a true line by his pond, or boulder, as nearly as he could between his hill points; making trails, dodging about until both aligned with his determined points. Then he repeated his operations in the next section. Great mounds superseded the early sighting mounds built in the valleys. Often they were moated and surrounded by water to make them more readily seen from a distance; moats were wider as the leys developed. Undoubtedly beacon fires were kept at night here where fire would be best reflected.

There might be a close similarity between that British method of road reconnaissance and the road signs in ancient
Korea. Ancient kingdoms built roads for the purposes of military campaign and administration. In the survey of road alignment, the ancient military engineers used natural objects, such as large rocks, ponds, notches, and trees, as the points of survey. When the surveyors could not find proper objects, they seem to have erected stone-piles, earth mounds, and posts. Ancient people sanctified roads and road signs. Then the remains of road survey became sacred matters, and political leaders probably adopted these survey markers as road signs.

The shift of emphasis and orientation, in response to changed conditions, caused the reorganization of the routes and the postal system during the Yi Dynasty. The Yi government realized that the roads themselves showed a great variety and lacked standardization in their construction. The distribution of institutions and other facilities was also irregular. Hence, the Yi government decided to unify them. The Annals of King Sejong in a memorial to the throne from the Ministry of War, indicates (Sejong Silok, vol. 93, 23:9, Kyesa):

The distance between post stations varies in each province, and this fact has caused serious problems in military affairs. It must be gradually surveyed and corrected. Pyongan-do is the place where the government envoys travel. Every 30 ri (12 kilometers), therefore, erect a mile post, build a mound, and plant a tree as road sign. The king approved this project.

In the great road survey project in 1441, an interesting machine, known as kirigocha, was made in 1441. A measurer
was attached in this machine, and a human figurine hit the drum automatically every four kilometres (Jeön Sang-waon: 1976, p. 324). With this road survey technique, the government was able to standardize the distance measure between stations, and between road signs (Sejong Silok, vol. 93, 23:9, kyesa).

The institution of standard measurement symbolized the authority of despotic government. The ancient Chinese government established its weight and measurement system. The road system of the Chinese Chu Dynasty (1100-256 B.C.), especially, became the model of the Yi Dynasty's road system (Son Jong-mok: 1976, p. 336). The Yi government decided that the width of the main street in Seoul was to be 56 chok (20 meters), 16 chok (5 meters) for middle sized street, and 11 chok (3.3 meters) for the small street. About 2 chok (0.6 meters) of ditches on each sides of the street were added (Kyongguks Daejon, Kongjon, Kyoro).

The historic background of the width of the main street (56 chok) originated from a regulation of the Chu government of China. According to that regulation, the large street in the emperor's capital had to be 9 kweh (22.5 meters) in width, and that of the kings' capital be 7 kweh (17.5 meters). When the Yi government adopted the Chu system, the Confucian officials degraded their ruler's position from the Emperor to king, and tried to follow the Chu model for the width of the main street, but it was actually about twenty meters or wider than twenty meters.
Royal highways were graded not on width but on the distribution of horses and servicemen, which was in turn based on the amount of traffic. The highest grade roads in Kyonggi-do were generally wider than the lower grade roads in the remote regions. According to historic records, the width of a dae-ro (great road) was 10 to 15 meters, jung-ro (middle road) was 7 to 10 meters, and so-ro (small road) was 3 to 7 meters (Ban'gye Surok, vol. 25, Doro Gyoryang: Shinjung Dongguk Yoji Sungnam, vol. 2, Hansong-bu, Doro). Chong Yag-yong wrote that the average road must have been at least four meters wide, and trails between villages at least 1.6 meters (Mokmin Simso, vol. 12, Kongjon 6, no. 5, Doro).

The widths of old roads can be computed by examining cadastral maps drawn before 1945. According to the cadastral maps of Pan'gyo, Yonwon Station, and Danwol Station in Chungju, Jomchon, and Haepyong, the width of the Yongnam-ro was about 10 meters near Pan'gyo, seven meters at Yonwon, Danwol, and Jomchon, and five to seven meters at Haepyong (Fig. 24). Mr. Lee Su-gi, a local scholar at Haepyong, stated that the Yongnam-ro was not uniform in width: the widest area was about ten meters and the narrowest about three meters. According to his computations, three meters was the minimum width for the passage of a four-man sedan chair, and five meters was a two-carriage width. The width of common road in the Roman
Fig. 24. Width of the Yongnam-ro indicated by the shaded pattern. Cadastral maps (Chungju and Haepyong) were made in the early 20th century.
Empire was, for comparison, about 2.4 meters (Merdinger: 1952, p. 269).

Road Pavement

The significance and importance of road pavement has changed since antiquity. The efficiency of a road depends on its surviving as a surface on which wheels will run without undue fraction; the surface must be even and sufficiently hard to prevent the wheels from cutting into it. The levelness of route is also considerably important for vehicular traffic. Absolute evenness and levelness in a road is however undesirable. Some slope is necessary in most climates for drainage.

Although the road building techniques of Roman roads have been highly praised by many people, their pavement of flat slabs was unsuitable for wheeled traffic, because the sinking of one slab generally causes the next one to move up and this repeated process results in considerable unevenness. This situation was later improved by covering the slabs with a layer of gravel or earth for a more consistently smooth surface. Where necessary it could be smoothed back by simple ploughing or harrowing. Many people still preferred dirt roads over hard pavements, and many of the old stone slab pavements were replaced by dirt roads (Merdinger: 1952, p. 270). In other words, the stone-slab pavement was constructed for the marching troops, but it was often replaced by dirt roads.
The materials used for Korean roads differed from area to area. Stone slabs or gravel covering was found, but sand, mud, or red ochre were more common. The Yongnam-ro was mostly a dirt road. The remains of stone slabs are found only in the section between Shinhyewon and the Juhulgwan in the Saejae Pass (Fig. 25). Each stone slab was flat but irregularly shaped, and the gap between one stone and another was filled with dirt. The road surface between the Juhulgwan and Chogok-gwan was well preserved until 1976 when it was destroyed by the construction of a new park route. The section between the Chogok-gwan and Shinhye-won village has been abandoned for a hundred years and road surface has become rough. The average breadth of the route between Shinhye-won and the Chogok-gwan is about two meters. Judging from the road surface and road gradient, this section was not adequate for vehicular traffic.

It was an unexpected chance to find near Yogok station a stratigraphic section of an old roadbed that had probably accumulated for hundreds of years. The deposit of more than a meter thickness consists of five major layers and five thin layers. The materials in each layer are clay, gravel, sand, and red ochre. Each layer shows a different color and thickness. A new surface was laid on top of the old one each time the road was repaired (Fig. 26). The road surface is now a rice paddy.

The destruction of road surfaces by natural erosion is
Fig. 25. Remains of stone slab pavement along the Yongnam-ro.
Fig. 26. Stratigraphy of old road near Yugok Station.
more powerful than that by traffic (Jacks and Whyte: 1939, p. 203). It is particularly severe on dirt roads, where gullying digs ruts and later makes roads impassable. In some areas, the road bed sunk several feet below the original level or becomes pitted. Therefore, frequent road maintenance is necessary on well travelled dirt roads.

During the heyday of the Yi Dynasty, officials paid attention to road conditions, but they later neglected the roads during the period of bad administration. Two Westerners described the bad road conditions of Korea at the end of the nineteenth century:

On ordinary roads there were frequently places, where nothing wider than a bicycle could pass on wheels, and even this ubiquitous vehicle has to be picked up badly and carried over rough places every few miles. The constant shuffling of feet along these narrow paths through so many centuries has worn the road down below the ground level where it passes over hills, for here the wind has full play and carries away the pulverished earth (Hulbert: 1969, p. 252).

The hilly nature of the country makes travelling difficult. Inundations are frequent, though the road-beds are dust, and in winter a slough of mud (Grifis: 1905, p. 285).

These two westerners emphasized the inconvenience of Korea's road condition in the early 1900, but the former's comment was overgeneralized. According to testimony of over 50 old residents, the Yongnam-ro and other royal roads were at least wide enough for the passing of ox-carts. Most parts of the Yongnam-ro were wider than five meters and, in fact, the Japanese troops marched along them in 1904 with their artillery during the Russo-Japanese War.
In the late Yi Dynasty, the critical problem in the maintenance of roads was related to administrative structure. When the Yi government institutionalized the postal system, they established a general master plan for royal roads, but there were no regulations about the breadth of roads, the quality of pavements, or the maintenance of the surface. The repair of roads depended upon corvee. When the roads were damaged by flooding, landslides, or other natural calamities, the people of nearby villages turned out in force and repaired it. General road maintenance, however, was only done during the farmers' leisure season. The repair work was supervised by the local government, but farmers had to supply their own tools.

Before the use of macadamization, the East and West used similar techniques of road repair. In medieval Europe, road maintenance was one of the important services of monasteries, and it stimulated the development of overland trade (McClosky: 1949, p. 353). Governmental control of national highways seems to have begun in France in the seventeenth century. During the periods of the Protestant Revolt, the road conditions in Europe grew worse and trade activity became stagnant. The French national highway system was, however, well organized and was maintained by army engineers.

The Buddhist's contribution to the development of roads in Korea is equivalent to that of the medieval
churches in Europe. The road maintenance by the Buddhist temples during the Silla and Koryo periods is mentioned in record after record (Samguk Yusa, vol. 2, Ki-yl, 2, King Hyosu Jukjirang; Shinjung Dongguk Yoji Sungnam, vol. 29, Mun'gyong-hyon, Sanchon).

Voluntary road maintenance was almost stopped by the fall of Buddhistic Kojoyo Dynasty. The Yi government then had to depend upon corvee labor. Road conditions in the Yi Dynasty, particularly in the latter half of the Yi Dynasty, could not be good because unpaid obligatory labor service could not yield the same results as voluntary activity (Mokmin Simso, Kongjon 6, no. 5, Doro).

According to local elders' testimonies in Mun'gyong and Sonsan counties, the breadth of the Yongnam-ro was 3 to 5 meters. It was repaired two times a year, in spring and fall. They used various tools such as plows, spades, shovels, stretchers, strawbaskets, A-frames, and balgu (Mr. Kim Ui-sam, Mr. Lee Jin-mo, and Mr. Lee Yong-taek: 1980, personal interviews). The road was plowed in the spring to break up the ruts made by the winter traffic, and the balgu, a folk vehicle (see below) was used to level the road surface.

Ferries and Bridges

Rivers interrupt the course of overland transport in spite of their merits as fluivial routes. A complicated transport system that transfers goods from road to ferry
and back to road again can be a hindrance in the development of a community (Meinig: 1962, p. 396). This statement holds true no less for "natural" crossings. In those places, roads converge, fostering the growth of communities. Yet such growth takes place at the cost of having no travel over the crossing. Cities at such natural crossings exact tolls for use of their natural convenience. In Korea, such cities as Seoul, Yoju, Chungju, Sangju, Taegu, and Miryang are examples of settlements that had the advantage of locations at fords.

Roads were modified to get to the natural fords in these cities. In these areas, busy waterways were linked to busy overland routes. They reinforced each other, but in some ways they also interfered with each other. A bridge or ford may be a connecting link in a road network and, at the same time, an interruption to river navigation. Hence, the Yi government constructed only temporary bridges on the Han River during the winter season or national emergencies, and removed them quickly for the convenience of river transport. To replace bridges for daily crossing, public ferries were used. During the Yi Dynasty, their management was an important facet of the postal system.

Some royal roads converged on Seoul, connecting them with almost all parts of the country. The radiating road pattern, focused on Seoul, was interrupted by the Han River in the south of Seoul. Chungju, Sangju, and Miryang were in similar situations.
Although fords are natural crossings, they can be artificially improved. Such was the case of Han'gang-do, Samjon-do, Songpa-do, Dalchon-do, Naktong-do, and Samnang-do in the Yongnam-ro zone. Several logs were pushed out into the water. The fords were paved with stone slabs from the lower to the higher level on the banks which were exposed during the dry season and submerged during flooding. Such a structure still remains on the left bank of the ferry at Naktong.

Ferry boats were distributed according to the importance and the amount of traffic. In the early Yi Dynasty, the government appointed supervisors of public ferries, (dosung ranked in 9b) and posted ferrymen. On the Han River, for example, nine crossings had from 2 to 25 ferry boats in operation. Both public and private ferries were included (Table 8).

With their low rank of 9b, the dosung suffered in the performance of their duties. The Yi Court replaced the dosung by military police officers after the Japanese invasion. They checked the travellers at the ferries in order to detect spies (Chungjong Silok, vol. 6, 3:6). These kinds of check-points were established at the main crossing points on the Han and Naktong rivers. The military police officers themselves were replaced by the byoljang (military officers ranked in 6b-9b) in the middle of the seventeenth century. During the reign of King Yongjo (1724-1776), the government established military bases at Noryang-do,
### TABLE 8

**FERIERS ON THE HAN RIVER**

<table>
<thead>
<tr>
<th>Ferries</th>
<th>Supervisors</th>
<th>Number of Ferry Boats</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15th C.</td>
<td>18th C.</td>
<td>Public</td>
</tr>
<tr>
<td>Noryang</td>
<td>1</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Donjak</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Sobinggo</td>
<td>5</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Han'gang</td>
<td>1</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Samjon</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sinchon</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Songpa</td>
<td>9</td>
<td>?</td>
<td>9</td>
</tr>
<tr>
<td>Kwangjang</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Sosim-tan</td>
<td>1</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
1. *Sejong Silok Chiriji.*
Han'gang-do, and Samjon-do, and appointed the byoljang as commanders of those ferries (Dongguk Yoji Bigo, vol. 2, Hansong-bu, Kwan-bang).

The large ferries of the upper Han River were Mokgye, Dalchon, and Mokhaeng. Mokgye and Mokhaeng had permanent ferries on the Jukryong route, while Dalchon was on the Yongnam-ro. In the Naktong Basin, the ferries at Naktong, Yochani, Tongwon, Kumho, Yuchon, and Susan were well-known. Among these, Naktong ferry was the most important, and several ferry boats were operated by a dozen ferrymen.

Government control of the Han River ferries was ended in 1902 by the establishment of a private Ferry Company known as Dojin Hoesa. The postal system, begun to be established in 1895, was completely replaced by the modern system in 1913. In other words, the Yongnam-ro began to lose its official function as of 1895. Consequently, the ferries began to be operated by the private company and to serve for the local traffic. The main office was opened in Seoul and thirteen branch offices were located at local ferries, such as Yoju, Chungju, Naktong, Miryang (Dojin Hoesa Jangjong: 1902, p. 1). Despite the large amounts of cargo and large number of passengers transported by railroad after 1905, the local ferry boats remained very active particularly on market days.

According to local testimony, the company had three boats at Kwangjin, three at Han'gang-do, three at Samjon-do, five at Sinchon, and five at Songpa-do. The Han'gang-
do and Samjon-do ferries were used mainly by merchants who carried cargos on draft animals (Kim Unjin, Bae Won-sok; 1974, personal interview). From the Yongnam and eastern Chungchong regions, the travellers and merchants arriving at Pan'gyo took, respectively, the Han'gang-do and the Songpa-do routes. These routes could survive until the day of the construction of Chungang Railroad Line in the 1930s.

The wide and flat ferry boats were generally uniform in size. The boarding capacity of a ferry boat was about 40 passengers with a couple of draft animals. After the introduction of the automobile, such ferries as Han'gang-do, Yoju, Kokgye-do, and Naktong-do used larger flat boats for the crossing of truck and buses, but they disappeared after the construction of bridges.

Bridges are related to roads in many respects. The presence and the quality of bridges affect the mode of transportation. Judging from the gradient, surface, width and alignment of the road, the use of wheeled vehicle on the Yongnam-ro seems very probable. The study of bridges helps reinforce this assumption.

The oldest record of bridge construction appears in Samguk Yusa (memorabilia of the Three Kingdoms). In A.D. 413, during the reign of King Silsong of Koguryo, his engineers built a large bridge in Pyongyang-ju (Samguk Yusa, vol. 1, Kiyi, no. 2), but its size and location remain unknown. The oldest bridge still extant in the Yongnam-ro zone is the Salko-ji dari (bridge) in Seoul,
which was completed in 1483. It was about 90 meters in length and 7 meters in breadth when it was constructed, but a large part of this bridge was destroyed. The Salko-ji bridge on the Chonggye-chon was located between the Dongdae-mun (East Gate) of Seoul castle and the Songpa Ferry. The routes from Kangwon-do through Wonju and Kwangju, Chungchong-do and Kyongsang-do through Sangju and Chungju were focused on this bridge. In the eighteenth century, the military messengers, merchants, and travellers from the eastern and southern regions crossed this bridge.

River-crossing facilities, except for ferries, were classified into three categories: stepping stones, temporary bridges, and permanent bridges. The stepping stones were common in shallow streams. Temporary bridges were built in the early fall and used during the dry season. They served only pedestrians and draft animals. Wheeled vehicles forded at nearby shallows. Such crossings at Dalchon near Chungju and Yuchon near Chongdo had ferry boats in summer, stepping stones, and temporary bridges, together at the same location.

Permanent bridges—wooden or stone—were normally built by local government because the construction of bridges for the people was thought to be one of the important administrative achievements (Mokmin simso, Kongjon 5, Doro). The successive governors of Kwangju constructed the bridges on the Kyognan-chon, Tanchon, Yangjae-chon, and Konjiam-chon in the fifteenth century.
(Songjong Silok, vol. 59, 6:3 Sulsir). These bridges must have been about twenty to thirty meters long and two to three meters wide. A well known stone bridge in Changho-won on the Chongmi-chon was, for example, about two meters wide, and the Dalso-gyo on the Kumho River was about three meters wide which means that they could accommodate wheeled vehicles (Kyonggi-do Jido [Map of Kyonggi province], Kyujanggak no. 10351; Taegu-bu Upji, Kyoryang).

The Man'an bridge in Anyang city was built in the 1790s as a part of the construction of Suwon Castle. This classic model of bridges of the Yi Dynasty was about 20 meters long and 8 meters wide. National Highway 4 between Seoul and Pusan used to pass over this bridge, and the arches of this bridge remained buried until 1979. In 1980, the city government was transferring that bridge stone by stone to another location to make way for new road construction (Fig. 27).

The local maps of the late Yi Dynasty show a number of small bridges on the Yongnam-ro. Some of the bridges were two laned but most of them were only one-lane bridges. The Yongnam-ro between Seoul and Pusan can be divided into eight sections according to modes of transportation. On the road sections between Han'gang-do to Chungju, from Yugok to Kyongsan, from Chongdo to Yuchon, from Yuchon to Miryang, and from Yangsan to Pusan, it was possible to use wheeled vehicles. The mountain routes from Chungju to Yugok, from Kyongsan to Chongdo, and from Miryang to
Fig. 27. Reconstruction of the Man'an-gyo. This bridge, built during the 1790s, is located in Anyang City near Seoul. It was located on National Highway 4.
Yangsan were not passable by wheeled vehicles. In other words, the total length of the Yongnam-ro, about 75 percent (about 300 kilometers) of it could be used by wheeled vehicles.

Mode of Transportation

In the study of transportation and communication, geographers deal with two matters: means of transportation and transportation of passengers and goods. The means of transport reflect the level of technological development, landforms, political-social structure, and cultural tradition. Mode of transportation are include the route, the vehicles, the motive power, and the termini.

In the Yi Dynasty, the increase in the volume of trade was not matched by any improvement in the means of transport. As much use as possible was made of navigable waters for the movement of bulky and heavy cargos, but most precious goods were transported by overland routes. It seems that the use of draft animals was common in the pre-industrial society both in the East and West. Before the turnpike movement, the nobles travelled by horse, and most commoners often had to walk. (Pounds: 1976, p. 300; Peatle: 1955, p. 1).

When a geographer discusses cultures, he can apply a couple of different methods. He can compare one to another, he can try to understand the level of culture in a particular region in a specific time. He can either use a
comparative method or he can focus on a single society at a specific point in time. If he decides to use the first method, he should not hastily label one society as superior to the other one. Societies are not necessarily synchronized in their technological advances or decline. From the cultural geographers' point of view, therefore, the questions to be asked while studying transportation are: "Was it considerably inferior to that of the other societies in the same age?" Was it absolutely primitive according to the level of culture in other aspects? "Did it in fact belong to a declining period in the historical cycle of that culture?"

When one among many societies exhibits backwardness in its transport, geographers need to find the root of the problem in some combination of natural features, common beliefs, social structure, economic organization, and technology of the society. A form of transport even not technologically advanced, if it fits a country, is not a sufficient criterion to judge the level of civilization of their society. Societies can be forward in some technological aspects and relatively conservative in others.

To help correct a biased view of the Korean transport system based on piecemeal information, let us now trace the development of the various modes of transportation in this country. The first stage of technological development of transport in Korea began by the invention of jige or
chige, which has been in universal use among Korean farmers until recently. It still survives in some number. The origin of the Korean jigge, or carrying-frame known as the "A-frame", can be traced back to ancient Mahan (a kingdom in the southwestern province from the third century B.C. to the third century A.D.). The jigge, a simple mean of transportation and a unique invention of Korean farmers and may be related to the development of rice culture in ancient times (Kim Jung-hae: 1974, p. 7). Hulbert, an American scholar who taught at the Korean Royal Academy in the late nineteenth century, described the jigge:

It is safe to say that the Korean jigge is almost ideal in its construction. It is so built that the weight is nicely poised, and is so distributed upon the hips, the back and the shoulders that each part bears its proportionate burden. The result is that a man can carry any load that his legs will enable him to support. The jigge is a unique national institution.... The Korean sets his jigge on the ground, and props it up with his forked stick. Placing the load on the frame, he ties it there securely with a cord that forms an essential part of the apparatus. Kneeling down, he inserts his arms into the two padded loops and fits them on his shoulders. Then leaning forward, he throws the weight of the load upon his back, and the aid of the stick rises to a standing posture. He can easily rise with a weight hundred and fifty pounds, but if it is three hundred pounds or more, he requires the help of another man to rise. (Hulbert: 1969, pp. 257-8)

The jigge became the basic transporting device not only among farmers, but also among the peddlers. According to a retired peddler's testimony, a twenty kilometer journey with his cargo on his jigge was usual (Chong Hae-chon: July 1980, personal interview).
Means of transport and the roads have a reciprocal effect. Pedestrians require little in the way of a path; mounted travellers or driven pack-animals need a wider and better prepared route; vehicular traffic requires still wider and better maintained roads. The harnessing of animals and the use of draft animals, therefore, affected the development of roads, even as the quality of roads set at least temporary limits on the mode of transport.

The origins of draft animals in the history of Korea are not clear, but ethnological and archaeological evidence helps trace them. The ox was the oldest and first harnessed animal, and it retained its importance throughout antiquity (Burford: 1960, p. 7). It was employed for heavy transport, but the ox of ancient and medieval times was smaller and weaker than modern breeds (Leighton: 1972, p. 65). Korean oxen, although quite strong, were smaller than modern American animals. Ancient Koreans used oxen as draft animals, to pull carts or wagons, and ploughs. In tumuli of the Nannang and Koguryo periods located near Pyongyang, there are murals depicting the use of wagons. The ruling class of ancient Choson before the third century B.C. seems already to have used carts pulled by one collared ox and horse-drawn coaches (Han Woo-keun: 1974, p. 13).

The Korean rulers encouraged the breeding of cattle because they were needed for agriculture and the transport of tax grain. Butchering animals was taboo in the Buddhис-
tic Koryo society, and this prohibition may have helped the increase of cattle population. In contrast, the horse population decreased because of the warfare against the Mongols, the Red Turbans, and Japanese pirates. In the late Koryo Dynasty, the government encouraged the breeding of oxen at the post stations for the purpose of agriculture and transport of government properties (Naito: 1934, p. 341).

The political doctrine of the Yi Dynasty influenced the use of the draft animals. Confucians had no food taboos against killing animals. Koreans did not eat horse meat, but they consumed beef before the introduction of Buddhism. The change of political doctrine from Buddhism to Confucianism encouraged butchering of cattle once again. The decrease of the cattle population brought about the replacement of oxen as draft animals by horses in the Yi Dynasty. Cheju Island, which was occupied by the Mongols for horse breeding, produced a number of draft ponies. The Confucian government, however, neglected animal breeding, and this lapse caused many difficulties in the postal system of the Yi Dynasty. Yu criticized, "Animal breeding faces many problems because of lack of herdsmen and because of the pasture managers did not take proper care of the bred animals. Few of the animals survive because several thousand of oxen are butchered everyday in Seoul and other regions" (Ban'gye Surok, vol. 25, Doro-gyorang).

In Korea, the origin of the horse is longer than
history itself, but it is difficult to clarify. The Koreans are culturally very close to the Chinese. The Middle East is known as the site of domestication of horses (Piggot: 1974, p. 22). Horses first appear as draft animals in Sumerian tombs by 2000 B.C. and came into common use in 1300 B.C. (Drower: 1969, pp. 471-3). In ancient China, the Shang tribe had begun to use war chariots by 1500 B.C. (Tarr: 1969, p. 92). It is well known that Korea and China have horses of different origins (Nam: 1976, p. 11). The ancient Koreans were known as horse-riders and horse-breeders, but horse-riding was not common in China. Historians discuss the reasons for the differences between the two sources: the Chinese, agricultural people, used horses to draw wagons, carts, or chariot, while the Koreans, semi-nomadic hunters, rode on horse-back. The Chinese adopted the technique of horse-riding from the Mongols during the periods of Warring States (Nam Do-young: 1975, p. 11). Despite the fact that the culture of the prehistoric Koreans originated from that of the Siberian tribes, it is obvious that the harnessing of horses was of Chinese influence. Horse masks, horse-collars, and iron horse-shoes were introduced from China. The Chinese invented the horse-collar as early as the fourth century B.C. (Leighton: 1972, p. 110) and it was probably diffused into Korea through the Chinese colony of Nangnang. Bronze Age horse mask decorated with a checkered relief pattern was found at Koejong-dong in Taejon.
Iron horse-shoes seem to have been used in ancient Korea. Korean archaeologists found a pair of these shoes in the 98th Silla Tomb in Kyongju in 1974, and date of them was estimated at fourth to fifth century A.D. (Hong: 1974, p. 91-5). Straw sandals for horses were reported in seventeenth century Japan (Leighton: 1972, p. 107), but they were not used in Korea.

Horse breeding became an important industry in the Three-kingdoms periods. Koguryo produced first grade horses in its Manchurian territory, and small, strong draft horses known as kwaha-ma in the Korean Peninsula (Nam Do-Young: 1976, p. 16). Chinese interest in imported fine horses is well documented throughout the history of China, and Korea was one of the horse exporting countries (Piggot: 1974, p. 22, Nam: 1976, p. 67).

Transport and communication began to move faster with the use of horse in ancient Korea. The adoption of the horse-collar, iron horse-shoes, and the development of breeding techniques fostered the increase of horse population. Koguryo organized calvalry with 20,000 horses during the reign of King Dongchon, and the commoners traded their horses at livestock markets (Samguk Sagi, vol. 45, Yoljon, no. 5, Ondal). Horses were no longer exclusively for the aristocracy.

In the Koryo Dynasty, good quality horses were the symbol of the aristocracy. Three grades of horses are listed in the Koryo Kingdom: the jun-ma, probably horses
suitable for war; jungdung-ma, middle grade horses; and ta-ma, horses which could not be used for military purposes, but only as pack animals like ponies and asses. In 1107, the Koryo troops organized her calvary with all merchants when the Yun Kwan conquered the Jurchen tribes (Han Woo-Keun: 1970, p. 152). Commoners were allowed to have second and third grade horses, but these horses were often requisitioned by the troops during wars (Koryo Sa Joryo, King Chungyol, 2, Chonghae, 13:6).

The adoption of the Chinese civil service system began to destroy the horse-riding tradition in the middle of the Koryo Dynasty. Confucian-scholar officials began to infiltrate the royal court, competing with royalty, nobles and military leaders. They were not familiar with horse-riding and liked the sedan chair, or palanquitine. The sedan chair first appeared in Han China. "The Later Han suffered from a shortage of horses.... Wagons drawn by oxen, mules or donkeys came into more widespread use, and on the feeder roads and pathways the Chinese custom of riding in litters borne on men's shoulders prevailed more widely" (Needham: 1971, p. 30).

Japanese piracy in the coastal regions of Korea and China destroyed horse-breeding in the late Koryo Dynasty because most of the important pastures were on the very southern and western islands that were infested with pirates. The government control of horses became inevitable in the early Yi Dynasty. The government regulated the
number of horses at each station, but the actual number of horses was generally lower than the allowance because of horse shortage.

It is not clear whether the government prohibited commoners from riding horses, but they were not allowed to ride horses in front of the Confucian nobles in the Yi society. In other words, the horse became one of the symbol of high status and aristocracy.

Pack animals were specifically used for the transport of luxury articles. A pack horse could carry approximately 90-105 kilograms on its back. Problems of balance, however, require the load to be split into two equal portions. Only materials which were divisible into smaller and lighter loads were suitable to the use of a properly designed kilma (pack-saddle) (Fig. 28). Pack animals could be used in rugged areas not fit for vehicular traffic, but they had to be unpacked each night. The section between Sangju and Chungju was the busiest route in the late fall and early spring because pack animal caravans trasported tax grain from the northern Kyongsang-do to the Kahung granary on the Han River route.

Pack animals were used regularly to transport tribute, which consisted mostly of local products, including fruits, medicinal herbs, precious metals, and marine products. The tributes collected in the counties were conveyed directly to the central government. In many cases, young animals were expected not only to transport themselves from the
Fig. 28. A human back frame (jigge) and pack saddle (kilma).
public pastures, but to earn training as pack animals on the way by supporting the additional weight of goods. A number of pack horses, bred in the southern region, were utilized in this way (Lee Han-gyu: 1974, personal interview).

Wheeled vehicles were one of the great inventions by man during the Neolithic times. The origin of wheeled vehicle is not clear but it could have been invented by societies that needed to move heavy or bulky loads over considerable distances on overland routes (Piggot: 1974, p. 24). The Near East and China could be two centers of origin of wheeled vehicles. The Neolithic people in these regions first domesticated cattle and horses, and solved the power problem by the seven or six millennia ago. The flat landform and dry climates of these regions were favorable to the use of wheeled vehicles.

In spite of their relationship with the Chinese culture, the Korens appeared Westerners to have been ignorant of road building and the use of wheeled vehicles. Even the Sirhak scholars deplored the ignorance of the Yi government officials and people of the use of wheeled vehicles. But few contemporary scholars pay attention to the reason of the poor progress of the wheeled vehicle. Hulbert’s discussion in the late nineteenth century, which has been frequently quoted by foreign and Korean scholars, must be reviewed. He remarked:

The condition of any people can be fairly estimates by the facilities they enjoy for inter-
communication. Judged by this standard, the Koreans must be set down as among the least favored of people. Throughout most of the country the roads are simply bridle-paths of the roughest description, over which it would be almost impossible for a man-pulled cart to pass, to say nothing of a carriage or a cart. These are a few localities where carts can be used within a limited radius, but there are so few compared with the whole extent of the country that they merely form an exception to the rule (Hulbert: 1969, p. 252).

Despite the negative assertion concerning the use of wheeled vehicle in Korea, archaeological, historical, and ethnological evidence prove that, except during periods of political instability, wheeled vehicles were widely used in Korea.

The origin of Chinese wheeled vehicles helps explain the history of wheeled vehicles in Korea. The Chinese may have adopted wheeled vehicles from Caucasoid tribes who had reached Central Asia by the second millennium B.C. (Tarr: 1969, p. 92). The ancient Chinese pictographs, dating from about 1,500 B.C., included characters for the designation of the carriage. The Chinese character for chariot, \( \text{ji} \) is derived from pictographs showing 4 and 6 spoked wheels. The word \( \text{jun} \) meaning "troops" is also derived from the same origin. \( \text{jun} \) is a compound word, that consists of \( \text{mi} \) and \( \text{ji} \) and means "to cover the vehicle." This word indicates that the first vehicle in China was a covered war chariot used by military leaders.

Chinese chariots were diffused into the neighboring countries. It has been theorized that the northern Chinese Plain was the eastern limit of war chariot (Needham: 1965,
The existence of war chariots was not identified in Korea until 1958. The remains of carts which were excavated in ancient Nangnang tombs near Pyongyang, and the two details of murals in the ancient Koguryo tombs were thought as the oldest evidence of the use of wheeled vehicles in Korea. The two mural paintings in ancient Koguryo tombs are known as the murals of Ssangyong-chong (Twin Pillar Tomb) and Muyong-chong (Dancing Tomb). These two paintings show the different shapes of wheels indicating the evolutionary process of the vehicles (Fig. 29). The wheels of the fourth century Ssangyong-chong wagon are thick and small with twelve spokes. Despite its luxury canopy, it is technically inferior to the fifth century wagon depicted in the Muyong-chong which had large and lightly built wheels with fourteen spokes.

This larger wheel reflects a later stage of the development of wheel-making. The primitive form of wheel was solid and heavy. The invention of the iron-tired wheel was revolutionary for the making of wheeled vehicles. The wheel became lighter and thinner but stronger than before. Multi-spoked wheels were made by the fourth century in China and diffused into Korea in the fifth century (Jeon Sang-woon: 1976, pp. 167-8). Chariot fixtures were first discovered near Pyongyang before World War II (Kim Jeong-
Fig. 29. Ancient wheeled vehicles. Ox cart (A) in the mural paintings of Ssangyong-chong (Twin Pillar Tomb) and (B) of Muyong-chong (Dancing Tomb) of Koguryo Kingdom. Ceramic model of war chariot (C) is of the Silla Kingdom, 5th century.
hak: 1978, pp. 152-3). In 1958, bronze chariot canopies and some iron horse trappingns were found in Pyongyang (Kim Jeong-hak: 1978, p. 155). More evidence of chariots, recently found in Taejon, Sangju, Taegu, and Yongchon (Kim Jeong-hak: 1978, p. 155), place the arrival of chariots in Korea as early as the fourth or third century B.C. (Nam Do-Young: 1976, p. 8).

The true nature of a well known chariot-shaped pottery, which was found at Twenty-fifth Tomb in Kyongju, remained a mystery until evidence of war-chariots were found in Korea. The war-chariot, pulled by horse were used by the military leaders of the tribal kingdoms. They could well be the ancestors of Korean waggons and carts.

Murals of Koguryo indicate that oxen were the common draft animals for wagons and that wagons were plainly vehicles of prestige because of their complex structure and elaborate decorations. The political stabilization during the Three-Kingdoms periods encouraged the breeding of cattle and horses and the manufacturing of vehicles for economic and military purposes. During peace-time, the vehicles transported tax grain and tribute, while they were used in wartime to transport military supplies.

Historic records evidence of the making and use of wheeled vehicles. The oldest record mentions King Kim Suro (first century B.C.), the progenitor of Karak Kingdom and his wagon (Samguk Yusa vol. 2, Kiyi 2, Karak-gukgi). The
Samguk Sagi notes an interesting record: "A gigantic fish was caught in the East Sea. It was so big that a wagon was filled with it" (Samguk Sagi, Silla Pong'gi, no. 3, King Silong 115:3). The Silla government taught the people how to manufacture oxcarts (Samguk Sagi, Silla Pong'gi 3, King Nu ji 22:4). Wheeled vehicles seemed no longer the exclusive possession of the nobles and they were broadly used by the commoners. And the Silla Kingdom had a well-developed network for vehicular traffic. During the heyday of Silla, the Kingdom had several thousand wagons and carts. In A.D. 668, King Munmu ordered General Kim Yushin to transport military provisions—4,000 sok (722,800 liters) of rice and 2,000 sok (361,400 liters) of foxtail millet—to Pyongyang during the military campaign against Koguryo forces; 2,000 vehicles were used for that purpose (Samguk Sagi, Silla Pong'gi 6, King Munmu 2:1).

This record suggests a phase of the mobility of the Silla Kingdom. In those days, the main part of the Silla territory was the Yongnam region, although the upper Han Basin and Paekje were newly annexed. That expedition probably only used a fraction of the vehicles available, however, this fact gives us an idea of the remarkable military transport power of that era.

During the Koryo Dynasty, after the unification, roads, sea routes, and inland waterways began the specialized transport of goods. Water transportation took care of bulky cargos, while overland routes handled tribute
and exotic goods. The Buddhistic Koryo society restrained the slaughter of animals. The country-wide religious ceremonies also indirectly facilitates the use of draft animals and wheeled vehicles for overland travel, because the Buddhistic ceremonies affected large fairs in Songdo and other major cities. Large amounts of cargo and a number of people gathered at ceremonial centers with vehicles. The policy of northward conquest required animal breeding for the supply of cavalry and transport of military provisions.

In the early Yi Dynasty, some officials realized the importance of roads and vehicular traffic. During the reign of King Munjong (1450-52), General Kim Jong-so, Chief of Council, ordered the governors of thirty garrison towns in the realm to build 700 vehicles known as whacha (Military Academy of Korea: 1968, pp. 418-19). These vehicles were equipped with armor on the battle field, and could be used for the transport of military provisions. In addition, every county or post station had daecha (large vehicle), pyoncha, and jocha. A daecha was pulled by two men; a pyoncha or a jocha, by one man (Kyongguk Daejon, Kongjon, Jucha).

Officials of the Ministry of War stated (Sejo Silok, vol. 19, 6:1 Mu'o):

"The road from Danwol station in Chunju to Yangjae station is flat enough to use wheeled vehicles. Let the Son'gong-gam (Superintendent of Building and Repairing Department) build vehicles and supply four vehicles to each station on the Yongnam-ro for the transport of general cargos. This was also recommended for other stations in flat areas."
This project was approved by the king, and wheeled vehicles were broadly utilized between towns and stations.

From these official records, one can see that, before the Yi Dynasty the wheeled vehicles were moved by draft animals, while those of the early Yi dynasty were pulled by men. An official record notes; "Wheeled vehicles and men on horseback should be able to get to the Yugok station and from there to reach Seoul (Shinjung Dongguk Yoji Sungnam, vol. 29, Mun'gyong-hyon, Yokwon). This passage suggest two important facts: first, wheeled vehicles were broadly used in the Yongnam region; and second, they were pulled not by horses but by oxen or men.

In the late seventeenth century, the progressive Sirhak scholars began to call for overall social, economic, and political reforms. Although few of them were appointed to royal court positions and thus had little chance to the influence policy making, their ways of thinking were worthy of notice. The main themes of their economic reform were the exploitation of natural resources, the development of trade, and the improvement of the transport system. They maintained that Confucian prejudice against commerce had to be corrected and that manufacturing should be encouraged. The use of the wheeled vehicle was also a key item in their reform.

According to the memorial of Hong Yang-ho to the Throne (Chongjo Silok, vol. 16, 7:7, Chongmi):

The use of wheeled vehicles can multiply man
power efficiency severalfold if we use sungcha for travelling, gyecha in the battle field, daecha for the transport of cargos, yokcha for farming, and sucha for irrigation.... Few tools are more useful than the wheels to the people and the Kingdom. Then why do our people not use them? It is usually said that the roads in our country are rough because of rugged mountains and that we do not have enough draft animals. Few roads in the world, however, are more rugged than that of Chok [Szechwan Basin in China]. Sangyo's four-horse coaches passed through this road into Chengto, and Jegal's mokwu Yuma also drove through this rugged hanging gallery.... The lack of draft animals is not related to reproduction but to wrong way of breeding. The horses of Cheju Island known as daewan is as good as the horses of northern China and certainly not inferior to the fine horses of the Kibuk region. Wheeled vehicles are suitable to pull and the horses are convenient to ride. I have never heard that a horse should be used as a pack animal. It is well known that oxen can pull heavy carts and horses can gallop long distance. To pull means drawing of a cart, but not bearing a heavy burden. We need to build more ox-carts, and we should use horses only for riding.

Hong's comment had little effect on Confucian scholar-officials who prefered to ride in sedan chairs, rather than on horse back or in ox-carts. What was worse, the government and the people showed no eagerness to change their traditional means of transportation, such as jigge and kilma adopted in the late Koryo dynasty. Yi Jung-wan, a renowned Sirhak geographer wrote (Taengni-ji, II, Bokgo-Chongnon 2, Saengni):

Horses are second to the wheeled vehicles, and wheeled vehicles are inferior to ships. Our country is so rugged and has so few plains that the use of vehicles is not convenient. Therefore, merchants in the whole country pack their cargos on horseback.

Yi's remarks about relationship between landform and the use of vehicles is not very convincing. Yu Hyong-won had
better suggestion. He stated (Ban'gye Surok, vol. 25, Sokpyon Sang, Doro-gyoryang):

Road building and maintenance of today are too simple, and nobody pays attention to the narrowness and crookedness of road because of ignorance of the use of wheeled vehicles. The government must engage engineers for road maintenance, and advise the people to use vehicles. The advantages of the wagon and ship are great. Nothing else compares to the wagon among the means of overland transport. Although the landforms of our country are not flat, the vehicle can be used in many areas. Only narrow-mindedness prevents the use of wheeled vehicles. Therefore, the authorities must convince the people to use them.

The Sirhak scholars used to say that greater wealth would come about with advanced technology in transportation, farming, weaving, and shipbuilding. They had high regard for the development of trade. Chong Yag-yong made great contributions to social and economic reform during the reign of King Chongjo (1776-1800). The construction of Suwon Castle was the best chance to test the Sirhak scholars' idea. The project was accomplished by the scholar officials. In the construction of Suwon, several different models of vehicle were used. This fostered the practical return to the use of wheeled vehicles, opening a new era in transport in Korean history. The vehicles were daecha, byol-pyongcha, pyongcha, balcha, dongcha, yuhyong-go, kupan, solma, and yo (Fig. 30).

The daecha, byol-pyongcha, phongcha, balcha, dongcha, and yuhyong-go were wheeled vehicles; the daecha, byol-pyongcha, pyong-cha, and balcha were drawn by draft ani-
Fig. 30. Folk vehicles used in the construction of Suwon Castle, late 18th century (by Hwasong Songyok Uigwe).
mals, mainly by oxen, and others by man (Hwasong Sŏngyŏk Uigwe, vol. 5, Chabi, Kigye). The daecha was a sixteen spoked vehicle, and pyongcha and yuhyong-go had intricate wheels. The balcha and dongcha had solid wheels. The Yo, kupan, and solma were very close to sledges or slide cars.

During the building of Suwon Castle, the Sirhak scholar probably collected very complete data about the vehicles of the country, from both historic records and ethnographic sources. After he retired from office, Chong devoted himself to scholastic life. His ideas of reform are related in his books. He insisted on the importance reforming transport:

The maintenance of road is a matter of the highest priority in transport, and the manufacturing of the wheeled vehicle is the next. If a road is broad and level, three men's power can be a match for that of ten men on a rugged road, and if a vehicle moves smoothly, ten men's power can compare to that of one hundred men without vehicle. (Mokmin Simso, vol. II, Kongjon 6, no. 1, Salim).

Chong taught the people how to make and use vehicles. He explained how to build a joncha (Farmer's vehicle):

Its loading capacity is larger than that of four oxen. Therefore, farmers can lighten their labor by the use of joncha. The difficulties in making this vehicle reside in the hub and spokes of the wheels. With a horizontal board and two vertical square bars, they can make an H-shaped form and put an axle under the board, and then fix the wheels. It will cost less than half a jon. the last steps are making the yoke and frame of the vehicle. (Mokmin Simso, vol. 12, Kongjon 6, Jangjak).

Koreans, particularly the commoners, may have been ignorant of wheeled vehicles in the Yi Dynasty. The Western world was also in same situation. The construction of
wheels until modern times, even in Europe (Cooley: 1974, p. 17). Few of the means of transportation for commoners seem to be documented in either the East or the West. In Korea, the kilma (pack animal) and jigge were only universal among the commoners in the Yi Dynasty; the aristocrats probably had some other means of transportation. Ethnographic sources can provide more informations about the fold technology of transportation (Fox: 1931, pp. 18-9). In the 1930s, there still existed several types of sledges, slide-cars, and wheeled vehicles in Europe that indicate the evolutionary development of vehicles.

The sledge and slide-car are wheelless vehicles. They are usually thought of as snow-vehicles, but they can also be used over bare ground (Leighton: 1972, p. 89). They were used in many parts of the world, both long before and long after wheeled vehicles were invented (Cole: 1954, p. 709). In Korea, slide-cars and sledges were used in northeastern mountain areas. Bergman's photograph shows a slide-car in northeastern Korea in the early twentieth century (Bergman: 1938, p. 97). The mountain people used it for the transport of their harvests from their slash-and-burn fields and for hauling of timber. These vehicles were also used in the Taebaek and Sobaek ranges, and it still survives in soome areas. The balgu, Korean sledge, was a unique carriage which was identified in Mun'gyong county of the North Kyongsang Province in 1974 (Fig. 31).
Fig. 31. Folk vehicles of Korea.
It survived in such counties as Sangju, Yechon, Punggi, and Bongwha in Kyongsang-do, and Yongpung, Chungju, Danyang, and Chongpung in Chungchong-do in the late nineteenth century (Lee Chun-baek and Lee Jong-son: 1974, personal interviews).

The balgu has two main parts: baltong and bangtul. The baltong is the equivalent of a sled. A log of oak, about 30 centimeters in diameter is cut into two parts. The front and rear of the half-logs are trimmed in order to make it smooth. The bangtul is the frame of the balgu. The baltongs under the bangtul are replaced whenever they are worn out. The transport capacity of balgu was about thirty soms of rice (5529 liters), and it could only move about 12 to 16 kilometers in a day. It could not be widely used because it moved slow.

The folk vehicles in primitive form were not made for main roads, but for rutted byways and mountain-slides. The farmers loaded them with fire-wood, hay, grain, and other bulky cargos. The local elders in Mun'gyong county and other areas states that the balgu and solid wheeled vehicles were easy to make and convenient to use in spite of their clumsy shape and slow speed (Lee Bong-gyu and Shim Shang-gil: July, 1980, personal interviews). The carts having small, solid wheels were not widely popular, but rather used by farmers and by children as toy-cars in the counties of Kwangju and Yangji (Pyo Gong-ye: 1975, per-
sonal interview). The reconstruction of this model is based on oral testimony. It appears similar to that of the balcha or dongcha that were adopted in the construction of Suwon Castle. Although it was rarely used in Korea, one-wheeled barow was identified by a British diplomat in Seoul in the late nineteenth century (Carles: 1888, p. 41). It was used by bridegrooms or government officials (Fig. 32).

The most popular wheeled vehicles were ox-carts. They were not popular among the farmers, but they were broadly distributed in the cities and market towns. A British traveller reported, "The Korean ambassador is attended to the China Court by about 200 officers, servants and traders, and the whole escort travellers in carts from Korea around the head of the Gulf of Liatung, occupying 30 days on the journey" (Lockhart: 1866, p. 155). The Korean ox-cart known as dalguji had 16 spoked medium sized wheels and a length of about five meters. It was similar to the daecha. The four-wheeled wagon was not a folk vehicle, but was probably introduced by the Chinese or the Japanese at the turn of the nineteenth century, although it was similar to whacha in the early Yi Dynasty.

**Summary and Discussion**

Road building was one of the important policies in the despotic states because their communication depended upon their road systems. Many imperial states paid attention to the design of roads because roads were thought as the
Fig. 32. Monocycle sketched in Seoul by Charles (W.B.) in 1885.
symbol of imperial power. The quality of a good road was not, however, determined by fancy design, but by its function.

The Yongnam-ro of the Yi Dynasty was no more than a dirt road of simple design. Its location and direction were based on pre-existing routes. It was not only the shortest course between Seoul and Pusan, but also followed the natural routes of the Han and Naktong valleys. the distribution of many major cities along this road reinforced its functions.

The physical landscape of the Yongnam-ro reflects the technological level and mode of transportation of the Yi society. The width of the Yongnam-ro ranged from three to ten meters. The pavement was mainly dirt, but sand and gravel were also utilized. The technique of road cut was uncommon except in the mountain areas because the Korean road designers avoided the unnecessary destruction of the natural harmony in road building. Hanging galleries are also found in several areas.

Natural crossing were bridged, except where large river were crossed by freey boats. The widths of bridges and roads reflect the possibility of the use of vehicles in most part of the Yongnam-or zone except in the sections between Chungju and Sangju, on the Songhyon Pass, and between Miryang and Hwangsan where the width of roads and road surface were not suitable for the use of vehicular traffic.
The Koreans were well known horse breeders and horse-riders in antiquity. Oxen were also important as draft animals through Korean history. According to archaeological evidence, the ancient Koreans utilized horse drawn chariots on the battle field and oxcarts in everywhere. In the sixth century, draft animals and vehicles were no longer the exclusive property of the nobles, but had become widely distributed among the commoners. Under the influence of the Buddhism, the population of draft animals increased remarkably during the Koryo period. After the specialization of the national communication system, overland routes and waterways began to compete in the Koryo Dynasty. The former took care of bulky cargos, while the latter handled luxury goods.

After the introduction of Chinese culture, mainly the Civil service examination system, officials began to ride in sedan chairs instead or carts of horses. The adoption of Confucianism as a political doctrine of the Yi Dynasty was responsible for the decline of mobility in Korea. As the Sirhak scholars suggested, cattle were slaughtered in large numbers, and it consequently caused the decrease of draft animals. On account of the shortage of draft animals, the means of transportation had to be changed from wheeled vehicles to pack animals and A-frames. Consequently, road maintenance was neglected.

In the seventeenth and eighteenth centuries, the importance of the utilization of wheeled vehicles and road
maintenance started to be emphasized. Maintenance of main highways was improved and many of the vehicles used in the construction of the Suwon Castle were subsequently built and used in large number.

During the periods of dynastic zenith, road condition and communicational mobility were in their peak, but roads were in worse condition during the declining period. The negligence of road management after the Yong-Chong Era (1724-1800) began to paralyze the national mobility and finally brought about the end of the Yi dynasty in 1910.
THE YONGNAM-RO:
AN HISTORICAL GEOGRAPHY OF A KOREAN ROYAL ROAD

Volume Two

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CHAPTER VI
ROADSIDE SETTLEMENTS

Origin and Development of the Roadside Settlements

The settlement pattern articulates to the main road, which in many cases follows old, primitive trails (Kohn: 1954, p. 128), but identification of the origin of roadside settlement and even of the road itself remain difficult. Although some historians suggest that the origin of human routes lies in wild animals' passage (Forbes: 1964, p. 7; Roge: 1929, p. 299), geographers emphasize the importance of the man-made road as the focus of the development of roadside settlement. "Routes are more ancient than the village" (East: 1965, p. 59), holds the natural passages of man became the first roads. In the universal model of the relationship of the route and settlement, "The road is branded on the soil. It sows seeds of life—houses, hamlets, village, and towns" (Vidal de la Blache: 1950, p. 371). "Cities do not grow; they are built. The frequent use of old well-known track led to the formation of a beaten path, which became more useful as the number of settlements and their intercourse grew" (Hoskins: 1967, p. 27).

In certain areas or certain times, settlements develop later than the opening of roads, but it is common that routes also go into operation between the settlements. The concentration of communication networks generally coincides with the concentration of settlements. The network at a
given point provides the chances for a settlement to grow. "The road goes towards the urban center, and is dependent on it, but the built-up center is dependent also on the road. The town creates the road, but the road in its turn creates the town, or re-creates it, by displacing it or changing its form" (Bruhnes: 1952, p. 77); geographers cannot think separately about the relationship between the road and human settlement. The relationship is mutually and obligately symbiotic.

The roadside settlements established by the bureaucratic government of the Yi dynasty served to increase its centralism. Although the postal system dated from the late fifth century, it was during that time limited to the Yongnam region. In the early tenth century, the Koryo monarchy established a unified, Korea-wide communication network that consisted of 540 post stations on inland routes and became the model of the postal system of the Yi Dynasty. The Yongnam-ro, established with about 30 stations in the early Yi Dynasty, began to contribute to the renewal of royal integration.

Two groups of roadside settlements can be discerned on the basis of their functions and origins: royal settlements and commercial settlements. The former included such government institutions as post stations (yok), public hostels (won), ferries (do), and express messenger camps (pabal-mak). The latter developed naturally on the nodal points of overland routes or inland
navigation routes. The settlements of jom (inn), jumak or sulmak (tavern and inn), pohaeng-gaekju (high class inn or hotel), sijang-chon (market town), and jin (river port) constituted commercial roadside settlements.

Social and Economic Structure of Roadside Settlements.

The historical study of settlement provides a picture of landscape changes. Certain aspects of social and economic structure provide particularly good evidence for reconstructing the settlement of past times because they are reflected settlement patterns (Butzer: 1973, p. 406).

Social Background

The tradition of Confucian philosophy resulted in an increase stratification of the social structure in the Yi Dynasty. The Korean society in the Yi period was classified into four classes. At the top were the yangban, the aristocrats who monopolized both political power and wealth. Below the yangban class were the chungin (intermediate class people), a relatively small number of petty officials and manufacturers. The third were the sangmin (commoners), the mass of the population in respectable occupations such as farming, fishing, trading, and manufacturing. The lowest class, chonmin, included public and private slaves, actors, shamans, entertainers, butchers, and others having demeaning occupations.

A less crude, traditional classification of
occupations was that of the four people (samin): Confucian scholars, farmers, craftmen, and merchants. In this list, the Confucian scholars included government officials and teachers. Farmers were ranked above everyone except scholars because the government considered agriculture, rather than trade and manufacturing, as the root of society, and because large nume of the yangban nobles were also engaged in agriculture. The Confucian prejudice against commerce, which had such a limiting effect on international trade, also applied to the domestic market.

The social status of the people who were engaged in courier transport system is a question at issue among the scholars. Although some place to the lowest class in the outcast, pariah occupations with butchers or slaves (Kim Young-du: 1965, p. 191), others classify them into the lowest class because of their restricted social status (Lee Hi-bong: 1965; p. 156; Lee Hyoung-suk: 1967, p. 3). Some scholars state that the social status of courier transport personnel was raised only after the Kap-o Reform in 1894 (Kim Wun-tae: 1969, p. 174). These scholars believe, more or less, that postmen, ferrymen, and express messengers belonged to the outcast class.

Even so, one important historic datum suggests that postmen, ferrymen, and the managers of public hostel belonged, rather than to the lowest class, to the commoner clans: they received the government land grant that were not available to the outcast group. Furthermore, they were
eligible for the civil service examination, even if only for those for the lowest positions (Chon Kwan-wu: 1952, pp. 223-25; Koh Sung-jae: 1977, p. 209). The social status of the postal personnel was most likely *sinyang yokchon*, "Commoners in menial services".

In the early periods of the postal system, postal routes were operated by the military troops. The oldest record suggests the management of the postal system was transferred from military to civilian officials in the late fifth century (*Samguk Sagi*, Sila Pongi 3, King Soji 9:3), but this record does not mention the recruitment of postmen.

The Koryo kingdom's communication system, which was the first to cover the whole Korean Peninsula, had a well-organized postal system with 540 stations. The exact number of stations other than first class stations is not available in the sources of Koryo period. Such number, however, can be inferred from the source of the early Yi Dynasty whose was based on Koryo. Based on an average population at each family of about 5 people, the total population of the post stations was probably more than 60,000 (Table 9). It was probably not easy to recruit that large number of people and post them along the route. Consequently, the Koryo government may have recruited them from such lower class settlements as *hyang*, *pugok*, and so on (Naito: 1934, p. 332). Some of these settlements had several thousand members. The origins of those settlements
Table 9

Aggregate Population of Koryo Dynasty Postal System in the Eleventh Century

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Stations</th>
<th>Number of Families</th>
<th>Number of Families Per Class</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>75</td>
<td>900</td>
<td>4,500</td>
</tr>
<tr>
<td>2</td>
<td>28</td>
<td>60</td>
<td>1,680</td>
<td>8,400</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>45</td>
<td>3,150</td>
<td>15,750</td>
</tr>
<tr>
<td>4</td>
<td>110</td>
<td>30</td>
<td>3,300</td>
<td>16,500</td>
</tr>
<tr>
<td>5</td>
<td>150</td>
<td>12</td>
<td>1,800</td>
<td>9,000</td>
</tr>
<tr>
<td>6</td>
<td>170</td>
<td>7</td>
<td>1,190</td>
<td>5,950</td>
</tr>
<tr>
<td></td>
<td><strong>540</strong></td>
<td><strong>11,020</strong></td>
<td></td>
<td><strong>60,100</strong></td>
</tr>
</tbody>
</table>
are not clear, but historians suggest that they originated from the settling of the prisoners of war or naturalized people (Yi Pyeong-do: 1977, pp. 343-44). Beyond these means, civil servants for the postal system were obtained under three common practices. First, the government recruited the people who already lived along the route of the postal service and granted them state lands. Second, former postmen were reappointed by the new government. Third, the government recruited wandering people (Migratory farm labor, peddlers, beggar, and entertainers), mainly former farmers, who had lost their lands during the period of poor administration (The Ministry of Communication: 1970, p. 24). According to official records, the government often recruited the butchers whenever vacancies occurred and granted them lands (Koryo Sa, vol. 82, Chapter 36, Pyongje 2, Chamyok). In that case, the butcher's social status was improved from the outcast class to the commoner in menial service.

The postal system of Koryo and early Japan adopted the T'ang Chinese system, which relied mainly on labor service by the lowest class. The slavery system expanded further, especially in the Three-Kingdoms period. The supply of slaves was abundant during those periods because the Three Kingdoms frequently waged war of conquest. Slave status became inherited in the early Koryo period (Kang Man-gil: 1974, p. 10). The settlement of these people was probably an important task of the Koryo government. The conquest of
the Jurchens (Manchu) in the northern frontier provided prisoners of war. The Koryo government made them settle in the specific areas. They became the inhabitants of the settlements of the hyang, so, and pugok, and many of them engaged in such humble occupations as butcher, entertainer, and artisan. Such historic facts suggest that the Koryo government provided them with lands and occupations in return for labor. In other words, the postal service of Koryo also mainly relied upon these people's labor services as was the practice in T'ang China.

The social status of the yok-ri (petty official of post station) was distinguished from yok-jong (postman or post soldier) in the Koryo dynasty. The yok-jong was treated contemptuously, but the yok-ri's status was higher than that of the commoners: "Among the yok'ris, one who neglects the management of horses is demoted to the status of commoner" (Koryo Sa, King Sukjong, Eight year of his reign).

The yok-jang, post master, was appointed among the yok-ri who could read and write Chinese and speak other foreign languages. Hence, most of them were from richer families in the postal villages. Matriculation at the national university and the civil service examination were opened to them, although their maximum rank was limited to 6b.

The social structure of koryo was destroyed during the second half of the Koryo kingdom. Nobles, Buddhist monks,
and lowest class people increased in number, but the popula-
tion of commoners decreased because of foreign invasions
and maladministration. Many commoners gave up their free-
man status and became slaves on the nobles' estates or
Buddhist temples in order to avoid heavy burden of tax and
corvee.

In the Koryo Dynasty, the lowest class stood outside
the direct control of the king. They did not have their
family names listed in the census register. They were
controlled by their owners—the upper class, the
government, and the temples. Other lowest class people in
the pugok, so, and hyang were controlled by the local
governors. During the late Koryo period, many commoners had
lost their lands and fell into the lowest class. The
sudden increase of the lowest class drained the country its
power and money.

The recruitment of servicemen along the royal highway
became an urgent problem confronting the Yi government.
King Taejo began to organize his new monarch according to
Confucian doctrine, curtailing the influence the Buddhism
and initiating land reforms. He acquired the land and man
power that had to belonged to the monasteries. By land
reform he also weakened the Koryo nobles' materials bases.
Many of the former slave class who lost their freedom under
the maladministration during the late Koryo period became
free men.

King Taejo of the Yi Dynasty reformed the state postal
system and combined it with an elaborate intelligence service. This was supplemented by such developments as the employment of former slaves, "freedmen," and butchers in the service of the state. Former yok-jang became reduced to commoner class. In other words, the government elevated the social status of slaves, butchers and other outcast people to the commoners' level, which meant the lowest limit within the reach of the King's sovereignty. At the same time, these people received farmlands from the government, but they were expected to keep their office and to transmit their occupation from generation to generation under the direct control of the government.

In all parts of the hydraulic society, it is believed, people along the postal roads were compelled to stock the station with food, furnish labor, and to supply the draft animals, sedan chairs, and boats ordered by the relay officials (Wittfogel: 1063, p. 56). In Korea at least, only people in the royal settlements, such as postal stations, public ferries, and public hostels, had such an obligation.

In Ming Dynasty China, the commoners were classified into two major categories: civilian families and military families (Hucker: 1958, pp. 56-57). Civilians paid land tax and performed corvée services. The military families, largely exempt from these obligations, bore the hereditary obligation to provide sons for the army. Troops so obtained were assigned to military administration units.
throughout the empire, where they received training and supported themselves by part time farming on state lands specially set aside for them. The neo-Confucian officials of the Yi Dynasty patterned their communication system on that of the Ming China. The offices to which military officers were appointed were divided into two categories: hereditary offices and circulating offices. The former were low ranking, and they were transmitted directly from father to son without any diminution in rank, while the latter were high ranking ones; they were not filled hereditarily, but by special selection from among the holders of hereditary offices.

Throughout histories both in Eastern and ancient Roman societies, the postal service positions were unfavorably compared to regular soldiers and considered menial and unfit for free people (Ramsay: 1920, p. 81). The Roman Empire posted former slaves along the roads in the service of the state. Frankish monarchy systematically placed royal dwellings at regular intervals along military roads in order to provide supplies for the moving of officials and troops. The freedmen were held on life tenure of office and were controlled by martial law in Medieval Europe (Wittfogel: 1963, p. 211). In Korea, warfare for the gain of slaves was discontinued after the reunification of the Peninsula by the Koryo kingdom. Furthermore, many slaves were emancipated by the Confucian Yi government.
In China, Emperor T'ai Tsu of the Sung Dynasty lifted the burden of postal service from the common people. Soldier ought, it was felt, to be productive in one way or another when not fighting. This idea contributed to the decision of making the postal system for a military operation (Golas: 1966, p. 10). The supposed filial relationship between the royal court and the commoners influenced the development of paternalistic ideas in the postal system. The former slaves of Koryo became commoners as soldiers in hereditary tenure in the Yi Dynasty.

The Yi postal system was distinctive by its egalitarian social structure. In Koryo dynasty, the petty postmaster (yok-jang) were appointed among from the rich natives who had had more opportunities for education. Their social status was higher than that of the commoners. In the Yi Dynasty, however, there was no difference in social standing among the yok-jang, yok-ri, and yok-min because all of them were considered equal in their offices. This also applied to the ferry-men (jin-chok and beacon-fire soldiers (ponsu-gun).

The Yi government acquired manpower and lands under the Confucian reforms at the turn of the fifteenth century. The emancipation of the outcast people in the segregated wards, Buddhist temples, and the nobles' manors provided many advantages to the Yi government. The foundation of communication system was one of them. According to official records, several post stations along the Yongnam-
ro zone were established in former segregated wards; for example, Danwol (near Chungju), Angok (Sonsan), Songbop (Kyongju), Maejon (Chongdo), Wonpo (Yangsan), and Taesan (Kimhae) (Shinjung Donguk Yoji Sungnam, vol. 14, Chunghumok, Kojok, vol. 21, Kyongju-bu, Kojok, vol. 22, Yangsan, Kojok, vol. 26, Chongdo, Kojok, vol. 29, Sonsan, Kojok, vol. 32, Kimhae, Kojok). Ferries and river ports, such as Tongjak, Noryang, Kwangjang, Samjon, Han'gang, Kongam, Yonchon, Chup'yong, Ipo, Kyongwon, Dohung, and Kahung in the Han River route and Susan, Yonsan, Hwawon, Jujisan, Jumul, Susan, Dongwon, and Pusan in the Naktong River, route were also established in formerly segregated wards (Shinjung Dongguk Yoji Sungnam, vol. 22, Yangsan, Kojok, vol. 23, Tongnae, Kojok, vol. 26, Miryang, Kojok, vol. 27, Hyunpung, Kojok, vol. 28, Sangju, Kojok; Nakamura: 193, pp. 28-37).

Despite the formal improvement in social standing of men in the royal service, the stigma attached to that menial service could not so easily be removed. Their social status, therefore, was often contested by court officials. The Annals of King Sejong state; "The postmen and reservists belong to the commoners" (Sejong Silok, vol. 64, 16:4, Kyehae). Government officials tried to lighten the burdens of those service-men. The Ministry of War sent up a memorandum to the Throne: "Please free the petty officers, public slaves, postmen, ferrymen, and salt makers from additional miscellaneous duties. The king approved
this petition" (Sejong Silok, vol. 51, 13:3 Muin). These two records indicate that the postmen and ferrymen who were overburden gained relief from some duties.

The social standing and obligatory duties of the postmen and ferrymen were changed and reconfirmed several times by the succeeding kings of the Yi Dynasty. Annals of King Chungjong clarifies the social status of the offspring of the postmen and ferrymen: "A boy who was born from a male commoner and a post solider's daughter need not engage in postal service" (Chungjong Silok, vol. 1, 1:1 Chungchuk). The Supplementary Great Code (Sok Daejon) defined: "An offspring of a daughter of postman and a male slave, public or private, is a commoner and is to become a postal clerk (Sok Daejon, Hyongjon, Kongjik). But the Annals of King Sukjong shows a different concept toward the offspring of the post slaves: "The King states that the boys born of postmen's daughters and post slaves are to become post slaves like their fathers (Sukjong Silok, vol. 25, 19:4 Pyongmu). These two records indicate that the only way to escape from the menial service was to marry commoners out of the post stations and that the opportunity was limited to the females. Hence, postmen and post slaves had difficulties finding spouses because the male population was always larger, and females living at the post stations and ferries generally tried to marry out of the stations. The female commoners avoided marrying post station men. This also applied to the beacon-fire soldiers.
Every station showed high percentage of single males, and this fact caused demographic problems for the postal system. Consequently, the government had to recruit postmen and ferrymen among the butchers or other lower class people outside the stations. The Annals of King Taejong indicate this social problem: "The people of the Han River post from Kumchon station in Chungju to Huksok station in Gwachon complain to the court that they were originally commoners but are now treated like the outcast people because of their menial service and overburden. What is worse is they have difficulties marrying other commoners" (Taejong Silok, vol. 28, 14:11). It was a common problem among the royal service people (Yang Tai-jin: 1971, p. 35).

After the invasions of the Japanese and the Manchus, the government changed the legal code. According to official records, the social standing of the royal servicemen was lowered even more. Honam Yokji (Gazetteer of the Postal Districts in the Honam Region) states: "The offspring of daughters of the post soliders and the male commoners have to hold postal offices" (Honam Yokji, Kyongyang-ji). This reorganization of the postal system was dictated, it was felt, by the loss of a number of servicemen during the wars. During the Yong-chong era (1724-1800), an extensive social reform was initiated. It was meant to bring the land back to the standard set by the early kings of the Yi Dynasty. Lists of the reform
instituted at the time give us a glimpse at the condition of the people. For example, the grandsons of all female slaves were declared free (Yi Sang-baek: 1977, p. 69).

In the later Yi Dynasty, the social standing of the postmen began to change. They were classified into three groups: the postal clerk (yok-ri), post soldier, (yok-jol), and post slave (yok-no). The Postal clerk consisted of a station master, assistant station master, and several postal clerks. According to Wujong-sa (History of Postal system of Korea), the term yokjol began to appear broadly after the Japanese invasion. It postulates that the yokjol group was composed of post slaves as the result of social dislocation after the war (Ministry of Communication: 1970; pp. 82-88). Yu Hyong-won (1622-73), a Sirhak scholar, discussed the social structure of post offices: "The services of the postal clerk and post soldier are hereditary, but if a son of a post slave is smart and talented, he can be a postal clerk. And if a son of postal clerk is illiterate, he must remain a post soldier. There is no absolute regulation about their social standing" (Bange-Surok, Pyongje Hurok, Wuyok).

Yu's definition of the postmen helps clarify the social structure of the post station in the late Yi Dynasty. When the government recruited the soldiers and ex-slaves into the postal service in the early Yi Dynasty, such titles as the post-master, assistant post-master, and minor official were only related to personal
capability. People who could read and write attended to the duties of office, and others were engaged in physical labor services such as horse-tending, transportation of tribute, and conveyance of sedan chairs. Although the position was limited only to the person himself, it could be transmitted from generation to generation. In the classification of the social statuses during the Yi Dynasty, the people on the post stations, river stations, ferries, and beacon-fire stations formed a distinct social stratum between the lowest class and commoners. Chon defines them as the sinyang yokchon meaning "commoners in menial service" (Chon Kwan-wu: 1952, p. 225).

Despite its legally egalitarian character, the specialization of office was handed down from generation to generation as an unwritten law. The personal office affected the working responsibility, land allotments and other perquisites of social standing. The postal clerk group enjoyed more benefits than others in land grants and official duties. They occupied all the administrative jobs, such as population and horse census recording, corvée-list making, judicial functions, and intelligence activities. The post solider group were engaged in hard services, such as horse-tending, transportation of cargo, and escort of government officials. The post slave group were the servants of the Chalbang's mansion and post office. The post slave was excluded from land tenure, and
he was not recorded on the census register under his family name.

Social reform during the rule of the Taewon-gun from 1864 to 1873 helped improve the social standing of royal settlers. Taewon-gun, the regent for King Kojong, offered equal opportunity in civil service and military examination to men of all classes. Illegitimate sons of the nobles, local government clerks, and slaves passed the examination and got the chance to use their skills and talents (Choe Ching-young: 1972, pp. 62-3). This social reform encouraged the promotion of the postmen. The Kim family at Hwangsan station and Jo family at An'gi station (near Andong City) sired a number of distinguished talents after the reform. According to the genealogy of the kim family, the great-great-grandfather of Mr. Kim Jong-pyo was appointed to the position of commanding general of the central Kyongsang Division. Two of his descendants became provincial governors.

Economic Background

The agricultural land was the only financial basis of the royal settlements. In the early periods of the Yi Dynasty, the government did away with private ownership of lands and established state control over all farmland and classified it into several kinds. The most important categories were the rank land (jikjon), merit-subject land (sajon), local government land (numjon), and garrison land.
Land tenure law gave fixed amounts of land to all men holding government positions, from those in the highest ranks to those carrying out menial tasks, apportioned according to their stations.

The rank land was normally allotted to civil servants and military officers in the higher ranks. It was parcelled in units of from 10 to 150 kyol and was divided into 18 grades (King Seijong Memorial Society: 1970, p. 112). Use of merit-subject lands, limited in Kyonggi-do, could be inherited to the descendants, even after the retirement from the office.

In the early Yi Dynasty, the government placed great the importance on royal settlement. The most fertile lands around a royal settlement were granted to the settlers (Jungbo Munhon Bigo, vol. 145, Jonbugo 5, Tun-jon). The post lands known as the yokdun-to consisted of several different categories: arok-jon, kongsu-jon, kwandun-jon, oeyok-jon, yuyok-jon, majon, and yokkwandun-jon).

Land in the Oriental despotic state was classified into the state lands and private lands. The lands of the state included government-managed "public land", government-regulated land, and government-assigned land (Wittfogel: 1963, p. 272). According to Kyongguk Daejon (Fundamental Statutes for Governing the Country), the land allotted to the royal settlements were the government-regulated land (num-jon). The government-regulated land
was divided into two categories: num-jon I and num-jon II. The former consisted of the station land (arok-jon) and station office land (kongsu-jon), and the latter the postmaster land (jang-jon), assistant postmaster land (pujang-jon), foot-runner land (kupju-jon), and horse-tender land (ma-jon) for the post stations, won-jon for the public hostel, and to-jon for the ferries. The sizes of land units in the royal settlement defined greatly, according to function (Table 10).

These lands were provided to the servicemen instead of salary, office expenses, reception expenses, and other costs of office. The Supervisor of Postal District (Chalbang) was not remunerated as a government official, but had use of the postal fief of his mansion. The purpose of land allotment varied: the station land was allotted to the Supervisor for his official service and to the ferries; the station office land to the Chalbang station for the expense of general administration; postal fief for the reception expenses of the station mansion; and horse-tender land for the families who took care of the post horses. The tillers of government-regulated lands were allowed to lease them to other farmers, but they could not freely sell them. These lands were highly valued because they were both fertile and tax-free.

The land tenure system of the Yi Dynasty was based on the kyolbu system which was classified according to the quality of soil. A kyol remained the basic land unit.
Table 10
Land Allotment of Royal Settlements

<table>
<thead>
<tr>
<th>Settlements</th>
<th>Categories of Land</th>
<th>Size of Land (kyol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>station land (arok-jon)</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>postal fief (kwandun-jon)</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>station mansion land (yokkwandun-jon)</td>
<td></td>
<td>4 to 5</td>
</tr>
<tr>
<td>land of the horse tender (ma-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>first grade horse</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>second grade horse</td>
<td></td>
<td>5.5</td>
</tr>
<tr>
<td>third grade horse</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>station office land (kongsu-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>great road</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>medium road</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>small road</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>postmaster land (jang-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>assistant postmaster land (pujang-jon)</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>footrunner land (kupju-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 to 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>postman land (yokni-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>great road hostel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>medium road hostel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>small road hostel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ferry office land (arok-jon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>great ferry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>medium ferry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>small ferry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Kyongguk Daejon
Each kyol was to produce a fixed amount, hence, a kyol of poor soil was larger than one of more productive land. The most productive lands, therefore, were located in the southern parts of Korea where the climate is warm and humid. The Yi government classified the land into six grades according to its quality (Table 11).

The size of postal land was based on the size of the population. Estimates were prepared of the size of post lands of three stations in the Yongnam-ro zone: Yangjae, a large station and the headquarters of the Yangjae Postal District; Muguk, a medium station; and Yuchon a small station. According to Yu Hyong-won's classification in the seventeenth century, the number of households of Yangjae was between 105 and 135, and there were between 28 and 36 horses. Muguk had about 60 to 90 households and 16 to 24 horses, and Yuchon had 15 to 45 households and 4 to 12 horses (Table 12).

From Seoul to Pusan, there were six large stations, sixteen medium size stations and ten small stations. The large stations had from 300 to 400 kyols, and that of the medium stations from 200 to 300, and that of the small station 100 to 200. The total area should have been about 6,000 to 9,200 kyols. The quality of postal land along the Yongnam-ro ranged from grade 1 to grade 3. Hence, the total area of the postal land was approximately 20,000 acres.

Agricultural land was the economic foundation of the
Table 11

Area of Kyol, According to Quality of Soil

<table>
<thead>
<tr>
<th>Grade</th>
<th>Approximate size in acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.25</td>
</tr>
<tr>
<td>2</td>
<td>2.65</td>
</tr>
<tr>
<td>3</td>
<td>3.20</td>
</tr>
<tr>
<td>4</td>
<td>4.10</td>
</tr>
<tr>
<td>5</td>
<td>5.64</td>
</tr>
<tr>
<td>6</td>
<td>9.0</td>
</tr>
</tbody>
</table>


Table 12
The Sizes of Cultivated Lands and Horse Complements in the Post Stations.
unit: kyol

<table>
<thead>
<tr>
<th>categories of land</th>
<th>Yangjae</th>
<th>post stations</th>
<th>Yuchon</th>
</tr>
</thead>
<tbody>
<tr>
<td>postal fief*</td>
<td>12</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>station land*</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>station mision land</td>
<td>6</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>station office land</td>
<td>20</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>horse-tender's land</td>
<td>187.5</td>
<td>124.5</td>
<td>60</td>
</tr>
<tr>
<td>postmaster land</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>assistant postmaster land</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>foot-runner land</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>postman land</td>
<td>135</td>
<td>90</td>
<td>45</td>
</tr>
<tr>
<td>total</td>
<td>372.5</td>
<td>241.5</td>
<td>127</td>
</tr>
</tbody>
</table>

Number of horses:
Yangjae Station; first grade 8, second grade 13, third grade 15
Muguk Station; first grade 5, second grade 9, third grade 10
Yuchon Station; first grade 5, second grade 4, third grade 6

Source. Ban'gye Surok.
*Chalbang Station only.
royal settlement. The government granted to the staff agricultural lands and also the right of collecting land-tax from the farmers who cultivated other state lands near the station. This land grant, however, had a few strings attached. For example, the government required hereditary menial service from postal staff and forbade their having a side job except farming. The people in the royal settlement were also provided with woodlands for collecting firewood, pasture for horses, dry fields for vegetable gardening, and building sites. In other words, they were both government servants and farmers fixed on postal lands.

During the early Yi Dynasty, there seems to have been no serious problems in subsistence, but continuing poor administration after the Japanese invasion began to destroy the quasi-self-sufficient mode of life of the royal settlers. The size of state-granted lands began to shrink because of the encroachment of the nobles and neighboring farmers. Overworked postmen, ferrymen, and other royal servicemen often sold the land itself or the right of tax-collection and fled, despite the law that government-regulated land could not be privately bought and sold (Ilsong-nok, vol. 105, 5:9). Chong, an eighteenth century Sirhak scholar, was concerned about the decrease of state lands by the increase of "hidden-land" (Mok'min Simso, Hojon 6, Chonjong). Chon estimates the total area of the hidden-land at about 31,000 kyo'l, or between 100,000 and 200,000 acres (Chon Kwan-wu: 1952, p. 189). The post
lands in the late nineteenth century occupied 26,846 kyöls, or about 120,000 acres, 35.7 percent of which lay in the Yöngnam région and twenty percent in the Chungchong-do (Shin Yong-ha: 1979, p. 116). Although this estimate does not include the whole Hamgil-do, the extent of post lands had become smaller than that of the hidden-lands. If one adds the acreage of hidden-lands to post lands, the approximate area of the post lands in the early Yi Dynasty was more than 60,000 kyols, or about 350,000 acres.

The landholding of the average postman is important to understand the social and economic condition of the postal system. The total number of postmen was 98,863 in 1808, except for Hamgil-do (Ministry of Communication: 1970, pp. 69-74). If the landholding of the postman (0.27 kyol) is compared to that of average farmer (0.5 to 1 kyol of first grade land), the post men would have belonged to the poor farmer group in the Yi society (Table 13).

In the early Yi Dynasty, the average landholding of a postman's household was about 3 acres, but it was later decreased to about 1 acre (0.27 kyol). Although the living conditions of the royal servicemen was already poor in the early Yi Dynasty, it became worse in the late period. The royal court tried to relieve the royal settler's hardship. Historic records note: "Five sok (47.6 gallon) of salt was issued to the each post station by the government" (Sejo Silok, vol. 36, 11:6, Ulyu): "The lands that belong to the closed temples and other state lands were allotted to the
<table>
<thead>
<tr>
<th>Items</th>
<th>Kyonggi</th>
<th>Chungchong</th>
<th>Kangwon</th>
<th>Hwanghae</th>
<th>Pyong'an</th>
<th>Hamgil</th>
<th>Cholla</th>
<th>Kyongsang</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of postal lands in 1895</td>
<td>2,930</td>
<td>5,360</td>
<td>1,280</td>
<td>3,220</td>
<td>2,090</td>
<td>?</td>
<td>2,450</td>
<td>9,570</td>
<td>26,900</td>
</tr>
<tr>
<td>(percent)</td>
<td>(10.9)</td>
<td>(19.9)</td>
<td>(4.9)</td>
<td>(11.9)</td>
<td>(7.8)</td>
<td>(9.1)</td>
<td>(35.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population of postmen in 1808</td>
<td>3,570</td>
<td>19,170</td>
<td>9,034</td>
<td>5,316</td>
<td>4,351</td>
<td>?</td>
<td>17,146</td>
<td>40,776</td>
<td>98,863</td>
</tr>
<tr>
<td>(percent)</td>
<td>(3.5)</td>
<td>(18.8)</td>
<td>(8.8)</td>
<td>(5.2)</td>
<td>(4.3)</td>
<td>(16.8)</td>
<td>(39.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average land holding</td>
<td>0.8</td>
<td>0.28</td>
<td>0.15</td>
<td>0.6</td>
<td>0.5</td>
<td>?</td>
<td>0.15</td>
<td>0.25</td>
<td>0.27</td>
</tr>
</tbody>
</table>

post stations" (Sok Daejon, Hojon, Chejon); and "A number of postmen and their families are starving because of severe famine in the Yongnam-ro zone. The government relieved the people" (Hyojong Silok, vol. 19, 12:5, Ulmi).

The farmers in the Yi Dynasty could be classified into three groups according to the size of land holdings: wealthy farmer, average farmer, and poor farmer. The wealthy farmer held over 2.5 acres in the Yongnam region, 4 acres in Kyonggi-do, 7 to 9 acres in the northern regions. The average farmer had at least half the acreage of the rich farmer, and the poor farmer had less than half the acreage of a wealthy farmer (Kim Yong-sop: 1970, p. 431). One kyol of grain field for a five working persons and a quarter kyol for a husband and wife constituted the ideal sizes of farmland in the intensive farming system of the Yi Korea (Kim Yong-sop: 1974, p. 21).

Despite the reconstruction of the post stations during the Yong-Chong Era, the government could not regain most of the hidden-lands. Some nobles and rich landlords continued to encroach upon post lands in the Kyongsang-do (Table 14). Yugok Station, the largest and most important station in the northern Yongnam region, used to have a large population. According to historical sources, Yugok had 469 postmen and their families and 83 post slaves in the early Yi Dynasty (Sinjung Donguk Yoji Sungnam, vol. 29, Mun'gyong-hyon, Yokwon). The size of the population of Yugok Station in the last Yi Dynasty is hard to estimate
### Table 14

**Distribution of the Post Lands in the Yongnam-ro Zone in 1900**

<table>
<thead>
<tr>
<th>Stations</th>
<th>paddy field</th>
<th>dry total</th>
<th>total households</th>
<th>rice field</th>
<th>dry total</th>
<th>remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yugok</td>
<td>43.62</td>
<td>26.47</td>
<td>70.09</td>
<td>82</td>
<td>0.53</td>
<td>0.32</td>
</tr>
<tr>
<td>Nakwon</td>
<td>25.42</td>
<td>8.0</td>
<td>33.42</td>
<td>135</td>
<td>0.187</td>
<td>0.06</td>
</tr>
<tr>
<td>Nakyong</td>
<td>36.38</td>
<td>4.84</td>
<td>41.22</td>
<td>150</td>
<td>0.242</td>
<td>0.033</td>
</tr>
<tr>
<td>Naktong</td>
<td>59.73</td>
<td>3.38</td>
<td>63.11</td>
<td>92</td>
<td>0.649</td>
<td>0.038</td>
</tr>
<tr>
<td>Gopyong</td>
<td>16.98</td>
<td>7.38</td>
<td>24.36</td>
<td>77</td>
<td>0.22</td>
<td>0.096</td>
</tr>
<tr>
<td>Songhyon</td>
<td>20.69</td>
<td>21.71</td>
<td>41.4</td>
<td>151</td>
<td>0.138</td>
<td>0.144</td>
</tr>
</tbody>
</table>

**Sources.**
1. Mun'gyong Yugok-Yok Jondap An (Kyujang-gak Library no. 16429), 1907.
because three official records give different numbers. According to the gazetteer of Mun'ggyong County, there were 1238 postmen and 367 post slaves in Yugok station in 1899 (Mun'ggyong-gun Upji: 1899, Yokwon). In 1907, only 82 family names were listed on the land register of Yugok station (Mun'ggyong Yugok-yok Jondap An), but these official records may be unreliable because they show extremely different population sizes, even though they were compiled at almost same periods. The number of post clerks at Yugok Station also differs from record to record; for example, 56 post clerks are recorded on Mun'ggyong Upji, while 32 on Yongnam Yokji which was edited in almost same period (Yongnam Yokji, Yugok-do). According to Mr. Lee's estimation, there were about 700 to 800 people in Yugok station in the early 1900s (Lee Han-gyu [76 years old]: 1974, personal communication at Yugok-ri).

Among the 82 families on the land register, 40 were small farmers. According to the native testimony, the Pak and Ro families actually dominated in population size, but only 8 of the former and 3 of the latter were entered in the cadaster. In other words, the post land had been encroached upon by the nobles or neighboring farmers, and the postmen became their tenants in the late nineteenth century.

The Nakyang, Nakwon, and Naktong stations near Sangju were also in a condition similar to that of Yugok. The Kim and Pak families of Nakyang station and the Kim family of
the Nakwon Station originally held majority (Mr. Lee Jom-hak [75 years old]: July 1980, Mr. Kim Tae-jin [55 years old]: July, 1980, personal communication at Nakyang-ri and Nakwon-ri in Sangju County). Among the 135 family names on the land register of the Nakwon station, about 50 to 60 families were postmen and others were absentee landlords. The seven families of the Cha clan at Nakyang Station had 60 percent of the total lands in their own names, and 9 slaves emancipated in the Kap-o Reform of 1895 held about 20 percent of the post land.

The Gopyong station near Taegu became a target of nobles' encroachment, as at Nakwon and Nakyang. The postmen's families, such as Kim, Yi, and Do, became the tenants of the landlords or left the station in the early twentieth century. Among the fifty Kim families, 54 percent had already lost their lands. Of the 24 Yi families, 16 and of 9 Do families had also became landless farmers, according to the land registers (Kyongsang Pukdo Chilgok-gun Yokdun Jondap Done Yongjong Songchaek, Gopyong Station). The Soh clan and Bae clan encroached upon the post lands of the Gopyong station.

The Naktong station used to have about 150 households in the late nineteenth century (An Ki-yong: 1974, personal interview). The An and Shin families dominated in this station in those days. The land register of the Naktong station shows three large landholders who do not have their own family names (Sangju-gun Gak Dunyk Jondap Yongjong Dose
Such names as Wangdol-y, Dolsoe, Uldong-y, and Obok-y were common name among slaves. According to Mr. An's testimony, they were the Yun clan's private slaves. Generally speaking, however, this village suffered less from the encroachment of local nobles. Hence, the An and Shin families, still dominate in this village.

Songhyon station, a real exception, shows few large landholders. In this station, the Yi was the only noble clan. Although this station was not encroached upon by the local landlords, the average landholding is extremely small (Kyongsang Pukdo Chong-do-gun Kagyok Dundap Yongjong Dose Jakin Songmyong Songchaek, vol. 2, Songhyon Yok). According to natives testimony, this station lost most of its traffic in the late nineteenth century because the express messenger route passed through nearby Paljoryong Pass, which directly connected Taegu and Chongdo, and this station became a periodic market (Mrs. Kim Son-i [84 years old] Mr. Ho Yong-sok [54 years]: July, 1980, personal interviews).

Little information is available about the post land of Kyonggi and Chungchong provinces in the late nineteenth century; the same situation can be in still other stations. Some conclusion can, nevertheless, be reached as follows: first, the post lands were the target of encroachment by the local landlords, particularly in areas beyond the effective reach of the central government in the late Yi
Dynasty; second, the stations near the large towns, which were the local landlords' power bases, had a greater frequency of absentee landlordship; third, the existence of a slave landlords in some station remains questionable because local inhabitants state that slaves were not real landowners, but owned of only nominally; finally, the public hostel lands were usurped before the Japanese invasion.

Royal Settlements

The size of land allotments influenced the population size of the royal settlements. The allotment of land related to the grade of the road and the station which were determined by traffic flow and strategic importance. In the early Yi Dynasty, the number of horses and of households at a station depended on the grade of the station and that of the road that it served. This ideal legal arrangement was, however, altered by land-tenure corruption and by the ineffective administration of the late Yi Dynasty. Land grants to the official servicemen on the royal highway were state lands and tax-free. Their purchase and sale were illegal, but some servicemen sold their lands and became wanderers because of overwork and poverty. The collapse of the land tenure arrangement damaged the postal system. Encroachment contributed to the depopulation of post stations and to functional disorder on the Yongnam-ro.
Post Stations

The basic administrative structure of the post station was equivalent to that of the county office; both had miniature replicas of the central government. Each postal district had a slightly different system, but the arrangement generally included the offices of Personnel (I-bang), Revenue (Ho-bang), Rites (Ye-bang), War (Pyong-bang), Justice (Hyong-bang), and Works (Kong-bang).

The personnel officer handled receptions for the Chalbang, sending official documents to the county offices, and management of the census taken every three years. The revenue officer registered the postal lands, and kept the list of postmen's schedules and the duties for the Chalbang. The ritual officer managed the stores at the Chalbang mansion. His duties also included setting up receptions for envoys, supervising mourning on the anniversary of the death of the king, and the celebration of the national holidays. The military officer registered post horses, checked the horses every month, recorded the riders' names, and selected the horse tenders (maho). The police officer managed the prison and punished the criminals. The public work officer oversaw the construction and maintenance of the office, buildings, and bridges.

Besides these offices, every station established several other offices. The country patrolmen policed the road and its neighboring districts with their guards. At
the post station there were stables and couriers ready for the relay service under the authority of a station master. Other specialized positions included the courier (sungbal), secretary of the Chalbang office (tong'in), guards (saryong), body guards of the Chalbang (kujong), attendants (pojong), foot runners (kupju-jol), police officers (pogun) (Yongnam Yokji, vol. 1, Songhyon-do, Kimchon-do, Jayo-do, vol. 2, Yugok-do, and Hwangsan-do).

The number of postal clerks or petty officials differed among Chalbang stations. The stations on the Northwestern Route had more servicemen and their offices were also more specific than those of the Yongnam-ro. There were professional craftmen, butchers, falconers, fisherman, herb doctors, hosts and hostesses of tavern and tea-houses, cooks, and black smiths. (Kwanso Yokji, vol. 1 Daedong-do and vol. 2 Ochon-do, sayok). These specialized duties at the Northwestern stations were provided for the accommodation of the Chinese envoys. In the early Yi Dynasty, the Yongnam-ro stations also had similar special servicemen for the reception of the Japanese envoys, but the number of special servicemen was decreased after the Japanese invasion. In the eighteenth century, a staff of between 70 and 100 people service in most Chalbang offices. Yugok had the largest number of petty officials in the Yongnam region (Table 15).

Judging from its land grants, its number of servicemen and the size of its population, the Chalbang district
Table 15
Offices of the Chalbang Stations in the Yongnam-ro Zone in 1800

<table>
<thead>
<tr>
<th>Offices</th>
<th>Secretary</th>
<th>Clerk</th>
<th>Police</th>
<th>Foot</th>
<th>Runner</th>
<th>Master</th>
<th>Slave</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yugok</td>
<td>32</td>
<td>14</td>
<td>15</td>
<td>10</td>
<td>7</td>
<td>1</td>
<td>22</td>
<td>101</td>
</tr>
<tr>
<td>Hwangsan</td>
<td>20</td>
<td>12</td>
<td>16</td>
<td>15</td>
<td>?</td>
<td>1</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Kimchon</td>
<td>10</td>
<td>?</td>
<td>?</td>
<td>6</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yonwon</td>
<td>50</td>
<td>20</td>
<td>?</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

Sources 1. Yongnam Yokji, vol. I and II.
2. Chungju Upji

Table 16
The Comparison of Local Administrative Centers and Postal Districts

<table>
<thead>
<tr>
<th>Counties and Postal Districts</th>
<th>Population (person)</th>
<th>Area of Farmland (kyol)</th>
<th>Administrators' Rank</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwangju</td>
<td>54,710</td>
<td>6,070</td>
<td>2b</td>
<td>county</td>
</tr>
<tr>
<td>Yangji</td>
<td>8,700</td>
<td>1,010</td>
<td>6b</td>
<td></td>
</tr>
<tr>
<td>Chungju</td>
<td>107,700</td>
<td>21,370</td>
<td>3a</td>
<td></td>
</tr>
<tr>
<td>Mun'gyong</td>
<td>10,240</td>
<td>2,800</td>
<td>6a</td>
<td></td>
</tr>
<tr>
<td>Sangju</td>
<td>70,020</td>
<td>15,500</td>
<td>3a</td>
<td></td>
</tr>
<tr>
<td>Chilgok</td>
<td>12,800</td>
<td>3,300</td>
<td>3b</td>
<td></td>
</tr>
<tr>
<td>Yangsan</td>
<td>12,178</td>
<td>3,690</td>
<td>4b</td>
<td></td>
</tr>
<tr>
<td>Yugok</td>
<td>3,800</td>
<td>1,170</td>
<td>6b</td>
<td>postal district</td>
</tr>
<tr>
<td>Kimchon</td>
<td>3,400</td>
<td>721</td>
<td>6b</td>
<td></td>
</tr>
<tr>
<td>Hwangsan</td>
<td>7,970</td>
<td>2,040</td>
<td>6b</td>
<td></td>
</tr>
</tbody>
</table>

Sources 1. Yoji Doso, vol. I and II.
2. Yongnam Yokji, vol. I and II.
office could easily compare with the seat of a county, but the Chalbang's official rank, 6b, was no higher than that of lower county magistrates.

Generally speaking, the government underestimated the importance of the postal district for several reasons. First, the postal district yielded no revenue to the state because most postlands were tax free. Second, the inhabitants of the postal district were only commoners in menial service, while counties included nobles, scholars, landlords, and many specialists. Third, each county seat was the power base of the local nobles, while post stations could make no such claim. From the Confucian bureaucrats' point of view, the counties were a treasure of resources and talents, while post stations were nothing but servicemen's settlements (Table 16).

The Yi Dynasty postal settlements differed from other settlements in at least two more respects: both their location and their population were predetermined by the central government. First, they did not reflect their residents' choice of a site, and secondly, their population, chosen on the basis of the function of the postal service, did not have the heterogeneity that marked other types of settlements.

Some of royal settlements did not front on royal roads, despite their having been established for the convenience of courier transport. Among about fifty
stations in the Yongnam-ro zone that were investigated for this study, only half of them developed on the main road; the others stood up to several hundred meters away from the highway (Fig. 33). For example, the Yangjae station lay about 300 meters from the road; Yonwon, about 2,000 meters; Yosong, about 1,000 meters; and Oso, about 500 meters. Not only post stations, but public hostels presented the same problems for travellers. Hence, some scholars made a recommendation to the court to correct that situation (Ban'gye Surok, Pyongje Hurok, Wuyok).

The relationship between the road and settlement influenced the pattern and function of the settlement. If the development of a settlement has an intimate association with road, the direction of road influences the settlement pattern, and the function of the settlement is generally commercial. Among the post stations established on the main highway, only Kimryang, Muguk, Yongan, Anbo, and Yugok showed the pattern of gachon, or linear pattern of typical road settlements. In other words, the distinctive and general pattern of the royal settlements was irregular and clustered.

Comparing a post town to a local administrative town, we find many differences. They show distinct contrasts in their street patterns, the distribution of functional districts, the size and type of buildings, and other characteristics. Two typical settlements in the Yongnam-ro zone, Yugok among the post stations and Chongdo among the
Fig. 33. Distance relationships between the post stations and the Yongnam-ro, 15th century.
administrative towns will serve as examples. The population of Yugok was about 1,000, while Chongdo was about 1,500 (3,800 including the population of outside the city wall) (Baek Rin [ed.]: 1971, p. 34; Yoji Doso, vol. II; Kyongsang-do, Mun'gyong-hyon). Yugok was the Chalbang station of a district that covered six counties. Nineteen stations were under the control of the Yugok Chalbang.

The Chongdo magistrate's jurisdiction was limited to Chongdo County, but its population of about 35,000 was about ten times that of the Chalbang's jurisdiction (Baek Rin: 1971, p. 38). The official rank of the Yugok Chalbang was 6b, while that of the Chongdo County Magistrate was 5b.

This administrative distinction shows the contrast between the two settlements. First, Chongdo was fortified by town wall about 4 to 5 meters high, while Yugok was not. Chongdo had three gates, symbols of authority, while Yugok had two simple gates one at either entrance of the Yongnam-ro. Second, Chongdo was a well-planned urban settlement, while Yugok was a clustered, rural settlement. Chongdo was divided into several functional districts, such as the civic quarter, the education quarter, the market area, the manufacturing area, and the residential area. Its street pattern was a modified square-grid (Chong-jon), which radiated from the government office through the gates to other towns. Yugok had only two functional districts—the station office area and the residential area (Fig. 34).
Fig. 34. Comparison of local administration center (Chongdo) and central station of postal district (Yugok).
Third, the inhabitants of Chóngdó included officials, noble landlords, rich merchants, scholars and teachers, artisans, and specialists, while those of Yugok were postmen only. The social and economic standing of postmen could not be compared with that of the townsmen. Except the Chalbang's mansion and offices, all buildings in Yugok were small cottages with straw-thatched roofs. The Chalbang's mansion and his office were, even so, still inferior in size and building materials to the official buildings of the magistrate of Chongdo. Farmers and merchants in Chongdo lived in relatively comfortable tile roofed houses, but none of the postmen did.

Despite the success of the highway as a consequence of the dedication of its postmen, ferrymen, and public hostel managers, it was the people of the other settlements who got the economic profit. Strictly speaking, the function and pattern of the nearby commercial settlements had the real characteristics of roadside settlement, while the royal settlements looked like farm villages, even when they had larger populations.

Settlements of the Government Accommodations

The availability of rest areas tended to stabilize routes. Travellers on the roads were provided with overnight accommodations. The subsidiary postal relay system had as its main task the maintenance of local government mansions (kaek-gwan), post station mansions (yok-gwan), and
public hostels (won) for either government officials or envoys from foreign countries.

The constant influx of officials from the central government insured a steady flow of travellers and an unceasing demand on the state's servants. Government accommodations existed to provide food, lodging, and horses for them. Government accommodations differed in size: the government mansion was generally the largest, the post stations mansions was next in size, and the hostel was the smallest.

The local government mansions accommodated mainly higher officials and foreign envoys. The government mansion of Miryang County embraced an area of about 450 square feet and consisted of three rooms (Shinjung Dongguk Yoji Sungnam, vol. 26, Miryang Dohobu, Nujong). The Sangju mansion, the largest and finest in the Yongnam region, consisted of a main building that had several rooms, a daechong (Korean wooden floored vestibule), a kitchen, a tower, a pavillion with a room, and a bathhouse (Shinjung Dongguk Yoji Sungnam, vol. 28, Sangju-Mok, Kungsil). Sonsan county had two mansions: the Puk-gwan (North mansion) and the Nam-gwan (South mansion). The North Mansion had three rooms, while the South Mansion had five rooms. Each of them had a kitchen, bathhouse, a storage building, and horse stables (Shinjung Dongguk Yoji Sungnam, vol. 29, Sonsan-Dohobu, Kungsil).

The counties of Sangju, Sonsan, and Miryang developed
on the nodal points of the Yongnam-ro. In the early Yi Dynasty, more than half of the Japanese envoys travelled along the Pusan-Miryang-Sonsan-Sangju route, and two thirds of the overland traffic in the Yongnam region focussed on Sangju.

The postal guest house also served higher officials in the early Yi Dynasty, but it gradually fell into disrepair in the late Yi Dynasty and became a facility mainly for low-ranking officials (Choi Jae-gyong: 1975, p. 49). The size of postal guest house depended on the amount of traffic of the route. The most important and busiest postal guest house at Yugok station was about 700 square feet in size (Lee Han-gyu: 1974, personal interview), Kyongan's postal guest house was about 300 square feet (Pyo Gong-yi: 1974, personal interview). Yangjae, Yongwha and Hwangsan might have had large guest houses, but Yonwon and Songhyon had smaller guest houses because they were not busy stations. Postal guest houses were mainly established at the Chalbang stations, but such medium stations as Muguk and Muhul also had them.

The hostel, the most popular accommodation, had a long historic background. The Silla monarchy established its postal system in the fourth century. It established of accommodation facilities subsidiary to the communication system. After the unification of the Korean Peninsula, travel and transportation increased, partly because of the reorganization of local administration. Government
officials were dispatched to the new territories. The pilgrimages of the Buddhist monks and believers and trading activities became important during United Silla. Rest areas and facilities, therefore, were expanded along with the postal routes. Daero-won, the oldest rest-house in Korean history, already existed in the early seventh century. Historic records note: "Daero-won ["large watch-tower"] is located at about six ri south of Kyongju". A large sign, which was written by Kim Saeng, the greatest calligrapher of Silla, was hung on the facade (Shinjung Dongguk Yoji Sungnam, vol. 21, Kyongju-bu, Yokwon). Some old hostels functioned not only as rest-houses but also as watch-towers.

The reunification of the Korean Peninsula by the Koryo monarchy led to an expensive development of the communication system. The Silla network system had focused on Kyongju and had thus presented a serious disadvantage to the Silla because the royal focus was located too far to the southeast. Beyond that, the Silla communication system was not suited for the control of the people in the new territory. After the reunification, administrative communication was given priority in the Koryo postal system. The transmission of court orders to local governments and the transport of officials and of tax grain stimulated the development of accommodations along the highways. Three factors stimulated the development of the hostels. First, hostels were established at such strategic
places as the foci of overland routes, ferries, mountain passes, and places of commercial importance. Second, the prosperity of Budhism as a state religion promoted the development of the hostels. Third, the Chinese T'ang and Sung dynasties already had a model of postal system with such resting facilities that Koryo could adopt and improve to suit their own purposes.

In the Sung Chinese system of public accommodations, "Official hostels existed to provide food, lodging, and horses for official travellers. These official hostels varied greatly in size, but in general, they seem to have been quite small. A traveller who had intended to spend the night at a given hostel might find on his arrival that another party had already moved in, leaving no room. He would then be forced to seek other lodgings. On the main roads at least, this does not seem to have presented a serious problem. Mounted relay stations often had facilities to put up official parties" (Golas: 1966, p. 8).

Choe Pu, a Confucian scholar official during the reign of King Songjong in the early Yi Dynasty, drifted on the Yellow Sea to the east coast of China. He travelled through Nanjing, Hwangho Valley, Beijing, and Manchuria. In his diary, he describes the public hostel system in the late Sung dynasty:

Twenty-eighth day. Chai Yung said to me, "The laws of China are strict; if there is the slightest delay, it will bring punishment upon us. It is raining hard now, but we cannot stay
longer. Neither Chai Yung's military officers nor my own staff were willing to go. They said, "The rain today is extremely heavy, and the water is overflowing the gorges. We cannot go." Chai Yung said, "The waters of the gorge are in flood, but they will recede. The supplies of this station, moreover, are limited. Yesterday's unscheduled stay has already strained its resources." (Meskil: 1965, p. 67).

Chinese officials could hardly depart from their official travel schedules because most hostels did not have extra food and rooms. Official travel was not, however, difficult except in rough weather, because there was a rest-house with food and drink every ten li (about three miles). Every thirty li (ten miles), there was an overnight rest-house with lodgings and a government grain store. Every fifty li there was a market and a station with an abundant stock of supplies (Needham: 1971: vol. 4 [Part I] p. 35). In other words, temporary or emergency stops were possible about every five kilometers, and overnight lodging was available every fifteen kilometers on main roads in China. In the Koryo system, emergency stops were possible every four kilometers, and overnight accommodations were found every twelve kilometers.

The effect of the Buddhist temples on the development of the hostels has been remarkable in the history of Korea. The temples, with wide lands in their possession, engaged in money-lending, brewing, livestock breeding, manufacturing and trade and thus played an important part in the national economy. The monks enjoyed exemption from military duty, corvee, and taxes. They freely travelled to
the temples in the remote regions. The temples were also the centers of culture and education for the nobles, as well as being philanthropic institutions.

Such commercial, cultural, and religious activities fostered the development of hostels near the temples. First, the temples needed accommodations for both the monks and commoners on pilgrimages. Second, the temples needed accommodations at their entrances to gather the travelling merchants. The hostels run by the temples offered free lodging to the traders and acquired business information in return. Hostels also played a role as trade centers and banks for commoners. Third, hostels fed poor people during famines and cared for sick travellers. Although China and Japan were also Buddhist nations in those days, they did not have an institutionalized hostel system like that of Koryo. The won (hostel) system of Koryo can be compared with that of hospices in the medieval Europe.

The historic and religious backgrounds of the hostels are reflected in the place names that include won. Most hostels in the Koryo period had Buddhist names that were related to the names of main temples. For example, Chonsu-won in Kaesong (Songdo) originated from Chonsu-sa temple. Daesa-won at Anbo, Daebi-won, Miruk-won at Miruk-ni, and Kwanum-won at Mun'gyong are some examples.

The political doctrine of the Confucian Yi government was ideologically very similar to that of modern socialist governments. The nationalization of personal property was
its major concern. During the Silla and Koryo monarchies, private ownership of land, buildings, and businesses were allowed or encouraged by the government, but the early Yi government controlled all of them. This policy was applied to the hostels, which had originally been established by the monasteries and local nobles.

The accommodation system for the traveller in the Koryo Dynasty had included both government and private institutions. During the reign of King Songjong of Koryo (982-997), the government established guest houses (kwan) for the official travellers (Koryo Sa, vol. 78, Sikwha-ji, Konghae Jonsi), but hostels were established as private institutions. In the late Koryo periods, Japanese pirates threatened the transport of the tax grain by the sea route and finally plundered the southern and western coastal regions. The government transferred the transport route for tax-grain from the sea to overland. Many guest houses and postal guest houses (cham) were built by the government; hostels were also established by the temples at regular intervals for the couriers on the overland routes (Ban'gye Surok, vol. 3, Jonje Hurok I, Choun).

In the early Yi Dynasty, the Confucian government closed most temples. Consequently, most monks could not maintain their social standing. The new Yi government, then, reorganized the temples as public institutions similar to the hostels. According to King Sejong's Annals, "Appoint the former monks as managers of hostels. Let them
establish hostel buildings and manage them" (Sejong Silok, vol. 40, 10:4 Musul). These former monks were called woniju (head monks of won), as opposed to regular public hostel keepers (wonju). It is not likely that all of the hostels were established and managed by the temples or monks. Some historic records note:

Tongjong Lim Yo, a chief Buddhist monk and Yun An-yong, a former judge, had mercy on the travelers. They built Pan'gyo-won and a fortification around the settlement. They gave the poor with food and cared for sick travellers (Taejo Silok, vol. 9, 5:3, Sinyu).

Gyontan-won is located in the northern part of Hogy County; it was the most important strategic point and the most rugged mountain road in Kyongsang-do. There used to be a won building near the Gyontan Rapids but it was in such disrepair that it could not be used by the travelers. Hwaom Daesa, Jin Gong, built a house for the travellers. The building was divided into several categories of rooms—one for honored guests, one for married couples and the others for single travellers. It also included horse stables. He also built a pavillion on the southern foot of Gyontan Rapids. The travelers rested under the shade of pavillion and enjoyed the scenery. (Shinjung Dongguk Yoji Sungnam, vol. 29, Mun'gyong-hyon, Yokwon).

The won house [Yosong-won] on the outskirts of the town [Mun'gyong County seat] is very impressive. The small pavillion to the east of the main building is Min Kwang-mun did. (Shinjung Dongguk Yoji Sungnam, vol. 29, Mun'gyong-hyon, Yokwon).

Historic records indicate that the hostels were voluntarily built by the Buddhist monks and sometimes by Confucian nobles. The Pan'gyo-won was the joint venture of a Buddhist and a Confucian. The hostels were established along the Yongnam-ro in the early Yi Dynasty. Pan'gyo-won
was located about twenty kilometers south of Seoul, and the other two were near the Saejae Pass.

The nationalization of hostels as subsidiaryy institutions of the postal system was completed during the King Songjong's reign. The Yi government ordered the governor of Seoul metropolitan area to appoint the managers of hostels in his jurisdiction from among the people living near them. Other local governors also got the same order from the central government (Kyongguk Daejon, Kongjon, Wonwu).

The government plan for establishment of settlements at regular intervals caused problems. Many hostels were already established by Buddhist monks or local nobles. Most of these were located on the linkages, mountain passes, ferries, or at natural foci, but there was no geometric order of distribution. When the Yi government established its postal system, the officials included the former private hostels in their new system but they showed less concern about the locations of former won houses. New and old hostels were sometimes clustered. For example, the Saejae Pass had two won settlements on the northern slope and four on the southern slope, and the Kwan-gap-chon Pass had four hostels; the distance from one hostel to another ranged between 500 and 1,000 meters.

The frequency of hostels differed from area to area, although the government had theoretically fixed them according to the grades of roads. Such nodes as Jomchon in
Mun'gyong County, Naksong-dong near Sonsan town, and Miryang had more than four hostels in each settlement, despite their situation on third grade routes (Kim Su-gi and Pak Hi-pal: July, 1980, personal interview; Board of Education of Sonsan County: 1977, p. 34).

The government allotted tax-free lands (wonju-jon) for the operation of hostels. Such allotments accorded 1.35 kyol (about 3.6 acres) to the manager of each hostel on the first grade road, 0.9 kyol (2.4 acres) on a second grade road, and 0.45 kyol (1.2 acres) on the third grade road (Kyongguk Daejon, Hojon, Jejon).

On one hand, many hostel (won) settlements began to decline in early sixteenth century, and on the other, new hostel settlements were established after the Japanese invasion in 1592. In some counties along the Yongnam-ro, government mansions and postal guest houses were destroyed during the Japanese invasion. The government built five hostel buildings at Haepyong on the outskirts of Sonsan, instead of the rebuilding former government mansion of Sonsan County (Board of education of Sonsan County: 1977, pp. 346-54).

Despite the efforts of the Yi government, the reconstruction of the postal system, particularly of the won settlements, began to decline. Perhaps the reason for the decline of the won system was its limited number of users (Yi Sang-baek: 1977, p. 507). Yu Hyong-won, a Sirhak scholar in the seventeenth century, criticized the...
government policy on the won system:

The government established won houses on the sites of former chamjom [postal guest house], and allotted lands to the managers of won houses. There was no need to establish won houses instead of chamjom because they had the same function. Those so-called won houses do not have managers any longer by now and are abandoned or almost destroyed. Their original purpose was good, but nobody could agree on their management. After the death of their founders, most of the won buildings were neglected. Even most of government buildings provided only firewood and drinking water, but none of them had managers since the reign of King Sukjong" (Ban'gye Surok, vol. 1, Jonje 1, Bunjon Jolmok, Chamjom).

There might be several reasons of the decline of the won system. First, the hostel was no more than a subsidiary institution of the post system, and it did not attract the government officials attention. Even the post stations were in trouble, not to speak of the hostel settlements. Second, the change of social and economic structure after the invasions of the Japanese and Manchus resulted in the desertion of hostel managers. The hostel managers could not survive with a small piece of land. In the Koryo monarchy, the postal guest houses and hostels had commerce as a subsidiary function, but the Yi government repressed commercial activities. Third, the managers of hostels were appointed among the Buddhist monks or commoners. The social status of the hostel managers had been higher than that of the postmen. The monks belonged to the upper class in the Koryo society, and the first commoner-managers were not freedmen, but real commoners. Their social standing began to degrade, however, even though the
position of hostel manager was not entailed upon the son of the manager. Fourth, most hostel settlements that had not been established at strategic points of transportation began to decline because of decreasing use. Other hostels also experienced a similar decline because most travellers lodged at private accommodations of various types. Competition with these commercial lodgings was impossible.

The social and economic changes after the wars caused the corruption of the won system. There were perhaps about 1,300 hostels in the early Yi Dynasty, but most of them were closed or reorganized as commercial inns during the eighteenth century (Choi Jae-gyong: 1975, p. 36). The hostel buildings came to be used as commercial inns, taverns, storage buildings, or local government offices; still others were abandoned. Kim Jong-ho, a late eighteenth century geographer wrote: "According to the old system, the government established hostels along the roads in order to accommodate the official travelers, but most of them were closed after the Imjin Woenan [Japanese invasion in 1592-98] and Pyongja-nan [Manchu invasion in 1638]. They were turned into commercial inns and either retained the names of the former hostels or adopted similar ones" (Daedong Jiji, vol. 26, Jongni-go). These new commercial inns had such local names as jumak, yacham, or yojom (Mokmin Simso, vol. 4, Wonchon).

In the early Yi Dynasty, about 50 won settlements totaling 200 hostels, occurred along the Yongnam-ro. Among
them only 12 hostels survived in the eighteenth century, and only a few of them remained in the nineteenth century (Fig. 35). Historic gazetteers show the location of the hostels along the Yongnam-ro.

From north to south, there were nine hostels occupied the mountain passes of the Yongnam-ro. The Saejae Pass had four, one of them located in the hot spring resort to Anbo. The Soya Pass had two, the Paljo-ryong Pass, one, and the Jakchon Pass, two. There were two hostels at public ferries, one at the Naktong River in Hamchang County and the other at Yuchon Ferry on the Miryang River. Finally, another stood in the hot spring town of Tongnae, near the south coast and the terminus of the Yongnam-ro.

Onjong-won at Anbo was almost equidistant from Seoul and Taegu, and it was very close to Chungju. The travelers from Seoul stayed their last night before crossing the Saejae Pass, and people from the Yongnam region spent their first night in the Han Basin at this resort area. Anbo persisted in its role as a major hostel until the abolition of the postal system in 1910, after which it became (and remains) an important resort town.

The settlement pattern of the hostels was hard to reconstruct in general because the won system was abolished about two hundred years ago and because it was not well documented. The only sources of information are historic records, remains of old hostel buildings and the oral testimony of local elders. The hostel settlements were
Central station of postal district
Post station
Boundary of postal district
Hostel in the 18th c.
Hostel in the 16th c.

Fig. 35. Postal stations and hostels along the Yongnam-ro, 16-18th centuries.
generally small villages or hamlets that include one to five hostels, along with other residences.

The size of the hostel itself ranges from a couple of hundred to a couple of thousand square feet. Choryong-won in the Saejae Pass, one of the largest won on the Yongnam-ro, has been abandoned in 1913, but its fortifications and the old road surface through the main gate were well preserved until 1978. The landscape of this area was recently drastically altered by the construction of a historical park in the Saejae Pass.

The fortification of Choryong-won survives on the east side of the Yongnam-ro about 500 meters up to the Juhulgwan gate. Although some parts of the stone wall of Choryong-won are destroyed, the building technique, using natural stones of different sizes, can be identified. The fortification forms a rectangle of about 40 by 50 meters; it is about 3 meters high and about 3.1 meters thick. The main gate fronting the Yongnam-ro, located almost in the middle of the front wall, was about 2 meter wide and 2.5 meter high. Choryong-won was furnished with a stately gate: two large sliding doors, painted with the symbol of Taoism, were surmounted by a gate tower.

The inside of the stone wall was used as vegetable garden by a neighboring farmer after the destruction of the hostel buildings. Although the ground was leveled by the farmer, some large corner stones remain, and the different levels of the building sites are visible. The higher
ground on the north site are covered with large corner stones than the lower ground on the south which indicates the higher ground was occupied by some stately buildings (Fig. 36).

Building "A" may have been a section for the higher officials, "C" for the nobles who were not in the civil service, and "D" for the accommodations of petty officials and commoners. "B" was horse stable and "E" was farrier's shop. Building "A" and "C" were palatial tile-roofed houses, while the others were thatched houses. Local elders did not remember exactly the number of rooms in the Choryong-won, but there were probably about ten rooms for the nobles and another ten rooms for the commoners (Fig. 37).

This hostel was very important and well-known as the meeting and farewell place of the new and old provincial governor of the Kyongsang-do. Kyogu-jong, the pavilion where the old governor handed over the government seal to the new governor was about two hundred meters north Choryong-won.

Another large hostel on the northern slope of the Saejae Pass was Sinhye-won. In the heyday of the Yongnam-ro, Sinhye-won settlement prospered as commercial roadside village and subcounty seat. According to the local elders' testimony, Sinhye-won became a commercial inn settlement after the eighteenth century to 1910. Following this change, alteration of hostel buildings was not regulated by
Fig. 36. The Choryong-won site on the Saejae Pass. This was the largest hostel on the Yongnam-ro and it was destroyed during the 1910s. Presently under crops.
Fig. 37. Examples of a hostel (won).

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the government. For example, the tile-roof was changed to a thatch cover, and the building size was reduced.

The buildings of large hostels were divided into the manager's residence and the guest quarter. The manager's residence, separated from the guest quarter, consisted of two bed rooms, kitchen, vestibule, storage, and jar stand.

The guest quarter consisted of main building and some accessory buildings, such as horse stable, storage, bath house, pavilion, and gate tower. The main building generally had several hot-floored rooms that were used as bedrooms, a reception vestibule, narrow porch, and a kitchen. The hot-floored room was covered with characteristic Korean feature, a heavy, thick, specially prepared, yellow paper. The vestibule served as reception hall, dining hall, and tavern.

Names of the former won settlements suggest their origin, location, and other characteristics. Won-names in the Yongnam-ro zone can be classified into four categories: geographical, personal, religious, and unclassified names (Table 17).

Some hostel settlements named after their founders or first managers such as Chong Gum (Kwangju), Kim Ryang (Yong'in), Kwon Il (Chong pung), Yi Gap (hwanggan), Yi Bang (Jinchon), Kim Jang (Kyongju), Ko (Kyongju), Yi Jo (Uihung), An Song (Koryong), Paek Gyu (Koryong) and Yi Taek (Koryong) (Shinjung Dogguk Yoji Sungngam, vol. 6, Kwangju, vol. 10, Yong'in, vol. 14, Chongpung, vol. 16, Hwanggang,
Geographical names derived from government institutions, bridges, pavilions, villages, towns, mountain passes, rivers, and directions. Nine hostels were named after the post stations, two after the warehouses, and one after a market. The names of mountain passes and ferries dominate, followed by those of villages. Names of compass direction and relative direction are generally found around the local administrative towns in the Yongnam region. The county seats of Yangsan, Onyang, Kun'wi, Bian, Miryang, Kaeryong, Changnyong, Sangju, Sonsan, and Kimhae had at least one won having the element tong (east), so (west), nam (south), puk (north), sang (upper), or ha (lower). Sangju, the busiest town in the northern Kyongsang-do had four wons—Tong, So, Nam, and Puk—outside the corresponding city gates (Sinjung Dongguk Yoji Sungnam, vol. 22, Yangsan, vol. 23, Onyang, vol. 25, Kun'wi, Bian, vol. 26, Miryang, vol. 229, Kaeryong, vol. 27, Changnyong, vol. 28, Sangju, vol. 29, Sonsan, vol. 32, Kimhae).
Table 17
Classification of the Names of the Hostel in the Yongnam-ro zone

<table>
<thead>
<tr>
<th>Classification</th>
<th>Kyonggi-do</th>
<th>Chungchong-do</th>
<th>Kyongsang-do</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>personal names</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>geographical names</td>
<td>15</td>
<td>9</td>
<td>78</td>
<td>102</td>
</tr>
<tr>
<td>religious names</td>
<td>17</td>
<td>12</td>
<td>59</td>
<td>88</td>
</tr>
<tr>
<td>unclassified names</td>
<td>8</td>
<td>5</td>
<td>42</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>29</td>
<td>192</td>
<td>262</td>
</tr>
</tbody>
</table>

Source: Shinjung Dongguk Yoji Sungnam vol. 6-39.

The religious names can be classified into three categories: geomantic, Confucian, and Buddhist. Geomantic names include those of such mythical animals as the dragon, or Chinese phoenix. The Confucian names have such literary meanings as Anbin ("hospitality to the guest") in Sangju, Indok (Confucian "virtue") in Kwangju and Kwachon and songju, Sungyu ("Veneration of Confucius") in Snagju and Chilgok, Songdok ("Cultivation of virtue") in Miryang, and Pumin ("Making the people rich") in Umjuk. The hostels bearing such names were either established or named by Confucian nobles during the late Koryo Dynasty or the early Yi Dynasty.

The 55 Buddhist names, the most popular and most widely distributed of the surviving hostel names fall into
three groups. Most common are hostel named after temples; e.g., Kwan'um-won in Umjuk and Mun'gyong; Miruk-won in Yonpung, Kaeryong, Chungju, and Kwangju; Chondok-won in Yonggung and Muryong-won in Miryang. Some hostel names have Buddhist titles, including that Buddhist monks either founded or managed those inns; e.g., Daebi-won in Ansong; Sinhye-won in Yonpung, Yanghye-won in Umsong, Okmi-won in Bian, Nak-won and Yoje-won in Chongdo, Kwanghye-won in Indong, Yakpo-won in Songju, Kwansim-won, Mira-won, and Botong-won in Mun'gyong. Finally, some hostel names reflect the Buddhist monks' charitable relief to travellers in distress—je, "to have mercy on the people" and bo, "to relieve the people"; e.g., boje, pungje, kwangje, yoje, kyongje, hongje, botong, and bosi.

The distribution of won settlements was closely related to road pattern. Seoul and provincial capitals or other strategic towns where many roads had larger concentrations of won settlements. Hostels were also, however, established in the remote mountain areas and near ferries. Hostels along the Yongnam-ro occupied certain characteristic locations. First, about fifty won settlements stood on or below mountain passes. Second, about twenty-five won settlements occupied ferries and river crossings without ferry boats. Third, twenty-four won settlement stood outside city gates. Fourth, eight won settlements augmented post stations in these cases, the nodes of transportation where several won buildings and
other residential buildings formed three-forked or cross-shaped agglomerations. Sixth, two won settlements provided shelter at hot spring resorts.

Social Structure of the Royal Settlements

The social characteristics of the royal settlement originated from its historic background. In the early Yi Dynasty, emancipated slaves were resettled at post stations. Some commoners living near the postal routes were also appointed to the public service at post station of ferries, ex-monks were appointed as managers of public hostels. Except for the office of won manager, this labor service was compulsory and entailed. Such elements contributed to the uniqueness of the structure of royal settlements. To give a first glimpse into the homogeneity of class and labor and the consanguinity of kinship patterns of such settlements, an overview is needed.

Entailed labor service in a fixed settlement produces a homogeneous community. Confucian prejudice against certain occupations gave birth to segregated settlements, such as those of the butchers, entertainers, and shamans all of whom were treated as outcasts. The inhabitants of royal settlements had homogeneity of occupation. Officially, they were post soldiers, ferrymen, or managers of public hostels, but they were originally farmers. They were provided state lands for their living and in compensation for operating the communication system.
The land use patterns indicated their subsistence farming system. Agriculture was not commercialized in their settlements (Table 18). The landholding of the average family was about 1.8 acres, although nearly a third of households did not have their own farmlands. The minimum size of farmland for the subsistence of five family members was about 2.65 acres in Kyongsang-do, the most fertile land, as mentioned above, but, except at the Naktong station, most postmen had smaller alnds and lacked the minimum standard for making a living (Sangju-gun Gak-dunyok Jondap Yongjong Dose Songchaek).

In the early Yi Dynasty, the government provided enough lands for support royal settlers and supplied as well as salt and other marine products. But following Japanese and Manchu invasions, most post stations and ferries lost population, and most public hostels were closed. The government recruited people from nearby settlements or resettled postmen from other stations, but could not, however, handle the land deficit because large part of state lands had been encroached upon by the local nobles and had become the "hidden-lands".

From the beginning, the government prohibited commercial activities among the royal settlers. Even so in the later periods of the Yi Dynasty, many periodic markets developed at surviving or former post stations. A few former won settlements, which became commercial accomodations, developed as market towns or local cultural centers.
Table 18

Landuse Pattern of Post Station in 1900

<table>
<thead>
<tr>
<th>stations</th>
<th>area of farm-lands</th>
<th>number of households</th>
<th>average land-holding</th>
<th>rice paddy (%)</th>
<th>dry field (%)</th>
<th>woodlands and pasture (%)</th>
<th>vegetable gardens (%)</th>
<th>building lots (%)</th>
<th>others (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naktong</td>
<td>307</td>
<td>92</td>
<td>3.4</td>
<td>49</td>
<td>28</td>
<td>19</td>
<td>0.8</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Nakyang</td>
<td>198.6</td>
<td>150</td>
<td>1.3</td>
<td>63.5</td>
<td>8.6</td>
<td>---17.9---</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Gopyong</td>
<td>118.7</td>
<td>77</td>
<td>1.5</td>
<td>76.1</td>
<td>?</td>
<td>14.6</td>
<td>9.3</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Chongtong</td>
<td>164.2</td>
<td>118</td>
<td>1.4</td>
<td>85.6</td>
<td>1.2</td>
<td>2</td>
<td>---7.8---</td>
<td>1.7</td>
<td></td>
</tr>
</tbody>
</table>

Sources. 1. Sangju-gun Gak-dunyok Jondap Yongjong Dose Songchaek.
Most people in the royal settlements depended almost entirely on their land for survival. They cultivated rice, barley, wheat, soybean, and other grains. Many stations had public vegetable gardens. Every station also produced small amounts of cotton, hemp, and raw silk for domestic use and as cash crop. The Yongnam-ro zone from Chungju to Pusan was a well known area of sericulture. Kahung, Anbo, Yosong, Yugok, Naktong, Songhyon, Oso, and Hwangsan stations had mulberry plantations. Tobacco also earned cash incomes at Yuchun, Bunhaeng, Yong'an, Kahung, Anbo, and other stations in the Sobaek Mountains. The royal settlers could trade these cash crops for necessary items.

Almost all royal settlements strongly showed the characteristics of consanguinity due to the entailed positions, but it has never before now been documented because earlier studies of consanguinity had been confined to local noble's villages in Korea. The study of the kinship of royal settlers presents problems because places of the origin of the settlers' names are not clear, although most residents insist on the accuracy of their genealogies. In addition, these settlements keep few cultural traditions, historic monuments, and historical records, such as those kept in nobles' settlements. Beyond that, many royal settlers have moved out their native places since the abolishment of the traditional communication system in the Kap-o Reform in 1895. Despite these problems, the time has come to extend the study of
kinship beyond nobles' settlements; Korean villages fall into two kinship categories: 1) a village where the majority has the same surname and the same family origin and 2) a village where two families dominate (Ryo 1975, pp. 71-9). The noble's settlements have distinct characteristics as kinship villages: they have head families who have clan genealogies and family shrines in the middle of the settlements. In post stations, however, the only historic records are the registers of the census and of tillers of post lands that were prepared in the last period of the Yi Dynasty.

Among the eleven stations having adequate records based only on the land registers, Yugok, Nakyang, and Nakwon do not appear to support this theory of consanguinity, but the other eight stations do fit the second category of Ryo's classification (Table 19). The Im family at Kumso station formed almost 60 percent of the total population, and the Kim family at Chongno, the Jo at Anki, An at Naktong, and Chong at Songhyon dominated their respective settlements. Although most royal settlers do not have each genealogies, the descendants of the former servicemen and other local residents remember valuable information. According to local testimony at Jwachan, Yugok, Songhyon, Naktong, Gopyong, Nakyang, Nakwon, and Anki stations, the major family names of shown on the land registers were generally postmen, except at Yugok station. Yugok station was dominated by two families, Pak and Ro in
Table 19

Consanguinity of the Post Stations
in the Yongnam-ro Zone in 1900

<table>
<thead>
<tr>
<th>stations</th>
<th>number of families</th>
<th>largest family:</th>
<th>second largest family:</th>
<th>others (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>name percent</td>
<td>name percent</td>
<td></td>
</tr>
<tr>
<td>Jwachan</td>
<td>18</td>
<td>Yi 33</td>
<td>Kim 20</td>
<td>34</td>
</tr>
<tr>
<td>Yugok</td>
<td>82</td>
<td>Yi 24</td>
<td>Kim 20</td>
<td>56</td>
</tr>
<tr>
<td>Nakwon</td>
<td>135</td>
<td>Kim 37</td>
<td>Pak 10</td>
<td>53</td>
</tr>
<tr>
<td>Naktong</td>
<td>92</td>
<td>An 45</td>
<td>Shin 14</td>
<td>41</td>
</tr>
<tr>
<td>Gopyong</td>
<td>77</td>
<td>Kim 34</td>
<td>Yi 23</td>
<td>43</td>
</tr>
<tr>
<td>Songhyon</td>
<td>151</td>
<td>Chong 42</td>
<td>Yi 16</td>
<td>42</td>
</tr>
<tr>
<td>Chongno</td>
<td>135</td>
<td>Kim 49</td>
<td>Jo 18</td>
<td>33</td>
</tr>
<tr>
<td>Kumso</td>
<td>73</td>
<td>Im 59</td>
<td>Kim 14</td>
<td>27</td>
</tr>
<tr>
<td>Anki</td>
<td>190</td>
<td>Jo 46</td>
<td>Kim 20</td>
<td>34</td>
</tr>
<tr>
<td>Chongtong</td>
<td>118</td>
<td>Yi 28</td>
<td>Kim 25</td>
<td>47</td>
</tr>
</tbody>
</table>

Sources. 1. Kak-gun Yokto Songchaek, Jwachan-Yok.
3. Mun'gyong Yugokyok Jondap An
8. Yongchon-gun Dunyok Dose Yongjong Songchaek.

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the nineteenth century (Yi Han-gyu: 1974, personal interview). Among about 200 households, the two families formed more than 30 percent of the population each, but many of them lost their lands and were omitted from land register in 1904. Yi and Kim, two families on the land register of 1904, were the postal clerks and neighboring farmers (Yi Han-gyu and Bae Sam-yong: 1974, personal interview). They stated that there were originally three postmen families, Pak, Ro, and Shin, but they could not support their statements with official records.

The farmlands belonging to the Yugok station were divided into several areas: Daegok, Daesa, Kongam, Buljong, Kunjol-gol, and Yok-gwanjon. The lands at Daegok and Yok-gwanjon, near the station office, were cultivated by the Pak, Ro, and Shin families, but others were occupied by the Yi, Kim, Baek, and Bae families, (Mun'gyong Yugok-yok Jondap An). The census records of 1914 for Mungyong County also supports the idea that the Pak, Ro, and Shin may have been large families in the eighteenth and nineteenth centuries. Based only on the land register of 1904, the three families represented only 15.9 percent of the landholders, but according to the census of 1914, they represented 31.5 percent of the population of Yugok. This discrepancy occurred because encoached lands did not show on the land register. Hence, the census gives a more faithful representation of the percentage of names. We can then assume that, in 1904, the actual percentages of these
three families as landholders was much higher (Mun'gyöng-gun: 1973, p. 524).

The homogeneity and consanguinity of the royal settlements influenced the development of egalitarianism and self-government. In the early Yi Dynasty, the limit of administration by the central government was at the county under a magistrate. A county consisted of several wards (myon), which had a number of natural villages known as ri, chon, or dong. These wards and villages were self-governing units under their own leaders. The leaders were generally appointed by the magistrate from among the nobles or elected in a village council that consisted of the representative of the nobles and commoners (Kim Wun-tae: 1968, p. 39). These leaders were generally called chonwi, tumin, jwasang, or dongjang, names that differed from region to region.

The self-government of post stations differed somewhat from that of the ward, because the ward was administrative unit based on territory and population, while post stations lacked a territorial base. In the ward, the social structure was complex, including noble, commoners, and the lowest class. In the postal district, each station was equivalent to the ri or dong of the county, but the only social status was that of the commoners in menial service. Post stations thus formed real egalitarian structure. Even though each station had a station master and an assistant station master who were appointed by the supervisor of the
postal district, they were no more than the heads in their office. The village leaders known as tumin in Chungchong-do and chonwi or tumin in Kyongsang-do were elected from among the retired postmen. They surveyed population, checked births and deaths, and investigated the damage of famine and public conduct disorders (Kim Jin-gon, Yi Jom-hak, and Hoh Yong-sok: July, 1980, personal interview).

The census record in 1970 shows the change of population structure. The Yugok Station was incorporated into Jomchon, a nearby commercial and administrative center of Mun'gyong County. Many people moved into this village after a coal mine was discovered there in the 1930s. Among the 665 pupils in the register of Yogok Elementary School, only 15 percent are the descendants of former postmen, while the others are miners' children (Nam Jun-gun: July, 1980, personal interview).

Royal settlements have experienced similar changes through urbanization and industrialization. Yangjae, Naksaeng, Yongwha, Kuhung, Kyong'an, and Kimryang stations in the Seoul-Suwon metropolitan area, Yonwon, Yong'an and Danwol stations in Chungju City area, Bom'o, Gopyong, and Amnyang stations in the Taegu metropolitan area all became residential or industrial areas. Sapyong, Pan'gyo, Sinwon and other former hostel settlements experienced similar changes. In these settlements, the proportion of native population is very low because of urban encroachment.

Despite the drift of population since the start of
urbanization in the 1960s, elders and local historians have gathered valuable information, making it evident that most royal settlements were indeed dominated by one or two families.

Roadside Commercial Settlements

In the history of the development of commerce, primitive types of trade by travelling merchants date from an early time. Archaeological evidence proves the existence of overland trade among tribes all across Korea. Travelling merchants date back at least to the United Silla kingdom or early Koryo Dynasty. Merchant groups were mobilized for public works during the Silla Kingdom; they carried salt to remote areas in the Koryo Kingdom (Pak Won-son: 1965, pp. 31-32). Their trade activities were based on regional centers with sizable hinterlands. Commission merchants began to participate actively in business in the early Koryo Dynasty at least as early as tenth century (Pak Won-Son: 1968, p. 9). The hosts of the inn, especially hostels, for the travelling merchants paid taxes in the capacity of an agent for his guest.

In the late Koryo Dynasty, there existed an accommodation system for the convenience of travelling merchants. Some of the accommodation were Buddhist hospices and the commission agents' houses. The hospices were nationalized in the Yi government, but the commission agent system survived, despite the Confucian prejudice against commerce.
The development of commercial activities and periodic markets stimulated the development of roadside commercial settlements. Such settlements as river ports (jin), periodic markets (chang), private inns or taverns (jom or jumak), which began to appear after the Japanese invasion, are quite different from the royal settlements. The river port settlements contrasted sharply with ferry settlements; the market settlements, with post stations, and the inns, with the hostels.

Market towns were the most important roadside settlements in their pattern, function, and origin. The statement, "Highways, or rather, commerce and politics, have created cities" (Vidal de la Blache: 1952, p. 229), does not apply very well to the Yongnam-ro zone because most of the important commercial town were not located to the Yongnam-ro but at the meeting points of branch roads, and even county seats were often not located directly along the Yongnam-ro, but stood a little distance away from it.

Since the introduction of geomancy, the Korean nobles selected their dwellings and settlements at geomantically propitious sites. Yi Jung-whan, Sirhak geographer in the eighteenth century, recommended as an ideal site for nobles' settlements a place surrounded by mountains on all sides, except the south:

If a small basin or mountain valley is surrounded by range after range, it is the most propitious site. If the field in the basin is fertile and wide enough, it will be an excellent site. The sun and moon shine bright on it. The landform controls the rain, wind, the winter cold, and
steamy summer heat. Only favorable climate provides good situation to produce more talented men. Furthermore this site is safe from disease..." (Taengniji, vol. II, Bokgo Chongnon 1, Chiri).

Despite rejecting the prophetic writings of the geomancers, the Korean Confucian nobles, ironically adopted the geomantic principles for selecting the locations of their settlements and graveyards. As the foci of noble power, most local administrative centers were selected at sites that were ideal according to geomancy. Almost all former county seats in the Kyonggi-do occupy the southern slope of the guardian mountains of the towns (jinsan), which was said to be ideal for the avoidance of cold, strong northwest winds in winter and flooding in summer (Lee Ki-suk: 1968, p. 32).

Nobles and common farmers generally tended to avoid living on the roadside because they believed the road to carry infectious disease, devils, and immoral matters that could destroy the Confucian tradition. Merchant groups, therefore, found the opportunity to establish their settlements on strategic transportation foci because these sites had been avoided by the more agrarian nobles.

In the regions of the upper and lower Han and the Naktong basins, the sites of market towns were all at the confluences of rivers. In this Yongnam-ro zone, several rich and powerful noble clans originated and lived during the Yi Dynasty. The official markets in the local government seats were then under the control of the nobles,
although they did not directly engage in trade. These official markets began to face a growing challenge from the multiplying periodic markets. Trade activities at periodic markets were at first illegal, but the government finally allowed them tacitly in the late seventeenth century (Yi Sang-baek: 1977, pp. 258-59). Historical records suggest that the periodic markets originated in the Cholla-do in the late fifteenth century during the famine periods (Song-jong Silok, vol. 5, 4:2, Imsin). They diffused eastward through the Yongnam region and northward through Chungchong-do to the northern regions in the sixteenth century. According to official records there were between 1050 and 1100 markets at turn of the seventeenth century (Man'gi Yoram, Jaeyong-pyon, Kakjon). Most markets were distributed in the three southern provinces. The Yongnam-ro areas had about 170 periodic markets spread in 30 counties.

The average county in those days had two market towns, but the counties in the Yongnam-ro zone averaged 5.7, market towns. The Yongnam-ro area was thus the main artery of trade in the country. Among the 170 markets, those of Chungju, Taegu, and Sangju were among the largest (Fig. 38). Those of Song'pa, Sa'pyong, Yang'gun, Suwon, Ansong, Changho-won, Chongju, Jung'pyong, Mokgye, An'gye, Yong'chon, Songju, Miryang, Kimchon, Kimhae, and Pusan were also quite large (Doro-go, vol. 2, Jangsi; Mun: 1941, pp. 241-52).
Fig. 38. Classification of markets in the Yongnam-ro area, 18th century.
In the early Yi Dynasty, the government established permanent markets at county seats, garrison towns, and some post stations and hostel settlements. Officials collected taxes at these legal markets where limited trade activity was allowed. The Confucian scholar-officials felt that trade meant unnecessary movement of the people which could result the problems in administration, waste of farming time, aggravation of the supposed evil of windfall profit, and encouragement of spendthrift habits.

The collapse of the rural economy caused by the disorder of the land tenure system and warfare with the Japanese and Manchus was so serious that the approval of the periodic markets was inevitable. The Sirhak scholars realized that trade would help the rural people survive and overcome their difficulties and that such commercial activities would promote the monetary economy and manufacturing. Many tribute items were manufactured by professional artisans and become important trade goods, once freedom to trade was acknowledged.

Merchants, peddlers, brokers, commission agents, manufacturers, craftsmen and hotel and inn owners lived or gathered in market towns. Some of these periodic markets grew large enough to compete with or overwhelm government-sponsored markets. The market towns in the Yongnam-ro zone were classified into two groups: river ports and inland market towns.

In contrast with the public ferries, some villages
near Seouls Yoju, and Chungju in the Han Basin and Sangju, Sonsan, and Miryang in the Naktong Basin developed as major commercial river ports (Fig. 39). Songpa-jin and Mapo in the Seoul metropolitan area, Mokgye and Kumchon near Chungju, Jinduri by the Naktong ferry, Oegwan, Sosan and Samnang-jin adjoining Miryang developed as large commercial towns. These river ports had populations ranging from several hundred to thousands. The populations of Yongsan and Mapo were about 15,000; those of Dumopo and Han'gangjin, about 5,000; and that of Tukjo, about 1,500 (Son Jong-mok: 1977, pp. 263-64).

Songpa-jin, one of the 15 largest market towns in the country located at a strategic point connecting the Han River route with the Yongnam-ro and the Kyong'an-ro, was a permanent market town. Its population was 3,000 in the eighteenth century (Son Jong-mok: 1977, p. 264). This settlement was totally destroyed by the great Han River flood of 1925. A stone monument erected at the former site of Songpa indicates that about 300 buildings were destroyed. Most buildings in this town were used for commercial purposes and were larger than residences (Baek Jong-sam: 1974, personal interview).

Yi Jung-whan, a Sirhak geographer, considered Kumchon one of the six largest towns in the country, but its function decreased following a change of river channel in the late seventeenth century. Mokgye took over the role of Kumchon. Kahung and Mokgye almost faced each other across
Fig. 39. Development of riverine settlements on the Han River, 18th century.
the Han River. Kahung began during the Koryo Dynasty to develop as a collection point of tax-grain, and Mokgye served as a commercial port. In the late eighteenth century, the combined population of these towns was greater than 5,000 at the height of their prosperity (Baek Rin: 1970, pp. 32-35).

Jindu-ri on the west bank of the Naktong River prospered as the larger collection point of the upper Naktong Basin. As a terminal for river junks and as a natural convergence of many routes from Chungju, Andong, Taegu, Uisong, Sonsan, and Sangju, it became one of the five largest river ports in the country. Merchants from the southern coast brought salt and fish in spring and fall, and traded them for grain, textiles, tobacco, and other goods. Hence, this town became an important focus of the northwestern Yongnam region.

Samnang-jin and Susan-ri were well-known as river ports and as stations for Japanese envoys in the early Yi Dynasty. Samnang-jin, particularly, became very famous as the collection point of tax-grain of the southern Naktong Basin in the late Yi Dynasty. This town was located at the confluence of the Naktong and Miryang rivers, and the Yongnam-ro from Pusan and other routes from Kimhae, Chinju, and Taegu converged there.

There used to be a ferry every four kilometers on the Han and Naktong rivers, and most of them had merchant houses (Mun Jong-chang: 1941, p. 200). Every important
point of crossing also functioned as a commercial focus. There seem to have been at least twenty river crossing from Seoul to Chungju and thirty crossings from Sangju to the Naktong delta.

The development of commission merchants and peddlers must be discussed in order to understand the characteristics of market settlements in the late Yi Dynasty. Peddlers (pobusang) date from the Three-Kingdoms period or the United Silla kingdom. The commission merchants (Kaekju) originated in the early Koryo kingdom, and their activities peaked in the first half of the Koryo Dynasty both in foreign and domestic trade (Pak Won-son: 1968, p. 9). The restraint of commerce by the Confucian government injured the commission merchants and peddlers in the early Yi Dynasty, but commercial activity regained vitality after the seventeenth century. Commission agents and peddlers became the synonyms for the commercial activities in the late Yi Dynasty. The commission agents began to control the wholesale business, and peddlers the retail business.

Commission agent were classified into several types. The posang-kaekju was a commission agent who dealt with the posang who carried wares in bundles or on his back. This peddler collected such products as medicinal plants, textile goods, jewelry, metal goods, furs, and stationery goods, then entrusted them to commission agents for sale. Many commission agents were also engaged in the
manufacturing of textile, metalware, and paper, as well as such additional activities, as financing, brokerage, and warehousing. They generally resided in market towns.

The produce dealers dealt in grain, fish, salt, fruit, vegetables, and other perishable goods of large size and heavy weight. Hence, the produce dealer conducted his trade at sea ports and river ports. As the collecting points of cargos from the sea and land, the river ports on the Han and Naktong rivers had many advantages. River ports were both the crossing points of the overland routes, and the connecting points of the river routes; a river port had at least four accesses, two on the land and two on the water. The low transport cost of the river route was advantageous for transporting such bulk freight as salt, fish, grain, fruits, lumber, and firewood.

The produce dealer's building was a meeting place for the merchants from the inland markets and from the sea ports. The produce merchant often referred bargaining between the sellers and buyers, and sometimes he purchased the goods for himself. Financing, transportation, and warehousing were his subsidiary activities. The produce dealer had a large guest-house, warehouse, and horse-stables for the convenience of inland merchants. The produce dealers were mainly located at the major river ports such as Seoul, Yoju, and Chungju in the Han Basin, and Sangju, Sonsan, and Miryang in the estuary of the Naktong River. The produce dealers in Seoul were divided into two
groups: the Upper Han Produce Dealers consisted of Hang'ang-ni, Sobinggo, Tumopo and Tuksom, and the Lower Han Produce Dealers included Yongsan, Mapo, and Sogang. The Upper Han Produce Dealers dealt in grains, mainly rice and soybeans, which were harvested in the manors of absentee landlords in Seoul, and in lumber and firewood from the eastern mountain region. They owned most of the river junks for the transport of grains and other cargos. In spring, their ships transported salt, fish, and other marine products to the upper Han Basin and carried grains, medicinal herbs, charcoal, and other goods back to Seoul (Pak Won-son: 1968, p. 141). They kept close contact with the produce dealers in the upper Han Basin, such as Yoju, Mokgye and Chongpung. The Lower Han Yogak operated hundreds ocean-going junks. They transported to Seoul both tax grain and the grain of the landlords. They also dealt in salt and fish before the twentieth century, these produce dealers supplied essential goods for the 200,000 people in Seoul, but they were not closely related with the trade in the Yongnam-ro zone.

The relationship between the produce dealers of the lower Naktong River and those of the upper Naktong River was similar to that of the produce dealers of the Han River route. The merchants from the southern coast brought salt, fish, and marine products to the upper Naktong River, and traded them for rice, tobacco, textiles, and other goods at Jinduri in Sangju, Susan-jin, Dongam-jin, and Samnang-jin.
The busiest trading season occurred when the ships from the coast visited the river ports.

In the field, three informants, Shin (72), Lim (65), and Pyon (79) gave valuable information on settlement patterns of commission agents and produce dealers specifically on Mokgye-jin near Chungju (Fig. 40), and Jindu-ri near Sang-ju. According to them, Mokgye-jin consisted of about 500 houses at the height of its activity in the nineteenth century, and about 300 in the 1940s. Old building sites, now used as rice paddies or dry fields, yielded additional evidence. The terraced fields contain large amounts of roof-tile and ceramic sherds. Mr. Shin, son of a produce merchant, still lives in an old building, estimates that Mokgye-jin had about 100 commissions merchants' houses and 30 produce merchants' houses in the early 1900s. About 40 percent of the buildings were utilized for commercial purposes. The informants suggested that fewer than 10 families engaged in agriculture. The other residents were a Confucian teacher family, several butchers, river-boats sailors, and some boatwrights. Mokgye-jin was indeed a typical commercial town.

Mokgye had periodic and livestock markets. They were open every fifth day, but most commission agents' houses were open everyday. The busiest season was from September to November. Boats arrived from Seoul with dried and salted fish, seaweed, manufactured goods, textiles, and other exotic goods. Merchants from Kangwon-do, Kyongsang-
Fig. 40. River port settlements on the Han River near Chungju, reconstructed for the 18th century.
do, and Chungch'ong-do also brought grain, medicinal stuffs, tobacco, charcoal, cotton, and other goods. The goods from the Seoul area and from inland were exchanged at Mokgye and moved in various directions by cart, draft animal, and boat. From late February to April was also busy because salt-boats again sailed upstream from Seoul to Mokgye. People in the upper Han Basin, including the southern Kangwon-do and eastern-Chung'chong-do, and northern Kyongsang-do received their salt supplies from Mokgye. Mokgye had a hinterland of probably over 10,000 square kilometers. Jindu-ri in the upper Naktong River, a situation similar to that of Mokgye, developed on the natural focus of the overland routes from Sangju, Uisong, Sonsan, and Taegu and the river route. As a collection point of inland goods and the terminus of the Naktong River route, Jindu-ri developed as a commercial port that had about 500 houses spread on both sides of the Naktong. Commercial agents' and produce merchants' building clustered along the natural levee.

One of the powerful local noble, Yu clan, engaged in regional trade. Although Yu clan were not merchants, they hired commission agents to deal directly with the peddlers and other merchants. This participation of the nobles in the business world was an inspiring but unusual case; the Confucian prejudice against commerce still prevented most nobles from conducting commerce.

Riverine settlements had specific patterns. The ferry
settlements formed string villages that consisted of several to twenty houses along the road leading to the river. Generally T-shaped urban settlements, riverports had well organized functional quarters: the wharf, market area, the business quarter, and residential area. The wharf generally developed along the natural levee, which was frequently isolated by the flood water in the backswamp, or even inundated, so that some buildings were temporary; other permanent buildings had thick flood-protection walls, built of boards or lime concrete. Harbor accommodations and ship-building and repair facilities were temporary buildings, while taverns and fishermen's houses were permanent buildings.

As a refuge in times of high water, the residents built a high mound near their village. Upon this mound, they built an emergency shelter and furnished it with a boat and some food; to protect the mound from the attack of the river, they planted willow trees around the mound. When they had flood, the residents evacuated to this higher ground.

The market area occupied the central part of the river port, surrounded by residential area and commission agents' quarter. Generally, market area was an open space with many allotted sections. Brewers, blacksmiths, and other craftsmen had permanent shops in this quarter, but most parts of market consisted of stands that were used only on market days.
The business quarter consisted of the commission agents' complexes and the produce dealers' complex. The produce dealers' complexes, the largest and most luxurious buildings in the port towns, included the agents' residence which formed L or L-shaped building, and his business buildings. The residence had three to five bedrooms, wooden floored vestibule, grain storage, large jar stand, and a water well.

The business buildings consisted of bedrooms, warehouses, horse stables, and some other special purpose rooms. For example, Mr. Shin's house in Mokgye village near Chunju, the former produce dealer's building, is one of them, although it is now severely altered (Fig. 41). The plan of Mr. Shin's house was reconstructed from his testimony and by measuring the corner stones of parts of the building now destroyed. This produce dealer's complex had 30 guests-rooms, agent's office and shop, kitchen, horse stables, and warehouses. An important guest might occupy one room by himself, but rooms were generally shared by two or three travellers. The maximum capacity of accommodation of this produce dealer's complex was about one hundred travellers.

The commission agent's complex was a little smaller than that of the produce dealer. One of the commission agents' houses in Kahung near Chungju, about 250 years old, has been well preserved by the Han family, descendant of a commission agent. The agent's residence and the business
Fig. 41. Settlement complexes of the produce dealer (yogak) and commission merchant (kaekju).
building almost forms a square. The business building has five bed-rooms, an agent's office and shop, and three storage rooms. The horse stable stood apart.

Most commission agents and produce dealers invested their capital in both agricultural land and woodland, but few of them engaged in farming. They leased their lands to the neighboring farmers, although most of them had their own kitchen gardens. They still had to get supplies of other food stuffs in the local markets.

The residential area often occupied the high ground where even the highest flood in the village history had never reached. In addition to dwellings, the town had a school, shrines, a public hall, and sometimes a Buddhist temple. The houses in the river port settlements were generally larger and better built than those of farm villages.

The river port developed on the natural levee or spread from the levee up onto the river terrace. While settlers did pay attention to high water levels before locating their settlements, these river ports were occasionally flooded or even swept away. The great floods of 1925 and 1936 destroyed almost all riverine settlements in the Han Basin, and the Kapsul deluge in 1934 damaged most of the river ports of the Naktong Valley. Most settlers subsequently close to relocate on river terraces. Almost 300 buildings in Songpa, 50 in Samjon-do, and 30 in Sokchon were wiped put by the Ulchuk Flood of 1925, and Songpa was
rebuilt on the hills. In Mokgye, several dozen houses on the Jangja-nup levee disappeared. About 100 commission agents' buildings on the natural levee of the Naktong River in Jinduri were also destroyed, and the settlement was finally moved to the hillside. After the two great floods of 1925 and 1936, the residential areas of Mokgye, Baegae-chon, Kahung, Kwang-jin, Songpa, and other ports on the Han River were moved from the lower part of natural levee to the higher ground, but the business quarters were not moved.

Settlements built on the natural levee generally had some problems. First, most settlements on the levee were surrounded with backswamp or lower lands that were easily inundated even in small floods. The settlements were frequently isolated by water. Second, people could only get drinking water from wells. The water was poor and sometimes caused waterborne diseases. Third, changes in river channels or in the depth of water could affect the port or even shift the river port. For example, Kumchon near Chungju on the upper Han River prospered as a collecting point until in the eighteenth century, it declined because of a change in river channel. Kumchon was replaced by Mokgye.

The introduction of modern transportation caused the decline of the Han and Naktong River routes. The Japanese constructed the Kyongbu Railroad in 1905, the Kyongbuk Railway in 1931, the Chungbuk Railroad in 1928, the Suryo...
Railway in 1931, and the Chungang Railroad in 1942, thus bringing the transport functions of the Han-Naktong River route to an end (Fig. 42) (Bureau of Railroad Construction: 1965, pp. 267-68). Mokgye, for example, was hard hit by the Chungbuk and Chungang railroads. The commission agents left the town in the 1930s, and even the periodic market was closed in the 1940s. The population dwindled from 3,000 in the early nineteenth century to a few hundred in the 1940s. Former built-up areas, market site, and other commercial quarters became agricultural fields. Naktong-ri and Jindu-ri followed same decline. Almost all river ports on the Naktong and Han Rivers lowered their function from commercial towns to mere ferries. The functional elements in their place-names on the map indicate relict settlements.

Commercial Accommodations

The inn or tavern, called in different names such as the jom, jumak, chamjom and sulmak, began to develop after the decline of the public schools. As Yu Hyong-won pointed out, the system of hostels had many problems from the beginning (Ban'gye Surok, vol. 1, Jonje Sang, Punjon Jolmok). Officials neglected both the locations of hostels and the economic base of the hostel settlements.

Many hostel buildings were abandoned in the sixteenth century because they were established in remote mountain areas and rarely had guests and because the allotment of
Fig. 42. Periods of railroad construction in Yongnam-ro region.
hostel lands was too small to support the hostel.

During the seventeenth and eighteenth centuries, many commercial overnight accommodations were established. The taverns began to replace the hostels. In the seventeenth century, Yu Hyong-won proposed a masterplan for a new system of accommodation. The government was to allot, tax-free, tavern lands (chamjom-kyong) to be used as building sites. About three acres were allotted for a building site for 20 houses. Each household was to pay two mals (9.5 U.S. gallon) of rice as land tax. A tavern settlement was to be established every 12 kilometers, although the exact interval depended on the circumstances. The area of streets was included in the tavern land. The width of street had to be 10 meters with a ditch on each side of the street (Ban'gye Surok, vol. 1, Jonje Sang, Punjon Jolmok).

The maximum size of a tavern settlement accommodated twenty inns (jom) lined up equally on either side of the street (Fig. 43). The residence of each inn owner was to be placed behind his inn building. The wide main street was to serve as a stall area on market day. Simple stalls were erected on the street and removed after the market.

Inn settlements were built so compactly that the risk of fire was great. For fire control, the people constructed small ditches about 1.5 meters wide on either side of the street, and a small bridge or a piece of board was laid on them from the street to the gate of each inn. Several former tavern settlements, therefore, have
Fig. 43. Idealized diagram of inn settlement, 17th century (left) and the real model of 18th century Pan'gyo (right).
distinctive names such as pangyo, nodori, and noldari that originated from the board on a ditch (Choi Young-joon: 1975, p. 73). This type of ditch was common in most of the roadside settlements like Pangyo, Changho-won, Mokgye, Yong'an, Yugok, and Songhyon. In his proposal for in settlements, Yu strongly advised that a fire wall be built between the inn houses. He thought the space between the buildings could be used as dump area and fire-break.

Yu also considered the importance of fortifications for in settlements. At either end of the street were gates to be opened early in the morning and closed at night. In China and other despotic states, watchmen were stationed at the ramparts to collect tolls or ward off undesirables (Sjoberg: 1965, pp. 91-92), but there is no evidence of toll collection at the ramparts of Korean administrative towns or tavern settlements.

Yu's idea for commercial accommodation was more practical than that of the early hostel system. He realized that the main reason for the decline of the settlements was the weakness of their economic foundation. Land grants for the tavern settlements and the establishment of market place in the tavern stimulated the development of this type of settlement. According to Yu, the proper size of agricultural land grant for large inn settlement was about 120 acres, 90 acres for middle-sized ones, and 60 acres for the small ones. He believed that the inn settlements on the Yongnam-ro belonged to the large
settlements (*Bang'ye Surok*, vol. 1, Jonje, Bunjôn, Jolmok). Three different sizes of inn settlements on the Yongnam-ro can still be identified. The large category included 20 inns, the medium, 15, and the small, 10.

One may wonder how well the government accepted and applied Yu's proposal. Two facts suggest that his idea may have been applied during the Yong-Chong Era. First, he was recommended a couple of times for the position of court official by the central government without having to take the civil service examination. Second, his book, *Ban'gye Surok*, (Essay of Ban'gye) was published by the government in 1770 and used in the reconstruction of the country after the Japanese and Manchu invasions.

That Yu's model for inn settlements was used was confirmed by the local testimony history at Pan'gyo in Kyonggi-do. The reconstruction of the former inn settlement of Pan'gyo was prepared with the help of Mr. Kim Un-jin (75 years in 1974).

Comparing the won settlements in the early Yi Dynasty with the inn of the 1700s shows that travel and transport became more common in the later periods. In early times, the largest hostel settlement had only five houses, while the tavern settlement consisted of twenty inns. In the early Yi Dynasty, given the Confucian prejudice against trade and travel, the hostels were established mainly for official travellers. In the eighteenth century, the development of commerce stimulated the development of
periodic markets and, consequently, it influenced to the establishment of such lodging facilities as the commission merchant and produce dealer.

The tavern became the overnight accommodation for both private and official travellers. The private travellers were expected to pay expenses, but the official travellers, such as government messengers and postmen, were lodged free of charge. Although the produce dealers and commission agents ran travellers' inns on the side, they were only courtesy accommodations specifically related to the commission business. In contrast, the hotel (*pohaeng-kaekju*) accommodated private travellers for regular charges, but compared with the inn, it was a high class inn or hotel, giving accommodation to the travelling nobles, scholars, and other rich people.

The inn and hotel were run by professional people. The inn had a few bedrooms, horse stable, and a dining hall, while hotel had more rooms, a larger horse stable, and a bathhouse. In the former, people had to share rooms, but not in the latter.

Summary and Discussion

The Yongnam-ro, a major communication route between Seoul and Pusan, was the shortest way running through the central part of the Korean Peninsula. The route formed a pivotal belt or axis, with the Han and Naktong River routes and other minor highways. Although it spanned some rugged
areas along its course, the Yongnam-ro had several advantages. First, it avoided some of the troublesome river crossings because its path followed the longitudinal valleys of the Han and Naktong rivers. Second, it was the artery between the capital and the Kyongsang-do, the most prosperous area of the country; and finally, it played an important strategic role during wartime because it was located in zone generally safe from foreign invasion.

The organization of communication networks of the Yi Dynasty was essentially linear, linking unit with unit by the circulation of messages and the mobilization of men. The Yongnam-ro part of the linear communication network connecting about 100 local administrative towns that had developed as the power base of local nobles. All roadside settlements, including post stations, public hostels, ferries, and express messenger camps were established not for the accommodation of the commoners, but for strengthening and centralization of the Yi Dynasty.

Numerous roadside settlements were developed with the establishment of the Yongnam-ro. They were classified into two categories: the royal settlements with postmen, ferrymen, express messengers, and the managers of public hostels; and commercial settlements which began to be developed essentially by the commoners after the Japanese invasion in the late sixteenth century and which included periodic markets, riverports, and other commercial settlements consisting of taverns, inns, brokers, and other
merchants.

Among the royal settlements, post towns were the most important in function and population size. The Yongnam-ro, which connected 32 stations from Seoul to Pusan, was divided into six postal districts: Yangjae (Yongwha in the eighteenth century), Yonwon, Yugok, Kimchon, Songhyon, and Hwangsan. Each district was managed by a chalbang, who was stationed at the district office.

Although the royal settlers belonged to commoner class, they were engaged in menial services. They received use of state lands from the government for their living, and were exempted from taxation in return compulsory and entailed service. The historical and political background of these settlements endowed them with distinctive traits, such as homogeneity of class, reliance on subsistence farming, and poor dwellings reflected on their living condition.

The public hostel settlements originated from the relief works for the travellers provided by the Buddhist temples in the Koryo Dynasty. These facilities were, unfortunately, nationalized by the government of the Yi Dynasty. The public hostel settlements were hamlets or villages that included of several hostels and a few residences. The express messenger camps and ferries, which were under the control of military officers, had by contrast very few residences.

The inhabitants of the other villages who reaped the
profit from improved transport because of the unreasonable constraints of Confucian philosophy turned into an ideology by becoming the official dogma. The function and pattern of nearby villages were really characteristic of true roadside settlements, while the post stations, despite having populations of from several hundred to a couple of thousand, and public inns and ferry settlements remained mere farm villages. These royal settlements were improperly located for commercial activity, and the government prohibited commercial activity of the royal settlers even in some favorable places.

Commercial settlements did not prosper along the Yongnam-ro itself. Almost all commercial settlements developed as local trade centers for largely self-sufficient communities. In contrast with the Yongnam-ro, river ports on the Han River and Naktong River prospered as market towns because of wide hinterlands. The commercial settlements, of course, had the characteristics of urban settlements in their pattern, function, and population size. Most of the market towns and other commercial rest areas, which consisted of commercial agents' houses, stores, taverns, restaurants, and inns, developed on the natural road convergences. The pattern of these settlements were closely related to road patterns; they formed string, Y and cross patterns.

The collapse of the land tenure system, which had been the base of the Yi Dynasty's political power, and the
improvement of traffic facilities, led to the decline of most local administrative towns and royal settlements along the Yongnam-ro. The encroachment of the local nobles onto post lands undercut the support basis of the roadside settlements. As part of a chain-reaction to the functional disorder of communication networks, administrative towns also declined. Hence, some commercial towns, which had begun to emerge in the seventeenth century at the natural convergences of local roads or royal roads, became the new local administrative, commercial and educational centers.

The localization of Korean cities on the basis of geomancy greatly influenced the development of communication network. Most of Korean cities have a long historic background as power bases of the nobles. Since ancient times, the Korean people searched for dwelling sites according to geomancy and established their cities in ideal sites surrounded by ranges. From the modern conception of the role of economy and transport, the Korean nobles conception of ideal dwelling sites is impractical; geomantic choice of landforms and orientation of these older cities often made them isolated from the main communication networks. Most often made them isolated from the main communication networks. Most Korean nobles tended to avoid living on the roadside. Their concern about communication routes was only related to government service. Few of them understood the cultural, social, and economic importance of communication routes because of their agrarian economic
structure. Hence, it is the commoners, particularly the merchant groups, who took advantage of the opportunity to establish their settlements on strategic foci on the major arteries.
CHAPTER VII

THE ROUTE AND ITS LANDSCAPE

Introduction

Every locality has unique characteristics of landscape that have accumulated through history. Landscape rarely remains static; ancient elements become gradually extinct, and new elements are integrated. Before a well-balanced form of landscape becomes generally established, new forces will be at work subtly altering that form. The chronological sequence of the landscape, however, is not simple. The landscape evolves from small to large scope, from simple to complex form, and from diverse to comprehensive patterns. Such evolution is accomplished by the consolidation of the political, cultural, and social structure of the localities.

Communication routes considerably influence landscape changes. To some, altering the landscape to build roads may appear unproductive or even destructive to natural ecology, but roads transport man and his cargo and facilitate the exchange of ideas and the progress of civilization. While not productive, roads are thus generative (Brunhes: 1952, p. 97); they engender production.

There is a reciprocal relationship between the alignment of roads and natural, cultural, historical, and economic factors (Brunhes: 1952, p. 56). A change of
factors results in changes in the roadside landscape. The reverse is also true: the road influences the same factors that fix its location, and changes in routes and transport techniques alter the transited landscape. Sometimes new factors can have a countrywide influence, other times their influence remains local. The historic road system provides a key to the present landscape, and the present landscape holds clues to the past because the evolutionary process of the landscape of the landscape is preserved in the present (Newton: 1970, p. 134). Some elements of the past landscape, being extinct, are so far impossible to reconstruct, while others still survive, fossilized in place-names, artifacts, relicts, or documents.

This chapter examines: first, the cultural and physical factors that underlie changes in the location of the road and second, the factors that contributed to the preservation of a specific road location which influenced the evolution of the landscape. An historical treatment of cultural materials is the most appropriate way of achieving the vital fusion in the study (Sauer: 1941: pp. 17-23; Gregory: 1976, p. 298). Abandoned fields, dwelling sites, eroded road-bed, road signs, and other cultural features on road sites provide information about the past landscape. The relicts and remains indicate not only the alignment of old roads and their convergence and divergence. The interpretation of the frame of mind and ideas of the road-builders sometimes becomes possible. Historic documents
can test the assumptions made about their mode of life on the basis of field-observations.

Physical Setting

The geologic structure of the Yongnam-ro zone determined at least some of the road's form. The Yongnam-ro ran through well dissected, hilly lands and well-drained valleys and through small valleys. The valleys of the Tanchon, Chongmi-chon, Dal-chon, Yong-gang, Naktong, and Miryang rivers almost form a straight line from Seoul to Pusan. The ranges of Kwangju, Charyong, Sobaek, Palgong, and Kaji could have been major obstacles on the Yongnam-ro. These difficulties, however, were circumvented through the low natural saddles of various passes: the Jwajong Pass in the Kwangju Mountains, the Im-o Pass in the Charyong Mountains, the Saejae Pass in the Sobaek Mountains, and the Songhyon Pass in the Kaji Mountains. The two large river crossings, the Han'gang Ferry near Seoul and the Naktong Ferry near Sangju easily connected the overland route.

The lower alluvial plains of the valleys of the Tanchon, Dalchon, upper Naktong, Kumho, and Miryang rivers used to have swampy and flood-prone areas covered with swamp vegetation. The reclamation of the swamps is not well-documented, but local elders testified that most of the swamps were reclaimed before the twentieth century (Messrs. Kim Jong-ik [89] at Yangjae-ri, Pak Yong-han [61] at Naktong-ri, Hwang Yong-mok at Sangju, Yi Yong-taek [73]...
at Sonsan, and Kim Ik-hyong [75] at Yangsan: 1980, personal interviews). The remnant swamps shown on the topographical maps of the 1910s, but absent today, suggest such reclaiming (Fig. 44). The dykes in the reclaimed areas also often served as roadbeds. The local elders said that the plain in Togae-dong of Sonsan County was reclaimed several hundred years ago. The former swamps became rice-paddies and the natural levee served for vegetable gardens after the construction of the dyke on the left bank of the Naktong River.

Road building requires altering the environment. In Korea, however, the old routes generally followed river-valleys, and road-cuts and artificial notches were not common techniques. Such alterations were made only when unavoidable. On the Yongnam-ro, only a few hanging galleries, road-cuts, and artificial notches are present. According to Korean folk religion, every mountain has a topographically favorable site where the beneficial guardian spirits of the mountain are believed to gather. Unless this spot is protected, misfortune will befall the people of the area. The avoidance of excessive alterations, following the folk religion, may have helped protect the road surface from soil erosion, but it was not always practical. For example, the route of the Darinae Pass near Seoul was no more than about 100 meters high, but it was so steep that wheeled vehicles could not use it. Travellers on horseback and in carts consequently avoided
Fig. 44.
Swamp reclamation along the Yongnam-ro, 18th century.
the Darinae Pass and used the route between Pan'gyo and Songpa. The Darinae, Sajae, and Gyerip passes have steep gradients of 20 to 30 degrees. The steep slopes of these passes show severe erosion. The southern slopes of the Darinae and Gyerip passes, and the northern slope of the Sajae Pass are so rough that even hikers must watch their step. The uneven, stony surfaces of these roadways developed as the soil washed out. The steps of travellers and the hooves of their pack-animals, once traveling in large numbers along these roads, contributed to their sinking.

After the introduction of modern transport, the maintenance of old roads became neglected, and these routes were finally abandoned. Considerable runoff concentrated in the entrenchments of abandoned roads. In some parts of the Saejae and Gyerip passes the surface of the roadbed has sunken between one and two meters. The old stone-slab pavement of the Saejae Pass became rough. Erosion formed gullies in the beds of abandoned roadways, especially in the mountain passes. The hanging galleries of Kwan'gap-chon and Jak-chon, carved out of the mountain cliffs, also have been eroded. Once these roads were abandoned, the weathered roadbed crumbled in many parts.

The Sobaek Range served as a refuge during wartime. Slash-and-burn farming by the refugees contributed to severe erosion. The Yi government realized the importance of a tree-cover in that area and began to control the
forest surrounding the Saejae and Gyerip passes (Mök Min Sim So, vol. 1,1 Gongjon 6, No. 1, Salim). In the early twentieth century, unfortunately, soil erosion started again after the opening of coal mines in Mun'gyöng County. The mining company cut trees to supply timber for the mines, and although they did replant trees to a certain extent, the area suffered once again. Lumbering and reforestation occurred from the lower level to upward. By now, it is the upper part of the Gyerip Pass that is the most deforested. The entrenchment of the roadbed caused by lumber trucks gets ever deeper with the runoff, and the northern slope of the Gyerip Pass shows critical soil erosion.

After the complete lumbering of the southern slope of the Gyerip Pass lumbering began to extend over the pass and caused soil erosion on the northern slope. Gruss, which impairs the growth of vegetation, is carried by the slope-wash from the top of the Gyerip Pass down to the gentle northern slope. The deposit of gruss becomes an open space and its edge marks the limits of vegetation.

Vegetation

The Korean Peninsula jutting out into the Pacific Ocean, exhibits both continental and maritime forms of vegetation. As a result of this continental and maritime complex, Korea is noted for the variety of its landscapes. In the northern and northeastern mountains, continental
coniferous trees dominate, while deciduous evergreens grow in the south (Fig. 45). The central region, a transitional area between the continental and maritime forests, is covered with mixed forests. The low hills and plains, however, are not as well endowed with forests because of the agricultural exploitation throughout the ages. On the low hills, cultivated woods of pine and alders have taken the place of lumbered natural forests.

Natural Vegetation

Mixed forests, dominated by deciduous trees, rise in the mountains of Korea up to about 1100-1600 meters (Lautensach 1950: p. 43), 1100 meters being the upper boundary line in the northern region, 1400-1500 meters in the central region, and 1600 in the south. The mixed forests consist of Korean pines, red pines, short-needle pines, silvery firs, spruces, larches, oaks, elms, Paulownia, alders, cherries, chestnuts, aspens, willows, gingkos, and Korean spindles. In the northern region, conifers dominate and, in the south deciduous trees are the most widely distributed. The elm, empress, alder, aspen, and willow grow especially well in the fertile valleys and plains.

The southern coast dominated by the subtropical forest includes species such as the camellia, evergreen oak, cork-tree, hazel, Japanese nutmeg, wild peach, magnolia, chestnut, and bamboo. There is also an abundant growth of evergreen shrubs and vines. It is also a region of fruit.
Fig. 45. The Vegetation of Korea (after Lautensach 1950).
orchards: citrus, persimmon, pears, and peaches, as well as such cash crops as tea and mulberry.

The elm, pine, gingko, and willow were used as roadside trees and street trees. These trees were usually planted along the roads, near the temples, Confucian shrines, cemeteries, or government buildings. Sometimes they formed small groves or lined the roads. The small groves of elms, gingko, and pines sometimes were considered sacred places by the local people.

Such subtropical plants as the camellia, citrus, tea-tree, bamboo, Paulownia, and persimmon indicate milder climatic conditions. The distribution of camellias and citrus-trees is limited to the southern coast. The northern range of the tea tree used to reach 36°N, but now tea bushes have become feral in most areas except for cultivated plantations below 35°N. Although bamboo can be found in most parts of the Yongnam region and of Cholla-do, its true domain is southern Cholla-do and the Naktong Delta, while the southern Yongnam region is that of persimmon.

On the one hand, man's impact upon vegetation may be destructive, but on the other hand, it can be creative. The main causes for the destruction of vegetation are: lumbering, fire, and the invasion of weeds. In the Yongnam-ro zone, the origin of the alteration of the vegetation landscape is unclear, but it probably began in ancient times and expanded during the early Koryo Dynasty.
Historic records suggest that a number of the Silla people migrated to the Han Basin during the reign of King Chinhung (Samguk Sagi, Silla Ponki, vol. 4. King Chinhung, 12:1), and their migration increased after the unification of Korea by the Silla Kingdom. Advanced cultural technology and new plants were probably diffused from the Yongnam region to the Han Basin. Woodlands in the valleys, plains, and low hills were probably removed for agriculture.

The landscape of the low hills and mountain slopes began to change extensively during the early Koryo Dynasty. King Songjong (981-97) and King Injong (1122-146) ordered local administrators to exploit mountain slopes for agriculture, fruit-culture, and sericulture. Farmers were encouraged to plant such economic trees as the chestnut, walnut, pear, peach, persimmon, jujube, lacquer, mulberry and paper mulberry (Ban'Gye Surok, Jonje Hurok, Gyosolsang, Suye). Yongnam people were agricultural experts, and many of the subtropical plants that they cultivated (pears, peaches, persimmon, lacquer, and mulberry) diffused from that area into the Han Basin.

The vegetation landscape along the Yongnam-ro zone is divided into four regions: the northern mixed forest, the central mixed forest, the southern mixed forest, and the evergreen forest. The central mixed forest is the cover of the Han Basin and the northern Naktong Basin. The persimmon, Paulownia, and cherry are typically found in the northern Naktong Basin, while the elm, gingko, and pine
are found in the northern Naktong Basin, while the elm, gingko, and pine are found mostly in the Han Basin. Oaks, alders, chestnuts, willows, and aspens are found in both areas. The highland forest belonging to the northern mixed forest covers the Sobaek Range which divides the Han Basin from the Naktong Basin. There the pine, spruce, birch, yew, and the silver fir predominated. Although dense forests covered the Sobaek Range a long time ago, that cover was heavily damaged by the slash-and-burn practices of people who found shelter in that area during troubled times. Subsequently, the cover turned into a mixed deciduous and coniferous forest as evidenced in the Saejae and Gyerip passes in the Yongnam-ro zone.

Escaped Plants

Some plants escaped from cultivation and became feral. Their distribution is limited to the rugged areas of the Yongnam-ro zone. They are found mostly in abandoned fields, and former dwelling sites and roadbeds. They do not cluster, but grow with other plants. Along the Yongnam-ro zone the best indicators of old roads are feral apricots, peaches, pears, chestnuts, persimon, and jujube. Feral melons, watermelons, and gourds, all of very reduced size were identified in abandoned settlements along the Gyerip Pass. Tart-tasting peaches, pears, and apricots, were found growing on thin soil on a nearly perpendicular cliff of the Kwan'gap-chon Bypass. These may have grown from seeds discarded by travellers. In the Saejae and
Gyerip passes and in the Kasan Castle area, farmers harvest feral mulberry leaves for sericulture. Feral tea-plants, which used to be cultivated until during the early Yi Dynasty, are now distributed in the counties of Chongdo, Miryang, and Yangsan in the southern section of the Yongnam-ro (Lee Ji-ho: 197, p. 8). This was verified during fieldwork in Chongdo County.

Weeds are good indicators of the location of former settlements and roads. Along the Yongnam-ro, they can be found in two locations, dirt roads in the lowlands and such disturbed areas in the mountains as former dwelling sites and abandoned fields. The following weeds were encountered in the lowlands: spiderwort, goose-foot, amaranth, fleawort, field horsetail, crab grass, Johnson grass, wild lettuce, and shave grass. Buckwheat, knotweed, amaranth, smartweed, spurry, wild oats, chess, and Virginia pepper grass are found in abandoned fields and dwelling sites. Among the lowland weeds, field horsetail, crab grass, spurry, and chess are often found in newly expanded roads. Such weeds as amaranth, wild oats, and buckwheat grow in abandoned fields and were used as famine food by the slash-and-burn farmers.

Roadside Planting

Tree-planting along the highways seems to have been common to the East and West. Some trees were selected for religious or aesthetic reasons. In England, yew trees were
planted at regular intervals along pilgrimage roads (Crump: 1976, p. 26). The ancient Greek roads were lined with olive-trees, the sacred grove (Borth: 1969, p. 19). In ancient China, during the reign of King Wen of the Chou Dynasty (1169-1134 B.C.), Hyoshil, the Governor of Ongju, planted elms every four kilometers along the highways. Following his example, the Emperor spread the custom to the entire empire (Mokmin Shimso, Kongjon 6, No. 5, Doro [roads]). Chin Shih Huang Ti (Third century B.C.) also ordered his officials to plant pine trees every thirty feet to beautify the roads (Needham: 1965, p. 7).

In the ancient Choson Kingdom, King Kija (third century B.C.) ordered willows planted along the highways (Pak Won-son: 1965, p. 31). The pine-trees of China and the willows of Korea could well be the first roadside trees (Shinjung Dongguk Yoji Sungnam, vol. 8, Kyonggi-do Juksanhyon, Yokwon).

The exact origin of the elm as roadside tree is not known, but it may be related to Confucianism. It was first used as a roadside tree in China and was known, along with the gingko, as a "noble tree" (Hulbert: 1969, p. 115). Willows, pines, and elms, which became roadside trees in different periods, were adopted in the Yi Dynasty. As the symbolic tree of Confucianism, the elm led to the towns. The gingko, by contrast, led to Buddhist temples and Confucian shrines. Protected by the government, elms were planted as road markers and as shade-trees for travellers.
According to the Annals of King Sejong, the government ordered the local magistrates in the early fifteenth century to plant shade-trees along the roads every four kilometers. The elm was the first choice because of its excellent shade and long life (Sejong Silok, vol. 93, 24:9, Kyesa). The government expected every household along the streets, roads, and streams to plant trees (Taejong Silok, vol. 12, 7:4 Gapshin).

Today, elm-trees are found by the shrines of the tutelary deity of a village (sonang-dang) and by stone-piles (dolmuji or joksok). Others stand in front of towns and villages. The elms at Maljuk-gori and Sinwon-ri near Yanjae Station, Pan'gyo, Kwan'gap-chon, Yugok, the Soya Pass and Yuchon are considered sacred. Local people hang colorful strips of clothing on their branches, a custom that probably dates back to prehistoric times. Often found as a threesome, the elm, the stone-pile, and the shrine were distinctive features of the roadside landscape in premodern Korea (Fig. 46).

Pine and willows used as street-trees or sacred trees, were planted closer together, every ten or twenty meters. Willows were dominant near such administrative towns as Seoul, Yong'in, Juksan, Chungju, Sangju, Sonsan, Taegu, Chongdo, Miryang, and Yangsan. Two rows of old willows still parallel the new highway near Chungju. The average distance between these rows of trees is about five meters, indicating the width of the old road that they used to
Fig. 46. Roadside complex at Kwan'gap-chon bypass. Elm trees (for shade), stone pile, and shrine are located together.
line. Willows began to be replaced by Italian poplars in the early twentieth century, except near Haepyong in Sonsan County and Miryang where they still remain dominant.

The width of old roads differs from area to area. These roads often proved too narrow for the passage of motor vehicles. Consequently, they were widened by Japanese engineers in the early twentieth century. During this widening, old willows were cut down, on one or both sides of the old roads. Those of the Yongnam-ro zone were generally spared until the 1960s because the Japanese considered the region backward and not worthy of improvement. Italian poplars were planted by the Japanese in the early twentieth century and by the Koreans after the 1960s. The "Willow Tree Road" starting at Chonan Samgori, the junction of the roads from Seoul, the Yongnam region, and the Honam region, is a historic symbol (Fig. 47).

Pine trees, although less popular than elms and willows, graced the roadside and served mostly as shade-trees (Jongja-mok). Some old pine trees remain in the Yongnam-ro zone in the Darinae Pass, near the Mokgye Ferry, in Sinhye-won on the Saejae Pass, at Kwanum-ri near the Gyerip Pass, and in Chongdo. In Suwon, "Pine Boulevard", which used to extend from the North Gate (Chang'An-mun) of Suwon Castle to the Jijidae Pass, three kilometers north of there, is the most famous historic alley of trees surviving from the Yi Dynasty. These trees were planted by King Chongjo after the construction of Suwon Castle in the
Fig. 47. Willow Tree Road at the junction of the roads from Seoul, Pusan, and Kangjin, another roadside complex.
1790s. The two hundred year old pines, along with a number of stone monuments dedicated to former government officials, line this fifteen meter wide road, which used to be the National Highway 4.

Road Signs

What distinguishes man's roads from animal trails is their cultural characteristics. Roads from cultural geographic landscapes most poignantly when they involve value and belief.

The origins of road-signs are not clear, but they may lie in folk religions. In most societies, roads were considered almost sacred (Burghardt: 1989, p. 2; Jenison: 1949, p. 187). As elements of folk religion, road signs were, and still are, protected in some areas.

China, the model of institutional highways in world history, influenced the development of roads in the East and in the West. The Chinese ideas of road institutions and road signs were borrowed by the Romans (Borth: 1969, p. 19). Even more did the Chinese influence Korea in the use of road signs, and Koreans were influenced by their own folk religions as well. Unfortunately, the origin of road signs in Korea is not well-documented.

The types of road signs lining the Korean roadside landscape were distance posts (jansung), road mounts (hu), and stone piles (dolmudom). The earliest written evidence of the specific use of these features as roadsigns dates
from the early Yi Dynasty. According to the Annals of King Sejong in the early fifteenth century, the Yi government began to standardize road-signs and institutions. First, the distances to county seats in every direction were reckoned from Seoul's Tonwha-mun, main gate of a palace located in the center of the city (Sejong Silok, vol. 93; 24:9, Kyesa). Small distance posts were erected every four kilometers; large ones every twelve kilometers. The distance-posts stood together with distance-mounds or stone-piles. Shade trees (jongja-mok) were also planted by the distance-mounds or stone-piles. The distance posts normally bore an inscription of place-name and distance.

The distance-posts probably originated in the wooden-poles (sotae), symbols of prayers for good harvest, dating back to the Sam-Han period, the third century B.C. to the third century A.D. They were probably at first unadorned, but Koreans began to carve warrior effigies on them (Lee Sang-il: 1976, p. 8). The Koryosa (history of Koryo) suggests the Koryo Dynasty as the period of origin of the use of distance-posts as post-icons, but there is no firm evidence of their use until the early Yi Dynasty. In the Koryo Dynasty, two post-stations' names, Saenggok Station of the Kumgyo District and Jikmok Station of the Dowon District, suggest the use of the jangsung as distance-posts. The term "saeng" or "jangsaeng" is another name of distance-post, and "jikmok" indicates the wooden-pole (Koryosa, vol. 82 [36], Pyong 2, Chamyok).
The distance-posts were generally made of pine, although a few were made of stone. They were rudely carved from whole trees with axes and adzes into exaggerated human figures. Most of them were of grotesque appearance and were painted red, blue, and black. In most cases, two columns of different size stood on either side of the road. The larger one, about three or four meters tall, bore the inscription "Great General of Heaven", and the small one "Woman General of the Earth" (Fig. 48).

The function of a distance-post was related to its location. At the entrance of a temple, a village, or a castle-gate, it was thought of as a guardian protecting the people from evil. In fields, it served as a boundary-sign; and along roads, as a distance marker (Yi Pyeong-do: 1977, pp. 301-2; Lee Sang-il: 1976, p. 7). A few distance-posts definitely survive, but none of them is still considered a post-icon. If the Yi government did set up distance-posts every four kilometers, there must have been, at one time, at least ninety distance-posts along the Yongnam-ro from Seoul to Pusan. All of the distance-posts disappeared in the early twentieth century after the abolition of the postal system, and fossilized toponyms are the only indicators of the past landscape.

The legal code of the Yi Dynasty confirmed that the government built small mounds (sohu) every four kilometers and large mounds (daehu) every twelve kilometers (Kyongguk Daejon, Kongjon, Gyoryang). These distance-
Fig. 48. A distance post (*jangsung*), after Hulbert 1968.
mounds were still in the plain areas in the Yi Dynasty. Small mounds, such as the ones identified at Sinwon-ri near Yangjae Station, are three meters square and one meter high. The large ones such as that identified at Haepyong in Sonsan County are five meter square and two meter high. According to an ancient Chinese classic, a Chinese provincial governor removed the distance-mounds which needed yearly maintenance and replaced them with elms which were also used as shade-trees for the travellers (Mokmin Simso, vol. 12, Kongjon 6, No. 5, Doro). The Chinese started to use road-mounds as distance-markers, but replaced them with trees. They were introduced from China to Korea where they were used as part of a complex including trees and other distance markers.

The origin of distance-mounds is unknown, but Clay's interpretation of the round barrows of England suggests that the distance-mounds may have had a similar function in China and Korea: Clay stated that prehistoric trackway surveyors designed barrows as sighting points. Surveyors sighted a straight line from these barrows and from other markers (Clay: 1927, p. 55). It is very probable that Chinese or Korean surveyors used road mounds as sighting points in flat areas, then later as a road-sign. In the actual landscape, road mounds lined up in straight lines.

In Korea, stone-piles and shrines (sonang-dang) formed a distinctive roadside landscape in the mountain areas as had distance-mounds and distance-posts in the flat areas.
Stone-piles appear at the summits of mountain passes and at the entrances of mountain trails into villages. Such piles were formed from the accumulation of stones carried by travellers from the foot of the mountain to the top. By them, stood shade-trees, mainly elms or pines, and, hanging from their branches, fragments of clothing left in thanks for protection along the road. In some areas, a shrine housing a small altar dedicated to the mountain spirits stands by the shade tree and stone-pile. Complexes of a similar nature occur in many areas of the Old and New Worlds, such as Persia, Tibet, Mongolia, Manchuria, Korea, Kyushu Island, Pacific Coast of the United States, Mexico, and the Andean Mountains (Jett, S.C.: 1979, interview).

Little is known about the origin of stone-piles as road signs in Korea. An official record in the early fifteenth century indicates that stone-piles may have first been used as such during the reign of King Sejong (Sejong Silok, vol. 93, 24:9, Gyesa). Most of the stone-piles, located on the mountain passes, were closely related to folk religion, but it may have originated from the sacredness of ancient roads and of such road artifacts as distance-mounds. Scenes from the past in the Korean mountains can be reconstituted from these artifacts: Heavily laden travellers deposited a stone on the stone-pile. If they had forgotten to pick up a stone on their way up, they tore a fragment of their clothing and hung them on the shade-tree for protection farther along the
way. The complex that included stone-pile, shade-tree, and shrine provided a resting place for travellers and pilgrims. When travellers were caught in bad weather or other need of emergency shelter, they could rest in the shrine-houses.

Confucian Yi society emphasized the filial relationship between the parents and the children and between the rulers and the people. This tradition influenced the roadside landscape with its monuments. The stone monuments in the shrines or pavilions honor women of chaste reputation (yolnyo-bi), dutiful children (hyoja-bi), fallen heroes (chung'yo1-bi), and distinguished administrators (songdok-bi); other Confucian shrines are subsidiary indicators of the locations of old roads. The monuments to women of chaste reputation, dutiful children, and fallen heroes are generally found by the road, and the distinguished administrators at the entrances of former county seats (Fig. 49).

Landuse

The effect of the road upon the landscape relates to population, settlement, and economic activity. The Yongnam-ro zone had a high population density in both urban and rural areas. Urban centers developed in direct relation to their location on a route. The establishment of a new, more efficient road parallel to an old road-way may redirect most of the traffic of the old road, but the
Fig. 49. Indicators of the location of old road.  
(upper) A shrine dedicated to women of chaste reputation, Haepyong.  (lower) The entrance of Ichon County Seat.
characteristics, such as population density and human interaction, that took root along the old artery do not readily disappear. Rather, they extend over a wider zone encompassing both the old and the new roads. For example, the establishment of the military messenger route in the late sixteenth century affected the development of market towns and horticulture along the route. The two parallel roads, the Yongnam-ro and the military messenger route formed an economic artery between Seoul and Chungju in the eighteenth century.

One of the striking elements of roadside landscape is the intensive landuse pattern. In the Yi Dynasty, the eastern and southern vicinities of Seoul were well-known suburban horticultural area (Son Jong-mok: 1977 pp. 379-80). Such large towns as Suwon, Chungju, Sangju, Taegu, Miryang, and Tongnae on the Yongnam-ro also exhibited similar landuse patterns. The farmers near these cities used the Yongnam-ro to transport their products to the city markets and manure from the cities.

Chong Yag-yong, an eighteenth century Sirhak scholar and an advocate of Western techniques, reported the success of commercial farming during that period: "The suburban farmers of Seoul and of other large towns make sizable profit from growing and selling green onions, garlic, cabbage, cucumbers, and other vegetables" (Kyongse Yupyo, Jigwansuje, Jonje 11, Jongjonui 2). In paddies, the cultivation of dropworts (parsley family) yielded profits
five times higher than those from rice, and so did the sale of garden vegetables compared to that of other dry field foodstuffs. Suburban farmers thus commonly chose to cultivate vegetables rather than grains and to take them to the city to sell them (Kim Yong-sop: 1970, p. 169). They also grew fruits and other cash crops. They sold their products in urban markets and purchased, among other goods, manure to take back to their suburban gardens. The tradition of intensive land use has influenced the development of horticulture and the culture of fruit-trees along the Yongnam-ro. Southern Kyonggi-do, Chungju, Sangju, Taegu, and Kimhae are well-known horticulture and fruit producing areas in Korea.

Because of the scarcity of agricultural lands near villages, some old roads have been turned into fields, yet can still in some places, be seen in the field pattern. The change of religious concept about the sacredness of roads and road symbols contributed to the disappearance of abandoned roads. Roadbeds were turned to such agricultural uses as the growing of hot pepper at Sugwang-ni in Ichon County, mulberry-trees at Daean-bo, tobacco at Mirung-ni in Chungwon County, and rice-paddies at Puljong-ni in Munggyong County.

Stone Construction

Great engineering works, such as the construction of fortifications, castles, and temples, also altered the
roadside landscape. They required large amounts of stone, dirt, and timber from the neighboring areas. Fortified gateways stood at the entrances of passes or at locations where they could not be easily circumvented. They were the most striking construction works along the roads. They could be seen from a distance high up on the hillside, long before travellers saw the roads zigzagging up to these gates. The important examples of engineering works on the Yongnam-ro are mountain fortifications and city walls.

The construction engineers dug several quarries near Suwon, for example, in the nearby mountains of Paldal-san, Songnok-san, and Sukji-san (Hwasong Songyok Wigwe, Kwonsu Dosol, Hwasong Jondo). Vehicles and cranes were used to transport stones from the quarries to Suwon. During the construction in the 1780s, roads were built between the quarries and Suwon, and one of them became a part of the new Yongnam-ro.

The fortification of the Saejae Pass began to be constructed in the early seventeenth century. The Yi government established a garrison and built a palisade there (Sonjo Silok, vol. 39, 26:6). Yu Song-ryong, the Right Counsel during the reign of King Sonjo (1567-1608), proposed to establish a defense line between Sangju and Chungju. The construction of fortifications on the Saejae Pass, in accordance with Yu's proposal, was completed during the reign of King Sukjong (1674-1720). The fortifications of Juhul-gwan, Chopak-gwan, and Joryong-gwan
were built in the narrow gorge of the Joryong-chon stream from the bottom to the steep mountain ranges (Fig. 50). The height is five to seven meters in the valley and three to five meters on the range. The gates and gate towers, standing in the center of the fortification, are seen at a long distance. The gates were open early in the morning and closed in the evening, and guards were placed at the doors to check the travellers on the Yongnam-ro.

The area of the Gyerip and Saejae passes has been considered strategically important at least since the Three Kingdoms period. As a result, fortifications and Buddhist temples adorn these passes with materials brought from nearby quarries. In the late Silla and early Koryo periods, Buddhists encouraged for humane reasons the use of wheeled vehicles, rather than packing or dragging by draft animals. Having to transport stone blocks for construction resulted in additional road building. As part of the maintenance of these roads, quarry waste, such as chipped and broken stone, served as road-building materials. Some of these survive to date in the remains of stone-slabs pavement in the Saejae and Gyerip passes.

The engineering works of the Saejae and Gyerip passes are grouped in three distinct areas: the area of Mirung-ni in the northern section of the two passes where the Segye-Sa (Fig. 51) (an eighth century Buddhist temple) and the North Gate (Puk-mun) are located; that of Galpyong in east Mun'gyong County with several temples, including the
Fig. 50. Juhul-gwan: barrier gate of the Saejae Pass built in the reign of King Sukjong (1674-1720).
Fig. 51. Remains of ancient temple on the Gyerip Pass, 7th-8th centuries.
Kwanumsa Temple; and the fortification of the Saeejae Pass. Building materials for these constructions were probably hauled from several different quarries. Unfortunately, only one quarry site near Galpyong-ni, about four kilometers east of Mun'gyong, has so far been identified.

Kasan Castle, which was constructed in sections between 1640 and 1745, is one of the largest stoneworks of the Yongnam-ro zone. The total perimeter of the fortifications is about 7.5 kilometers with a height of about five meters in the lower valley and three meters on the range. The large amount of stone used for its construction is beyond easy estimate.

Road Location and Landscape Change

The Yongnam-ro, which connected the two cores of Korean civilization in the Han and Naktong Basins, developed through Korean history. Such historic events as dynastic changes, foreign invasions, and the transfer of the capital cities caused the shift of the road location. Some of the main highways became local roads or were abandoned; however, most of the roads that connected important cities never lost their functions.

The decisive time for the development of the Yongnam-ro began with the unification of the Korean Peninsula by the Silla Kingdom in the seventh century. An important route extended from Kyongju to the Han Basin. This route remained as one of the important royal highways between
Songdō and Kyongju during the Koryó Dynasty. In 1392, the Yōngnam-rö, between Seoul and Pusan, was established by the Yi Dynasty, and this road became the major artery for about 500 years.

Although dynastic changes in pre-modern times had already led to changes in the network, it is the introduction of modern transportation that drastically changed the road location and roadside landscape. The older roads, however, did persist for a long time in specific areas. Administration, geomancy, Confucianism, economic activity, and military affairs contributed to the preservation of a specific road location and roadside landscape.

In pre-industrial society, the main purpose of the road was for administrative communication. All administrative centers were connected to the royal capital. Unless a county seat changed its location, the course of the road between the capital and the county seat was also located on the best way. But site selection is not immutable; the value of a site is altered by cultural and political changes. The transfer of the provincial capitals of Chungchong-do and Kyongsang-do in the late sixteenth century is an example, although at the time, the Yongnam-rö was not completely relocated. Only during the early twentieth century did the construction of the Kyongbu Railroad gradually destroy the importance of the Yongnam-rö and bring about the shift of administrative centers into
the Kyongbu Railroad zone. The evidence of change remains as cultural relicts along the old roads. Settlement and field patterns, old buildings, and fossilized toponyms indicate the change.

Geomancy prevailed more in Korea than in China where it originated. It combined with Korean folk religion, the worship of mountain spirits, to influence the location of settlements in Korea (Son Jeong-mok: 1973, p. 60). Although geomancy was often criticized by Confucian scholars, it became widely adopted by the Buddhist monks and Confucian scholars after the systematization with the Yin-Yang theory.

The basic theory of geomancy is based on the protection against cold wind from the northwest in winter and the gain of water; water takes first priority. Water indicates the essence of the mountain, and the origin of the essence is known as the ideal site of settlement. The concept of the protection against wind relates to the surrounding mountain ranges in the north, west, and east. Higher ranges in the north and west are desirable, but in the east and south they should not be too high so as not to block the warm and humid wind from the southeast or the sun light. The ideal site faces a wide and flat basin drained by small streams and is seldom exposed to the outside because the mountain in front of the ideal site protects the site. Most of the administrative centers occupy in small basins, and, with few exceptions, the local
government buildings stand on sunny spots on the southern slope of the guardian mountains.

The geomantically ideal sites were generally isolated from natural routes. Main highways seldom ran through the center of cities. The roads lay apart from the settlements and post stations or inn settlements developed on the exits to these towns.

Confucianism became a socio-political and cultural norm since its introduction particularly in the Yi Dynasty, and was reflected in the bureaucratism that had begun in the early Koryo Dynasty after the adoption of Chinese civil service examination and finally dominated the court of the Yi Dynasty. The political philosophy of the Confucian scholar-officials brought about cultural, economic, and social reforms. Their concept of ancestor veneration was applied as a practical morality that included the sanctity of the original sites of clans, veneration of family graveyards and shrines, respect of family tradition and lineage, and prosperity of the offspring, family shrines, ancestors' graveyards, and family treasures were preserved by the head families at the original sites of clans.

Clan seats and other Confucian settlements normally formed consanguine villages that were independent cultural, economic, and social communities. These settlements had their own economic bases, consisting mainly of agricultural lands, village schools, and often Confucian shrines and village councils. In some areas, several clans
originated together and formed a town. Through competition and cultural contact among the clans, the towns developed as local or regional centers, and became the power bases of the Confucian nobles. If a town had a great scholar or renowned Confucian academy, it could become a cultural center, even if it was located in a rugged area.

Local nobles' points of origin naturally attracted the political leaders' concern. Main communication networks connected these settlements and the royal capital for several purposes: tax collection, recruitment of talent, and control of powerful local nobles. In the Yongnam-ro zone, most of the local centers were several hundred to a couple of thousand meters away from the main highway, but access roads led into the towns. In some areas, road location had shifted because of the improvement of mode of transportation and road realignment, but the changes of location of the roadway mainly happened in the section apart from the cities and were nonetheless minor.

The tradition of Confucian society, which was accumulated for several hundred years, rejected foreign culture, except that from China. The sentiment against the introduction of new transportation was an example in the late nineteenth century; the people in the upper Naktong Basin showed particularly strong opposition to Western culture. This fact retarded the modernization of the upper Naktong Basin and neighboring upper Han Basin, but it
helped the preservation of past landscape until quite recently.

In pre-modern Korean society, physiocracy was the basis of state economy. The Yi Dynasty, particularly, classified the people, who engaged in desirable occupations, into four groups: Confucian scholars, farmers, artisans, and merchants. Among the extractive industries, agriculture was the most respectable, and others were neglected by the government. Trade activity was discouraged in the early Yi Dynasty. The major economic role of the Yongnam-ro was the transportation of tax grains and local products which became the source of state revenue.

In the seventeenth century, periodic markets and overland trade began to develop along the river banks and local roads. Trade routes, which connected with the markets, formed a cobweb network. The existence of periodic markets intensified the development between settlements.

Roads were also developed in strategic areas. In Korea, the most important strategic zone lay along the line which connected the mouth of the Yalu River, the Han Basin and the estuary of the Naktong River. This pivot belt was strategically important in several respects. First, the northern section was the invasion route from the continent and the southern section was the route of maritime invasion. Second, the cores of Korean civilization lay
along this line. Third, most of the large cities were developed in this belt. Finally, this belt formed the economic artery of the Korean Kingdom.

When the political tension was high in the northern frontier, the southern section of this belt served as a rear base. When the southern section faced maritime invasion, the northern section played the reciprocal role. Military movements along this belt were initiated by the Koguryo and Silla monarchies in ancient times, and continued by the early Koryo Kingdom. Such military activities affected the development of military institutions along this zone.

The introduction of Christianity also resulted in landscape changes. A number of road signs which were important symbols of Korean folkways were destroyed because of their pagan connotation to foreign Christians and to native converts. Such was the case of the jangsung, the sonang-dang, and the jonjja-mok that had graced the landscape and had functioned as resting-places for the travellers. Other shrines dedicated to models of filial duty are also important indicators of the locations of old roads.

The introduction of the modern transport system is one of the reasons for the decline of former administrative towns. The new modes of transport required new routes because of the technical characteristics of the new vehicles, and consequently, they brought about changes in
the landscape along the Yongnam-ro, especially between Seoul and Taegu.

In the early twentieth century, the construction of the Kyongbu railway between Seoul and Pusan resulted in considerable landscape change. The Kyonbgu Railway, 450 kilometer long, traversed the richest regions of Korea. These regions produced more than four fifths of the country's agricultural products, held three-fifths of its population, and handled sixty-five percent of the internal trade in the early twentieth century (Griffis: 1905, p. 449).

Before 1904, changes in the landscape along the Yongnam-ro had already taken place, but not to the major degree of those occurring after that date. After 1904, several former county seats and post stations along the road declined. Some strategically located commercial towns and new towns on the new railroads and improved highways began to grow rapidly. These towns not only became administrative, educational, military, and religious centers, but they even adopted the names of the former local administrative centers. For example, the county seat for Yong'in moved to the market town of former Kim Ryang; Kwangju to the commercial inn settlement of former Kyong'an; Chongdo to a new railroad station, and Tongnae to the garrison and trade center of Pusan. Many counties were consolidated into larger ones: Yangji merged with Yong'in, Juksan with Ansong, Umjuk with Ichon, Yonpung with
Chungwon, Hamchang with Sangju, Indong with Sonsa, and Bian with Uisong. The former county seats were reduced to agricultural villages; their formerly large population dwindled; old building sites became agricultural terraces; and old fortifications and government buildings became ruins. The new towns on the railroad and along the improved highway absorbed part of the population of the surrounding areas and of the old towns.

Japanese immigration provided striking changes in the settlement landscapes. The typical Japanese-style wooden houses with corrugated iron roofs formed a distinct contrast with the tile-roofed or thatched Korean dwellings. The Japanese land-use patterns were also quite different from that of the Koreans.

The Japanese undertook a series of surveys of landlordism around 1905 when the Japanese Residency-General was established to prepare the way for Japanese colonization (Shin Yong-ha: 1978, p. 18). In the field surveys, they reviewed both state and private lands. They subsequently colonized both types of property and consolidated them into large parcels that ranged from several hundred to thousands of hectares (Koh Sung-jae: 197, pp. 332-37). These tracts became the foundation of Japanese immigration and commercial agriculture. The large Japanese settlements developed mainly on former post lands and garrison lands in commercial and railroad towns. Former post stations and garrisons still show the remnants
of Japanese farming settlements.

In the early twentieth century, several Japanese companies invested in lands for colonization of Korea. They established commercial farming settlements along the railroads and new highways for the convenience of transportation of their crops. They cultivated rice, soybeans, and cotton to supply to the Japanese market. The accesses to such port cities as Pusan, Kunsan, and Inchon from the Japanese farming settlements were the only communication and transport route between these settlements and Japan.

Discussion and Summary

Landscape changes throughout history. The Yongnam-ro, one of the oldest roads in Korea, illustrates well such changes. In modern times, the impact of newly introduced Christianity, of such foreign cultures as that of Japanese invaders and of such new technology as modern transport system, have been very significant. Because of the accelerated rhythm of technological changes, these events altered the Yongnam-ro landscape in positive, but also in negative ways far more than several thousand years of premodern history.

In the early days, Korean road engineers conformed roads to natural landforms rather than destroying the natural harmony, but changes of roadside landscape were inevitable. The general surface of the Yongnam-ro is a
valley and hill complex. In most sections the roadways were built on floodplains or river terraces; even in the mountains, they ran through the valleys.

The characteristics of landscape of the Yongnam-ro can be identified in four aspects: landform, vegetation, road signs, and land-use patterns.

The swamps in the Han and Naktong rivers were reclaimed in the early days, and dikes were used as roadways in many areas. Human impacts on the vegetation are striking in the Yongnam-ro zone. Long-continued agricultural activities, lumbering, and fire destroyed the natural vegetation. Almost all the present vegetation communities are the results of reforestation projects. The distribution of subtropical vegetation in the upper Naktong valley is unusual in due consideration of latitude; they must have been transported by man and his allies because of their economic value and their antecedent ability to live in the new regions. The distribution of feral domesticated plants along the abandoned roads is striking. Some of them are still used by the local people.

Traditional roadside trees, such as elms, pines, and willows marked the historic roadside landscape, but the Japanese gradually substituted Italian poplars. The surviving old trees still in some places indicate the location of the Yongnam-ro.

The economic impacts on the landscape of the Yongnam-ro are identified in the intensive landuse pattern and the
remains of engineering works. The tradition of landuse has influenced the development of horticulture and the culture of cash crops. The remains of fortifications, castles, reservoirs, and temples indicate the altering of roadside landscape in premodern times.

After the Kap-o Reform of 1894, the Yi government abolished the old postal system and introduced the Western style of communication. Roadways began to be improved for automobile transportation, and the first railways were constructed starting in 1899, but those improvements were done by the foreigners who neglected Korean tradition.
CHAPTER VIII

THE IMPACTS OF THE YONGNAM-RO

Introduction

The functions of the Yongnam-ro varied through time. In ancient times its importance was mainly strategic. Its administrative function was emphasized during the Koryo and Yi Dynasties. But not until the seventeenth century did the Yongnam-ro finally contribute significantly to the political integration of the Kingdom. Before that, its socio-cultural impact was poor. The limited opportunity for government officials to travel through their country impeded the growth of Korea.

In the seventeenth century, the Yi government officially abolished the law against periodic markets. The Yongnam-ro was strengthened by the increase of travel and transport injecting new life into the road.

Cultural and technological innovations gave a dynamic aspect to eighteenth century Korea, reflected in cultural patterns, the distribution of industry and the urban network. Material culture elements are, however, only the visible imprints of change on the landscape.

Language, religion traditions, social structure, and technology are key elements to examine and to detect the diffusion of culture. The chain reaction of the technological exchange between regions, the development of industries and of the urban network and the fluctuations of population are particulars to be studied.
Diffusion of Culture

In the discussion of diffusion through the Yongnam-ro, whether it is cultural or technological, the role of the Yongnam region in Korean history should be emphasized. The Yongnam region, mostly belonging to the Naktong Basin, formed a unique culture region that retained a thousand year long Silla tradition. It was an innovation center and one of the main gates of introduction of foreign culture. The contributions of the Yongnam-ro zone to Korean culture are the products of many great men, their influence on modern Korean language, the development of religion and the diffusion of agricultural technology.

The Yongnam-ro zone was a leader in Confucian learning and Chinese culture since the Three-Kingdoms. After the fall of the Silla Dynasty, many Silla Court officials and scholars moved to Songdo and gained civil service positions in the Koryo Court. The use of the civil service examination for Court officials after 958 offered more chances to Confucian scholars. Yongnam nobles had an advantage because people from the south western region (Cholla-do) who could have been strong competitors, were excluded by the Koryo Court.

The migration of elite groups from the Yongnam region to the royal capital promoted cultural exchange between the Yongnam region and the capital and between the Yongnam region and foreign countries. Korean enboys to China and Japan, many of them from the Yongnam-ro zones, came into
contact with foreign cultures during their stays in Peking or Kyoto. Japanese merchants with whom Korean merchants had contacts at Pusan-po. In ways like these, the Yongnam region gained innovations that were often passed to Korea in general.

As a rule, the Yi Court appointed government officials as administrators of regions other than their own. Since many of these administrators were from the Yongnam region, they diffused the culture of that region to their administrative districts. Upon retiring, they brought back with them new concepts such as technological innovations and additional Confucian learning.

The Yongnam-ro zone was the core of noble clans that were distributed in three main areas. In the Upper Han Basin, the best known noble clans were the Yi of Kwangju, the Yi and Min of Yoju, the So of Ichon, the Pak and An of Juksan, and the Han of Chongju. From the Upper Naktong Basin, the most important noble power base, came many of great men during the late Koryo Dynasty and the Yi Dynasty; the best known clans were the Yi and Kim of Sangju, the Kwon and Kim of Andong, the Cho of Pungyang, the Yi of Yean, the An of Sunhung, the Kim and Kil of Sonsan, the Yu of Hahoe, the So and Bae of Dolsong, and the Yi of Songju. In the lower Naktong Basin, the southern part of the Yongnam region, the most powerful nobles were the Kang and Han of Chinju, the Kim of Kimhae, the Son and Pak of Miryang, the Chong of Tongnae, and the Choe, Kim, and Pak
of Kyongju. These consanquine villages were common in the Yongnam-ro. According to a Japanese government report in the 1930s the Yongnam region had 381 out of the 1685 well-known Korean kinship villages, most of them with a long historical background (Zensho: 1935, p. 218).

The upper Han and upper Naktong Basins were thought of as the best to live in the country. Yi Jung-whan, an eminent Sirhak geographer classified the dwelling site of these two areas into three categories; excellent sites, good sites, and favorable sites. (Taengni-ji, vol. I, Pokgo-Chongnon).

The excellent sites were the mountain valleys of the Soabek and Taebaek. Mun'gyong, Sangju, Kimchon, Boun, Yongdong, and Muju occupied good sites. Favorable sites included Chungju, Wunju, Chongju, Umjuk, Yongin, Kongju, Sonsan, Songju, Taegu, Chinju, Namwon, and Kurye (Fig. 52). Most of these sites were located on one side of the Sobaek Range, which had since ancient times played the role of cultural and political divide. In the late Yi Dynasty, some of these sites were highly recommended by geomancers. Some people migrated to the "Ten Ideal Sites" selected by a legendary prophet as best refuges and excellent sites. Among these sites, Punggi was the most famous, and the Kyeryong Mountain in Kongju County, as well as Kuchon-dong in Muju County, ranked second.

The upper Naktong Basin was chosen by unique religious settlement of scholar-farmers who remained isolated, but
Fig. 52. Site classification according to Yi Jungwhan (17th century) and refuge sites of southern Korea.
donated the fruit of their labor to the area and contributed to the development of a secondary education system. (Except in the domain of education they could be compared to Amish settlements of Pennsylvania in the U.S.A). Although these settlers came from various areas, the majority of them claimed the northwestern provinces of Pyongan-do and Hwanghae-do as their birth-places. They made important contributions to the development of local economy. They reclaimed mountain slopes for ginseng gardens, orchards, and mulberry plantations. Because of land-shortage many of them turned to the development of textile manufacture rather than to agriculture. This area became a new core of technological innovations. To this day, this area has been famous for its ginseng, other medicinal herbs, fruit-orchards, and textiles.

The central government frequently recruited people from the Yonnam-ro zone for their notable achievements. The Court recruited men for the civil service through the royal school system. The state-supported Confucian schools in every county regularly sent students to be examined by officials for possible enrollment in the National University. After completing higher studies, these scholars received governmental posts.

Recruitment through examinations was initiated during the reign of King Kwangjong of the Koryo Dynasty (949-975). Conducted three years, the civil service examination included three stages: provincial, central, and palace
examination. These examinations influenced the development of educational institutions such as the four high schools (haktang) in Seoul and the high schools (hyanggyo) in local areas, and the National University (Songgyun'gwan) in Seoul. In the early Yi Dynasty, every county had a high school established and managed by the county magistrate. After the Japanese invasion, however, it began to be replaced by the Confucian Academy (Sowon).

The Confucian Academy was first established in Sunhung County (Paekwundong Sowon) in Kyongsang-do in 1543. Although established as private institutions, many academies held royal charters and land grants. Their number kept on increasing. There were 190 academies in 1649, 604 in 1720, and approximately 740 in the early nineteenth century (Choe Ching-Young: 1963, pp. 70-71; Yi Sang-baek: 197, p. 384). Out of this number about 45 percent or 335 academies were located in the Yongnam-ro zone; about 50 in the twelve counties of Kyonggi-do, 25 in the 9 counties of Chungchong-do, and 260 in the 72 counties of Kyongsang-do (Fig. 53). This concentration of Confucian academies shows the role that the Yongnam-ro played in taking students as "tribute" to the Royal Court.

Language eventually reflects its speakers' geographic backgrounds, including such elements as environment, contact with different cultures, and migrations (Heller: 1972, p. 31). Few studies have been made of the origin and evolution of the Korean language, but it is generally
Fig. 53. Distribution of Confucian academies, 18th century,
believed that it evolved from many different dialects through long cultural contact among the people. The rugged landforms of the Korean Peninsula served as shelter for people during wartime. The natural isolation of the various basins promoted the development of several major dialects such as those of Kyongsang-do, Cholla-do, Chungchong-do, Kyonggi-do, Pyongan-do, and Hwanghae-do, and Hamgyong-do.

Linguistic evidence suggests that contact among the ancient tribal kingdoms was sporadic and limited. There was no genetic relationship between kingdoms, nor was there much migration or trade. The military campaigns of the Three-Kingdoms period may have been a first step toward the unification of the Korean language. Koguryo troops brought their dialect to the Han Basin. The Sobaek Range became the language divide between Silla in the Naktong Basin, Paekje in the southwestern region, and Koguryo in the northern part of Korea and in Manchuria. Chungchong-do was the transition area between the northern and southern people. Today's dialect frontier coincides with that ancient political frontier.

Political activity and the development of communication network encourage language standardization (de Carvallo: 1971, p. 78; Wagner: 1972, p. 130). The unification of the Korean Peninsula by Silla led to such standardization. Silla elite groups migrated to new territories, making the Silla dialect the standard official language, but its influence was limited because of regional
resistance from the former Koguryo and Paekje territories out of reach from the capital of Silla.

The reunification of the Korean Peninsula by the Koryo Dynasty promoted linguistic unity. Factors that facilitated language standardization included the swift Koryo postal system that focused on Songdo, the centrally located capital; Buddhism as state religion through its common religious ceremonies, education, publications, and pilgrimages; commercial activity connecting the major cities; and finally the migration of the Silla elite to the Koryo capital.

The influence of the Silla dialect on the Koryo Society was considerable. In the early Koryo Dynasty, the Court and social structure were strongly influenced by Silla. The cultural diffusion from Silla to Koryo was accomplished through intermarriages between Koryo and Silla nobles, adoption of the Silla system, and implementation of the civil service examination.

These intermarriages resulted in the modification of both dialects, but the Silla dialect had a greater influence overall because Silla was much more advanced culturally while Koryo nobles were less educated, military leaders.

The appointment of Silla nobles in the Koryo Court promoted the adoption of a special high-class language by the Koryo society because Silla scholars brought with them their legal code, culture, art, and traditions. The
Yongnam elite's domination of the civil service examination also encouraged the adoption of the Silla dialect.

The impact of the Yongnam-ro on the diffusion of dialects is striking. If we compare the distribution of dialects along the Korean main highways from Seoul to their termini we realize that fewer dialects are spoken in the Yongnam-ro zone than in other areas. The southwest route from Seoul is divided into three major dialect areas: Kyonggi-do, Chungchong-do, and Cholla-do; the northwest also has three dialect zones: Kyonggi-do, Hwanghae-do and Pyong'an-do; but the Yongnam-ro zone is divided into only two dialect areas, Kyonggi-do and Kyongsang-do. The Kyonggi dialect is spoken from Seoul to the northern part of Chungchong-Pukdo. People in the Chungju area speak a dialect that sounds closer to southern Kyonggi than to the true Chungchong dialect. In other words, they speak standard Korean. Although the Sobaek Range is the language divide between the Han Basin and the Yongnam region, the accent of the Kyonggi dialect is generally retained in the northern Naktong Basin.

The diffusion of religious ideas was one of the important functions of the Yongnam-ro, but it has been unduly neglected by scholars. Institutionalized religions generally first take hold in cities (Wagner: 1972, p. 31). In ancient Korea, trade centers coincided with sacred places, shrines, and royal tombs. After the introduction of Buddhism to Korea, major temples in the royal capital
city controlled the lower echelon of temples. Kyongju was the center of Buddhism during the Silla Dynasty. During the Koryo Dynasty, Songdo became the core of Buddhism, and Kyongju became the secondary center, while other major cities had lower level religious centers. Buddhism dominated the various annual ceremonies and festivals patronized by the state. The two most important nationwide festivals were the Lantern Festival (Yondung-hoe) held in February and the Harvest Festival (Palgwan-hoe) in November (Yi Pyeong-do: 1977, vol. 27, p. 274). During these festivals, many people went on pilgrimages to Songdo, Kyongju, or other religious centers. Communication among these centers grew through the use of royal roads or local tracks. In many cases, as in the West, the local tracks were improved by the monks or monasteries and used by pilgrims (Crump: 1936, p. 25; Peattle: 1955, p. 75).

After the adoption of Confucianism as the state religion of the Yi Dynasty, Buddhism began to wane. Large temples in major cities were closed; only mountain temples could survive. Confucianism secured every city through the support of the government. The hierarchical order of Confucianism coincided with the secular administrative structure. Seoul was the core of Confucianism. Provincial capitals were secondary Confucian centers. All county seats used to have Confucian shrines and academies. Confucian institutions were open only to the noble class. Because Confucianism had become a political ideology and a
code of ethics rather than a religion, interregional pilgrimage did not exist.

The introduction of Roman Catholicism began in the 1780s. A long-defeated political faction known as the Nam'in gathered in Kyonggi-do in 1784 and started to propagate Roman Catholicism. They were influenced by Peking-based Catholicism. (Hulbert: 1969, p. 109; Yi Sang-baek: 1977, pp. 307-8). From Yanggun, the original Korean Catholic center, Roman Catholicism diffused to neighboring counties of Kwangju, Yangju, Seoul, Yoji, Ichon, Umjuk, Yong'in, Ansong, Wonju, and Umsong. The influence of Catholicism extended to the areas of Boryong-Asan, Jinsan, Yangju, Chungju and Chechon by the 1790s. However, Catholicism could not yet find important bases in the Yongnam region, especially in the southern section that was the conservative stronghold of Korean Confucianism (Fig. 54). By the 1810s, Roman Catholicism had finally spread to the northeastern mountain areas of the Yongnam region through the migration of Catholics from the Asan area. By the late nineteenth century when Catholicism had spread throughout most of the country, some major cities in the Yongnam-ro zone such as Suwon, Changhowon, Chungju, and Taegu did become strongholds of Catholicism. This development of Catholicism occurred despite its being officially banned in 1785 (Yi Song-baek: 1977, pp. 315-327; Hatada: 1969, p. 86).

In the early nineteenth century, Catholics preferred
Catholicism

Tonghak (Eastern Learning)

Fig. 54. Diffusion of religion in Korea.
to travel through commercial routes rather than on main highways patrolled by the police and travelled by government officials. Many Catholics undertook low-status occupations such as potter and peddler, or became hermits in order to disguise their true identity. Consequently, the diffusion of Catholicism had the horizontal characteristics of commercial networks, i.e., it was interregional rather than being vertical and administrative and therefore much less linked with the capital. Especially in its southern section, the role of the Yongnam-ro as a diffusion route of Catholicism may not seem important, but in the Upper Han Basin, the imprint of this religion is striking. The high steeples of Catholic churches and the Catholic Schools form a striking contrast in style with the surrounding peasant houses. What was once used as a protective trade also left its mark; In Kwangju, Ichon, Changhowon, Yoju, Umsong, Anson, and surrounding areas. Catholics are still engaged in pottery manufacturing.

In 1860, Choe Che-u (1824-1864), a Kyongju native, established a new religion know as Tonghak (Eastern Learning). The Tonghak movement was nationalistic. It reflected the Korean commoners' concern about the decline of national strength, miserable living conditions fostered by an inefficient administration, and a reaction against the increasing power of Catholicism.

Despite persecution by the Yi Court, a number of
people became adherents of the Tonghak, and it diffused through western and central Korea. That religion established a number of bases in Kyongsang-do and in the Upper Han Basin and also diffused to other parts of Korea. The Tonghak Rebellion, in 1894 was comparable in scale to the Taiping Rebellion in China.

From ancient times to the present, the Yongnam region has been a base of conservatism. In ancient times, that region was the core of Korean Buddhism, then it became the core of Confucianism after the implementation of the civil service system during the Koryo Dynasty. The relationship between the Central Court and the Yongnam nobles was inseparable for more than a thousand years. Their Confucian tradition was so rigid that Catholicism had difficulty establishing bases in that region. Both Yongnam nobles and commoners did their best to expell Christians. Therefore, it became the natural reactionary core of the Tonghak movement which was fundamentally opposed to Christianity introduced through China. Ironically, the Confucian government did not support this conservative movement and in so doing lost the support of the Yongnam region who cut ties with Seoul and maintained their owned ideology.

Diffusion of Technology

Technological improvement of agriculture was an expression of nationalism in the face of a growing
population. Little scientific research has been done about the population size of the Yongnam region throughout history; however, official records indicate that the population of the Yi Dynasty doubled between 1669 and 1800 (Chungbo Munhon Bigo, Hogu-go I, Chunggwon 1). In the Yi Dynasty, the Yongnam region held more than 20 percent of the population of Korea. This population increase provided an opportunity for the people to pay attention to the development of technology and exploitation of resources.

The distribution of agriculture still reflects the early farming diffusion centers, old agricultural centers used to have a fairly advanced technology and good storage and distribution systems that can be traced through the communication routes from their centers.

In the Yongnam region, agricultural progress was achieved five fundamental ways: 1) farmers learned to prepare their soils more effectively with more knowledge, better tools, and new manufacturing techniques; 2) new strains of high-yield or drought-resistant seeds were introduced, as well as seeds that ripened faster allowing two crops a year instead of one; 3) hydraulic techniques and irrigation were applied to more agricultural lands also resulting in a higher yields; 4) new crops or new ideas to improve agriculture were introduced through content with foreigners; and 5) commerce allowed more specialization in crops other than basic food grains, such as medicinal plants and fiber crops, among others.
Agriculture started to be developed in the late Neolithic, between 3,000 and 2,000 B.C. by the makers of combware pottery. According to ancient Korean history, Tang'um, a legendary king and culture hero, came down to the Paektu Mountain on the northern border of Korea, in 2333 B.C. The incipient farmers probably grew such field-crops as soybeans, red beans, foxtail millet, sorghum, and buckwheat. The culture of rice seems to have been introduced into Korea from China during the Bronze Age (1000 B.C. – fourth century B.C.). Carbonized rice has been found in shell mounds in Kimhae in the southern Yongnam region, indicating that rice began to be a major staple in southern Korea during the Bronze Age (Kim Won-ryong: 1978, p. 133). Historic records of rice farming during the three Han periods mention only the area south of the Han River (Kim Jung-bae: 1974, p. 133). The Yongnam region was probably one of the original areas of rice and culture in Korea.

The Yongnam region became the innovation center for rice culture. With little irrigation, ancient farmers depended on rain for the cultivation of paddy rice, and they planted upland rice during long droughts. By the Silla Dynasty, farmers were able to plant paddy rice and upland rice concurrently. Ancient farmers planted the seeds directly into the paddies or dry fields, resulting in poor yields. Rice seedling transplant, therefore, was a major innovation in the culture of rice.
The origin of seedling transplant is not clear, but such a method was already used by Chinese farmers in the twelfth century and it was applied in the Yongnam region during the Koryo Dynasty (Kim Yong-sop: 1974, pp. 9-13; Elvin: 1973, p. 114). It was first applied in the northern Yongnam region and diffused to Cholla-do, Chungchong-do, and Kyonggi-do. During the reign of Kings Sukjong and Yong-jo (1674-1776) it also diffused to northwestern Korea (Jungbo Munhon Bigo), Jonje-go 7, Junggwon, Takri-ji 3, Panjok-sa, Kwon-nong).

Mastering seedling transplant for rice culture brought about an agricultural revolution by the eighteenth century and became the dynamic drive of an era of economic revolution from the southern centers and even diffused into the little developed northern provinces. There were considerable advantages to seedling transplant. Seeds were not wasted and the yield per unit of land was greatly increased. It was easier to weed and harvest. Farming season was shortened. Harvesting was advanced by several weeks. Farmers could plant winter crops such as barley, wheat, or rye after the rice harvest. Annual double-cropping with rice and barley, oat, or wheat was practiced in the south, while three crops were possible over a two-year period in the north. By the eighteenth century, crop rotation with barley, soybean, and wheat was commonly practiced (Kim Yong-sop: 1970, p. 181).

Seedling transplant was accompanied by the improvement
of the irrigation system, the farming tools, and of fertilizing. Proper fertilizing prevented the soil exhaustion more likely with double-cropping. Farmers deep-plowed their fields after the autumn harvest and spread green manure. In the spring, fields were plowed once again. Farmers learned the extensive use of manure, river-mud and lime as fertilizers.

Without good irrigation, seedling transplant could not have been successful because of recurrent drought damage. In the early Yi Dynasty, the Yongnam region had between 770 and 800 reservoirs. This number increased to 1,520 by the Yong-Chong Era (Lee Kwang-rin: 1961, p. 137). About 60 percent of the reservoirs of the country were located in the Yongnam region. The large counties of Kyongju, Sangju, Sonsan, Songju, Taegu, Yongchon, Miryang, Chinju, and Kimhae had a well-developed irrigation system.

Tea and ginseng are the two main "luxury crops" that diffused from the Yongnam-ro zone. The cultivation of tea in Korea arrived there with Buddhism, in the seventh century, appearing first on the southern slope of Chirisan, probably today's Hadong County of Kyongsang-Namdo (Samguk Saigi, Silla Pon'gi 10, in the third year of King Hungdok's reign). The cultivation of tea was limited to the southern region because of climatic conditions. Tea industry prospered in Kyongsang-do and Cholla-do during the Koryo Dynasty, but it began to decrease and finally disappeared during the Yi Dynasty because of the
restrictions imposed upon Buddhism and the heavy tax on tea plantations. The influence of tea culture, however, remained important. Tea was an important trade item on both domestic and foreign markets, and it influenced the development of ceramic arts during the Koryo Dynasty. The tradition of tea culture still survives in limited areas of the southern region and along the Yongnam-ro zone where there are remains of tea gardens and ceramic manufactures. It is also reflected in some place-names.

Korean ginseng, believed to be a cure-all by many Far Easterners, was exported to China, Japan and other countries since ancient times. The increased domestic and foreign demand exhausted the mountain ginseng supply and promoted its domestication in the 1760s:

A memorial to the Throne by Chong Man-sok, magistrate of Yon'il County. Recently the high ginseng trouble has been causing many problems for the people. The mountain ginseng supply is decreasing while the amount of cultivated ginseng is increasing... (Mok Min Simso, Vol. II, Kongjon 6, No. 1 Salim).

The domestication of ginseng began in Sunhung and Punggi counties (Yi Sang-baek: 1977, p. 568). The technique of ginseng cultivation spread to neighboring Andong, Yechon, Mun'gyong, Sangju, Bongwha, Chongsong, Yongdok, and Yon'il counties. It diffused northward, westward and southward. Kaesong finally became the core of Korean ginseng processing (Fig. 55).

The Yongnam-ro zone also played an important role as a diffusion center of such exotic crops as cotton, tobacco,
Fig. 55. Diffusion of agricultural technology and the development of textile industry in Korea, 18th century.
potato, red pepper, squash, and maize. Cotton seeds were brought to Korea in 1364 by Mun Ik-jom, a Korean envoy to Peking. It was first planted in the Yongnam region and diffused to other regions. In the fifteenth century, the Yi government recognized the economic value of the cotton industry which then became a major Korean industry. During the Yi Dynasty, Korea was the largest exporter of cotton cloth to Japan (Koh Sung-Jae: 1977, p. 272).

Maize, hot peppers, squash, and especially tobacco and sweet potatoes, the most important of the crops, introduced to Korea through Japan after the Japanese invasion. Tobacco started to be cultivated in the south, then western Chungchong-do, western Cholla-do, and Pyongan-do became the major Korean tobacco producing areas. It became a popular cash-crop for the farmers of Chungchong-do (Taengni-ji, Bokgo Chongnon, Saengni). The Yongnam-ro zone between southern Kyonggi-do and northern Kyongsang-do forms the core of the tobacco producing area.

In 1762, Cho Om, Korean envoy, returned from Japan bringing with him sweet potato seed plants. After successful experimental cultivation in Tongnae, this crop became an important hardy plant as was the potato which had been introduced through China (Yi Sang-baek: 1977, pp. 576-8). Hot peppers and maize also spread from the Yongnam-ro to the rest of the country and were major innovations in the Korean diet. Maize though was mostly restricted to the rugged provinces of Pyongan and Kangwon. In
the Yi Dynasty, the Yongnam region was the seed improvement center for subtropical crops. The upper Han Basin specialized in tobacco, maize, and potato seeds. Both areas are still famous for the quality of their seed-supply to other area.

The impact of the agricultural revolution initiated in the Yongnam-ro zone was considerable in many ways. In the eighteenth century, commercial agriculture became widely spread in the Yongnam-ro zone. Large towns participated directly in agriculture. Suburban fields not only contributed to cities' food supplies, but were often owned and cultivated by city-dwellers themselves. Mulberry plantations and orchards developed south of Seoul. Gwachon, Kwangju, and Yanggun counties specialized in horticulture. Pears, peaches, persimmon, and jujube were produced in most counties of the Yongnam region. Agricultural specialization still survives. Hence Taegu and Chungju are still famous for their apples; Seoul, Miryang, and Ulsan for their pears; Pohang for grapes; and Chinju for persimmon (Chosen Sotokufu: 1926, pp. 153-170).

The Yongnam-ro zone was the largest producer and consumer of Korean cotton cloth, hemp cloth, and silk, and one of the major producer of ramie cloth. Manufacturing centers generally coincided with the raw-material producing areas. Sangju, Ulsan, Uisong, Andong, and Chungju were cotton cloth centers; some counties in Kyongsang-do were silk centers; and Songju and Andong were hemp cloth centers.
In the eighteenth century, these cloths were traded at 316 textile markets that generally dealt in all kinds of fabrics. The distribution of these markets shows that the Yongnam-ro zone was the largest textile producing area of Korea (Table 20). At least 40 percent of markets dealing in cotton, 30 percent of silk markets, and 40 percent of hemp or ramie markets were located in the Yongnam-ro zone.

The tradition of fiber crop cultivation and textile manufacture paved the way for modern Korean textile industry. In the Yongnam-ro zone, Anyang, Suwon, Chongju, Taegu, Masan, and Pusan became the leading textile industry centers, and Yong'in, Ansong, Chungju, Punggi, Sangju, Ulsan, Miryang, and Chinju became secondary textile centers.

In the eighteenth century, industry depended largely on organic materials, particularly on wood and agricultural products, although some mineral resources were utilized. Production of consumer goods received much more attention than capital goods. Local industries produced sedge mats, bamboo baskets, paper, ceramic, and ironwares, while cities were known for their leather goods, bronzewares, furniture, hats, and liquor. Some of these products were concentrated in specific areas near raw materials. Floral patterned mats were produced in the northern Yongnam region. The southern Yongnam region was well-known for its bamboo
Table 20

Textile Markets in Korea (1800)

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Cotton-cloth markets</th>
<th>Silk markets</th>
<th>Hemp-Ramie Cloth markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyongsang-do</td>
<td>68</td>
<td>21</td>
<td>54</td>
</tr>
<tr>
<td>Cholla-do</td>
<td>38</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>Chungchong-do</td>
<td>18</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Kyonggi-do</td>
<td>32</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Kangwon-do</td>
<td>24</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Hwanghae-do</td>
<td>23</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Pyongan-do</td>
<td>42</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Hamgyong-do</td>
<td>13</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>258</strong></td>
<td><strong>73</strong></td>
<td><strong>175</strong></td>
</tr>
</tbody>
</table>

Source: Kim Yong-sop: 1981, p. 163
baskets. Yongju, Miryang, and Ham'an had paper mills, although the Yongnam region was not overall a major paper producing area.

Iron, copper, and gold were important long distance trade items. There were two major iron-mining areas and a few minor ones. The area of Kimhae–Yangsan has been well known for several centuries for the export of its high quality iron to Japan (Choe Wan-gi: 1976, p. 395). Good quality iron was also produced in the Chungju area. Iron manufacturing developed mainly near the mining sites or near large agricultural centers, and ironwares were traded on local markets. In the Yi Dynasty, 7 out of the 17 iron mills of the country were in the Yongnam-ro zone (Fig. 56).

The Yongnam-ro zone was also a major ceramic manufacturing center. Punwon in Kwangju County supplied high quality ceramics to the Royal Court. A number of ceramic kilns developed in the neighboring counties. Hadong, Koryong, and Songju counties were well known ceramic manufacturing areas.

The development of a rural manufacturing system (cottage industries) promoted domestic and foreign trade in the Yongnam-ro zone. Domestic trade was initiated by the Songsang (Merchants of Kaesong), the Kyongsang (Merchants of Seoul), and the Raesang (Merchants of Pusan), and it led to the development of commercial routes and fairs as well as to the use of coins.

The merchants of Kaesong were commercial pioneers.
Fig. 56. Cottage industry in the Yongnam-ro zone, 18th century.
during the Yi Dynasty. After the fall of Koryo, they succeeded in opening up domestic trade routes. They cornered the markets for local products and dealt in goods from other areas. After the seventeenth century they dominated not only the domestic trade from Uiju to Tongnae, but the foreign trade as well. By the eighteenth century, they already controlled the trade with Japan at Pusan (Kang Man-gil: 1972, pp. 106-08).

Coins had been minted in the Koryo and earlier dynasties, but had never been widely circulated. In most regions by early Yi period, most people still traded in kind. Except for Kaesong and within a 50 kilometer radius of that town, where nobles had become merchants, people of to other areas used hemp or cotton cloth as the medium of exchange. Kim Yuk, the originator of the Taedong-pop (Law of Great Correspondence), realized the need for change and initiated the use of coin-money in the Yongnam-ro zone. By 1656 travellers could pay for their lodging with money instead of cloth (Yi Sang-baek: 1977, p. 264).

Service centers in agricultural regions were located at functional intervals, that is, about a day's journey from each other. Sometimes their commercial spheres overlapped and economic squabbles followed. But there were no conflicts over market-days which very shrewdly were scheduled. Korean markets were active once every five days with dates that differed from place to place. There were 1-6, 2-7, 3-8, 4-9, ro 5-10 markets, the numbers
designating the days of the lunar month (synodic lunar month = 29.53 days) when they were to open. Such a system was applied in every county (Table 21).

About 250 markets in the 60 counties along the Yongnam-ro served as service centers for the local farmers. The large counties Kwangju, Chungju, Sangju, Taegu, Chongdo, Miryang, and Tongnae had 8 to 13 markets. These markets were part of commercial districts, themselves dominated by higher order central markets. (Kwangju-bu Upji), Jansi; Chungchong-do Upji. vol. 1, 2, 3, 4, 5, 7; Taegu-bu Upji, Jangsi; Dorogo, Jangsi).

It is possible to reconstruct ancient market areas and their approximate limits by looking at the contemporary distribution of adjacent markets (Rogeres, H.B.: 1970, p. 106). The Yongnam-ro was divided into several major market areas: Songpa, Ansong, Chungju, Sangju, Kumsan, Taegu, Miryang, Masan-po, and Pusan; no rival towns were allowed in each of these areas (Fig. 57).

Some of the large market-towns had special periodic fairs, which played a part in long distance trade. Special fairs were classified into several groups: medicinal fairs (Yangnyong-si), livestock markets, vegetable markets and the Woegwan-gaesi (trade base with Japanese at Pusan – a category by itself).

Herbal medicine markets first opened in Taegu, Chonju, and Wonju in 1650s, but only Taegu's prospered. Two later medicinal markets established at Chongju and Chungju closed
Table 21

Market days in Kwangju County (1800)

<table>
<thead>
<tr>
<th>Market</th>
<th>Code</th>
<th>Calendar of Opening Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Songpa Sepichon</td>
<td>1-6</td>
<td>1, 6, 16, 21, 26, 1</td>
</tr>
<tr>
<td>Kwangju-up Sapyong</td>
<td>2-7</td>
<td>2, 7, 12, 17, 33, 27, 2</td>
</tr>
<tr>
<td>Kyong'an Naksaeng</td>
<td>3-8</td>
<td>3, 8, 13, 18, 23, 28, 3</td>
</tr>
<tr>
<td>Dokbong Konjiam</td>
<td>4-9</td>
<td>4, 9, 14, 19, 24, 29, 4</td>
</tr>
<tr>
<td>Palgol</td>
<td>5-10</td>
<td>5, 10, 15, 20, 25, 30, 5</td>
</tr>
</tbody>
</table>

Sources
1. Kwangju-gun Kag Sijang Podudojom gup Hongchok gupyol Songchaek.
Fig. 57. Trade areas of the Yongnam-ro region, 18th century.
in 1920. The Taegu Yangnyong-si was open in January, February, and October, and domestic and foreign medicines were traded at that market (Moon Jong-chang: 1942, pp. 22-7).

Livestock markets were distributed in all major market areas, but Songpa, Chungju, Sangju, Taegu, Pusan, and Masan were the largest ones. Songpa, Kyong'an, Sapyong, and Gwachon started to develop as the vegetable and fruit markets of Seoul. The livestock markets gathered large crowds in the fall and spring, and the vegetable markets in the fall when people traditionally pickled vegetables (kim-chi) for the winter season.

The Woegwan-gaesi opened every five days, as well as when the Korean or Japanese merchants had an excess of goods to trade. A very limited number of merchants got permits to trade at that market, but its influence was considerable because of the abundance of goods brought there to be traded.

These periodic gatherings of large numbers of people from various locations led to the diffusion of diseases. Both foreign diseases introduced in the country through Pusan where trade with the Japanese and local diseases were propagated by long-distance traders. The warm and humid climate of the southern Yongnam-ro region makes it a highly probable center of transmission of such diseases. Pulmonary distoma and the liver-fluke disease are associated with that region. These diseases and others
probably travelled from the Yongnam region to the north through trade roads, unwanted "trade-items" though they were.

Urban Networks

Among the factors that decide the fate of towns, nothing is more striking in its effect than such political events as dynastic change, transfer of a capital city, or war. But political changes do not, however, have absolute control over the development of cities. In most urbanized sectors, the sites of most contemporary Korean cities were determined as early as a thousand years ago. Most of them served as administrative headquarters, cultural centers, and economic foci.

Various aspects of the importance of the Yongnam-ro as an urban network can be examined: contribution to the revenue of the Yi government, strategic important, large population; and recruitment of civil servants. Although this zone was severely damaged during the Japanese invasion and its economic dominance dwindled for a century, the Yongnam-ro zone had recovered most of its influence by the Yong-Chong Era. In the eighteenth century, the urban network in the Yongnam-ro zone was reorganized and strengthened by the establishment of the pabal (military messenger system) and by the development of commercial routes. Commercial activity created for the first time a non-hierarchical network system among regions.
The relationship between the development of an urban network and tax revenue from the Yongnam-ro zone need to be discussed. The Yi Dynasty was a physiocratic monarchy. Most of its revenue came from land taxes and the local product's tax (Kongse). Taxes in kind such as the tribute (jinsang), commercial tax (sangse), and the fishery and salt taxes supplemented state revenue but only to a minor extent. The Yongnam-ro zone was the largest contributor in terms of land tax and local products tax. This affected greatly the development of the urban network of the Yongnam-ro zone. The land tax levied was 10 percent of the total yield according to soil fertility, and the standard of assessment differed among regions (Table 22).

The size of taxable lands kept on decreasing after the Japanese invasion particularly in Kyongsang-do and Kyonggi-do (Tabel 23). But the amount of tax from the Yongnam region was still relatively high in the eighteenth century because it has the highest quality soils in the country.

In 1770, the country had a total of 451,00 kyol (2,029,500 acres) in rice paddies, 34 percent of which was located in Cholla-do, 26 percent in Kyongsang-do, 21 percent in Chungchong-do, and 19 percent in the other provinces. The total area in dry fields was about 466,660 kyol, with 26 percent in Kyongsang-do, 20 percent in Cholla-do, 23 percent in Chungchong-do and 31 percent in the rest of the country. Assuming that the standard of assessment in Man'gi Yoram was applied to tax collection,
Table 22

Standard of Assessment
du/kyol (one du = approximately 18 liters)

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>RICE PADDY</th>
<th>DRY FIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>du of rice/kyol</td>
<td>du of soy bean/kyol</td>
</tr>
<tr>
<td>Kyongsang</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Cholla</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Chungchong</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Kyonggi</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Kangwon</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Hwanghae</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: *Mang*i Yoram, Jaeyong-pyon, Suse-jo

Table 23

Taxable Lands By Provinces and Years

<table>
<thead>
<tr>
<th>YEARS</th>
<th>PROVINCES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kyongsang</td>
<td>Cholla</td>
</tr>
<tr>
<td>1450</td>
<td>301,150</td>
<td>277,590</td>
</tr>
<tr>
<td>1770</td>
<td>239,020</td>
<td>250,160</td>
</tr>
</tbody>
</table>

Sources: 1. *Sejong Silok Chiriji*
2. *Yoji Doso* Vols. I and II
can be estimated as 1,894,000 du (34,100,000 liters) of rice and 1,931,000 du (34,820,000 liters) of soybeans. In other words, about 36 percent of the rice and 35 percent of the soybean taxes of the country could be levied from the Yongnam region. More specifically, Cholla-do paid about 35 percent in rice and 21 percent in soybean, while Kyongsang-do paid less than 30 percent in rice and 35 percent in soybean. Should large agricultural units such as Chungju, Yoji, Kwangju and Suwon be added, the amount of land tax from the Yongnam-ro zone might have been more than 40 percent of the total land tax of the country (Figs. 58 and 59).

The local products tax and tribute levied by the local governments from the special local products, were collected at central government offices. The local products were collected every February from each county. Textiles, stationery goods, medicinal goods, metals, weapons, food stuffs, and iron were the most valuable items. These goods were the source of the royal household revenue as well as important foreign trade items. There were about 350 different local products from the Yongnam-ro zone representing 30 percent of the tax on local products of the country (Sejong Silok Chiriji, Vol. 148, Kyonggi-do, vol. 149, Chungchong-do, and vol. 150. Kyongsang-do).

The tribute was a monthly contribution from provincial governors and army and navy commanders to the royal court. The main items were fresh fish and fruit. Such perishables
Fig. 58. Distribution of land-tax collected from rice paddy cultivation, 18th century.
Fig. 59. Distribution of land-tax collected from dry field (soybean) cultivation, 18th century.
to be transported speedily were handled by the cöürïer transport system along with the local products. Footrunners in relays carried these goods to their destination (Ban'gye Surok, Jonje-hurok Sang).

The decrease in the amount of land tax after the Japanese invasion resulted in financial difficulties for the government. As a result, the government decided to apply a new tax levying system. After the war, government officials could not collect the same local products as before the Japanese and Manchu invasions: There was a striking lack of local craftsmen, many of them having been captured by the Japanese, and many raw materials were exhausted. In many cases, the local farmers had to purchase the items requested by the officials. Finally, the government unified all taxes in kind into one tax known as the Taedong-pop (Law of Great Correspondence). The farmers could give rice, cloth, or money instead of local products.

The Law of Great Correspondence had considerable impact. It lightened the burden of the peasantry, and it increased the government revenue. The government collected 216,200 sok (1,124,240 bushels) of rice. If this tax paid in kind with rice, 30 percent came from Cholla-do, 29 percent from Kyonggi-do, and 5 percent from Hwanghae-do. The Yongnam-ro zone paid about 39 percent of Korea's in kind tax (Yoji Doso vol. I and II). Forty-nine counties of Kyongsang-do, 23 counties of Cholla-do, 20 counties of
Chungchong-do, and 20 counties of Kangwon-do in the remote mountain areas paid cotton cloth or ramie cloth or coin money instead of rice (Fig. 60).

The use of coin money and the steady rise of markets and local trade fairs in the seventeenth century can also be attributed mostly to the in kind tax system. The abolition of the local products tax system promoted a greater influx of commercial goods into the central and local markets. Tax payment in cotton and ramie cloth promoted the cultivation of cotton and ramie, and the growth of textile industries. Andong, Ulsan, Tongnae, Miryang, and Ham'an were well-known ramie manufacturing areas. Uisong, Kunwi, Ulsan, Yean, Uryong, Ham'an, Sangju, Andong, Miryang, Ansong, Yoji, and Yong'in were cotton cloth and cotton yarn manufacturing centers (Donguk Yoji Sungham, vol. 6-10, 14, 21-35; Chosen Sotokufu: 1935, pp. 153-170).

The local agricultural administrative units known as "kun" differed in size and governor's rank. The Governor's rank was often related to the size of his province's taxable agricultural lands and its population. The Prefectural governor (Puyon) was the highest rank of 2b administrator. His rank was equivalent to that of a provincial governor. Hence the provincial governor (kamsa) often held both offices concurrently. The more important local magistrates (dae-dohobusa and moksa) with a rank of 3a, administered large populations. Lower level

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Fig. 60. The tax collection system of Korea, 18th century.
magistrates (the pusa [3b], the kunsu [4b], the hyŏn-ryŏng [5b], and the hyŏn-gam [6b] administered both smaller areas and some large ones not considered important.

The kun were agricultural administrative units. The kun capitals were originally established for administration and tax collection, but they had numerous functions. They were administrative centers often located at the geographic center of the kun. They also functioned as cultural and educational centers: The Confucian academy (sowon) and shrine and other schools, plus additional religious institutions and recreational facilities could also be found in these capitals. They were also the central trade markets. It took about one day's journey to travel to and from the border of a kun and its central market. The distance between kun capitals was generally between 30 and 40 kilometers.

The local administrator's rank often influenced the size of a county seat, the form and pattern of the city, and its functions. Higher level cities such as the kam-yong (provincial capital), the mok, and daedoho-bu had fortifications and well-planned street patterns. Their hinterlands were generally several times larger than that of lower level counties. The governors of these upper level counties were not only administrators but regional commanders as well. Hence, a large number of government officials, troops, and other specialists resided in these county seats.
In the early Yi Dynasty, there were three 2b level cities along the Yongnam-ro zone: Chungju and Sangju which were provincial capitals, and Kyongju which was a prefectural. Yoju, Chongju, Andong, Songju, Changwon, and Chinju were 3a level cities. There were seventeen 3b level cities, seventeen 4b level cities, seven 5b level cities, and thirty-nine 6b level cities. Some of these cities were fortified.

The Japanese and Manchu invasions brought about considerable changes in the administrative system of the Yi Dynasty, particularly in the Yongnam-ro zone where even the urban network was changed. The most important factor was the transfer of the provincial capitals of Chungchong-do and Kyongsang-do which caused a substantial decrease in the traffic flow on the northern section of the Yongnam-ro. Another direct result of these invasions was the establishment of the four yusu-bu (permanent military bases to guard Seoul) in the seventeenth century. Two of them, Kwangju and Suwon, were governed by central government officials with a rank of 2b or up. Finally, defense readiness called for the construction of garrisoning mountain castles, such as the Namhan-sansong, Choryong-Sansong (Saejae Pass), Kasan-song, and Kumjong-Sansong. The Namhan-Sansong was reconstructed upon the site of an ancient structure, but others were new.

These historic events caused major changes in the administrative structure. The administrators of Chungju
and Sangju, formerly with a rank of 2b were degraded to a rank of 3a, while the administrator of Taegu, the new provincial capital of Kyongsang-do was promoted from 3b to 2a as were the cities of Kwangju and Suwon. After the construction of the Kasan-song castle (Fig. 61), Chilgok county was established in 1640 and governed by a military general with a rank of 3b.

In the fifteenth century, 10 out of the 22 largest counties of the country (except Pyong'an-do and Hamgil-do which were exempted from land tax) holding over 10,000 kyol of cultivated lands, were located in the Yongnam-ro zone: They were Kwangju, Suwon, Chungju, Chongju, Sangju, Songju, Andong, Miryang, Kyongju, and Chinju. Three out of ten second largest counties with 7,500 to 10,000 kyol were also located in this zone (Table 24). It also included 11 large counties: Yoju, Ansong, Yong'in, Juksan, Koesan, Jinchon, Ulsan, Taegu, Yechon, Yongchon, and Uisong.

The reorganization of the administrative systems after the seventeenth century changed the sizes of counties. The size of the agricultural land of Taegu was doubled by the transfer of the provincial capital. In contrast, Kwangju lost large lands in spite of its promotion at the administrative level.

In the eighteenth century, nine of the thirteen largest counties, seven of the sixteen second largest counties, and eleven of the thirty large counties of the country were located in the Yongnam-ro zone. In other
Fig. 61. Kasan Castle. One of the largest mountain castles in the Yongnam-rozone in the 18th century. Old map (above) was drawn in the 18th century.
Table 24

Size of Cultivated Lands by Counties in the Yongnam-Ro

<table>
<thead>
<tr>
<th>Size of Cultivated Land</th>
<th>Fifteenth Century</th>
<th>Eighteenth Century</th>
</tr>
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<tbody>
<tr>
<td>Over 10,000 kyol</td>
<td>Kwangju, Suwon,</td>
<td>Suwon, Chungju,</td>
</tr>
<tr>
<td></td>
<td>Chungju, Chongju,</td>
<td>Sangju, Taegu,</td>
</tr>
<tr>
<td></td>
<td>Sangju, Songju,</td>
<td>Miryang, Kyongju,</td>
</tr>
<tr>
<td></td>
<td>Andong, Miryang,</td>
<td>Andong, Chinju</td>
</tr>
<tr>
<td></td>
<td>Miryang, Chinju</td>
<td></td>
</tr>
<tr>
<td>7,500-10,000 kyol</td>
<td>Ichon, Sonsan, Kimhae</td>
<td>Kwangju, Chongju,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sonsan, Uisong,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uiryong, Yongchon,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kimhae</td>
</tr>
<tr>
<td>5,000-7,500 kyol</td>
<td>Yong'in, Juksan,</td>
<td>Yong'in, Yoju,</td>
</tr>
<tr>
<td></td>
<td>Ansong, Yoju, Koesan,</td>
<td>Jinchon, Yechon,</td>
</tr>
<tr>
<td></td>
<td>Jinchon, Uisong,</td>
<td>Chongdo, Changwon,</td>
</tr>
<tr>
<td></td>
<td>Yechon, Taegu, Ulsan</td>
<td>Haman, Kosong,</td>
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<td></td>
<td></td>
<td>Changnyong, Ulsan,</td>
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<td></td>
<td></td>
<td>Hadong</td>
</tr>
<tr>
<td>2,500-5,000 kyol</td>
<td>Umjuk and 25</td>
<td>Umjuk and 37</td>
</tr>
<tr>
<td></td>
<td>counties</td>
<td>counties</td>
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<tr>
<td>Less than 2,500 kyol</td>
<td>Yangji and 33</td>
<td>Yangji and 29</td>
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<td></td>
<td>counties</td>
<td>counties</td>
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Sources: 1. *Sejong Silok Chiriji*
words, about 46 percent of the large county seats occupied sites along the Yongnam-ro. But for a few exceptions, the size of the population of the counties related to the size of their agricultural lands (Table 25).

In the eighteenth century, among the ten large counties with more than 50,000 people, Kwangju, Suwon, Taegu, and Kyongju were administered by 2a or 2b rank officials, and Chungju, Sangju, Songju, Miryang, Chinju and Andong by 3a or 3b officials. Although the administrator's rank influenced the population size of a county, there were a few exceptions. For instance, even after the transfer of the provincial capital to Kongju, Chungju (about 100,000) still had the largest population of southern Korea. Sangju (71,000) also had more people than Taegu (61,500), the new provincial capital of Kyongsang-do. Yoju, Chongju, jincho, Sonsan, Kimhae, Chongdo, Ulsan, Yongchon, Tongnae, Kosong, Uison, Uiryong, and Changryong were also large counties.

Counties were named after the administrative towns that served as their county seats. These towns were the power bases of local nobles and were fed by their agricultural hinterlands. As mentioned earlier, the size of agricultural lands influenced the population size of counties. Large counties generally had large administrative towns. These administrative towns were, however, often economic parasites, mostly bustling service cities generating no trade activity. They served as provincial or county capitals, seats for garrison troops,
<table>
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<tr>
<th>Population of the Counties in the Yongnam-ro Zone (1800)</th>
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<tbody>
<tr>
<td><strong>POPULATION</strong></td>
</tr>
<tr>
<td>Over 50,000</td>
</tr>
<tr>
<td>25,000-50,000</td>
</tr>
<tr>
<td>12,500-25,000</td>
</tr>
<tr>
<td>6,250-12,500</td>
</tr>
<tr>
<td>Below 6,250</td>
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</tbody>
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**Sources:**
1. *Hogu Chong-So*
2. *Dae Dong Chiji*, vol. 4,6,10.
and résidences for governors and the omnipresent hordes of officials with their serving men. When the capital was not the most important trade-base as well, it was possible to find a clear separation between administrative and commercial towns as was the case in many counties. In Kwangju County, Namhan-sansong was the administrative center and Songpa the commercial city, Yong'in and Kimryang in Yong'in County, Umjuk and Changhowon in Umjuk County, Juchon or Muguk and Juksan in Juksan County, Kumchon or Mokgye and Chungju in Chungju County, Jomchon and Mun'gyong in Mun'gyong County, Haepyang and Sonsan in Sonsan County, Kasan-son and Goypong in Chilgok County, Janggori and Chongdo County, and Tongnae and Pusan-po in Tongnae County, respectively held similar statuses.

In some instances, however, administrative towns that occupied the focal points of main highways and secondary roads developed as centers of manufacturing and commerce. The dependence of these towns upon long distance communication for their sustenance exemplifies the relationship of communication network and urban development along the Yongnam-ro and must be examined in more detail.

Networks form when different points are linked together into a structure. First, all traffic flow should originate within the boundaries, second, network density should have the propensity to generate traffic; and third, all flows should converge on the base point (Langton: 1972, p. 138). The base point of the urban networks of
Korea in the Yi Dynasty was Seoul, and the Yongnam-ro was one of the important flows focusing on Seoul.

In terms of path geometry (Dicks: 1973, p. 6), the Yongnam-ro formed a dendritic structure, the hierarchy of paths focusing on several centers. From Pusan, terminus of the Yongnam-ro to Seoul, we can give the order of paths as follows: Tongnae was the first focus on the Yongnam-ro. The route from Tongnae to Miryang formed the second order path. Two second order routes and a couple of other tracks centered on Miryang which was the focus of the Naktong Delta. Taegu, located in the central part of Kyongsang-do was the meeting-point of two third order routes and other first or second paths. All the routes into the Upper Naktong Basin converged more or less on Sangju; the main trunks of the Yongnam-ro, the roads from Chinju and from Kyongju belonged to the fourth order and four other lower routes focused on Sangju. The Yongnam-ro formed a fifth order road in the section of Sangju and Chungju, and a sixth order one after Chungju upon which another fifth level road from the Juk-ryong Pass converged. The section between Juksan and Seoul was one of the busiest roads in the Yi Dynasty and was classified as a daero (great road).

The urban network of the Yongnam-ro zone did not arise as a response to internal conditions. At the beginning, external conditions as political and economic factors influenced the development of the network system. In the early Koryo Dynasty, communication channels began to extend
from Songdo to the Yongnam Region through Chungju. Kyongju could have been the terminus of the route, but the alignment of the Yongnam-ro did not materialize until the establishment of the Yi Dynasty. The Yi government chose Pusan as the terminus and the areas between Seoul and Pusan began to be connected with a chain of linkages.

The communication chain of the Yongnam-ro can be classified into several categories: the capital city, the provincial capital, the gateways, nodal points, and primary links. Seoul was the decision-making, cultural and economical center from which all traffic and communication flow originated. Chungju and Sangju, provincial capitals from 1392 to the 1590s, began to develop as forward bases of operation in ancient times and remained regional centers for two hundred years. Even after the transfer of the provincial government offices from these cities, they prospered as the gateways of the upper Han and Naktong Basins. After the 1590s Taegu became the regional center and natural focus of the Yongnam region. Mun'gyong, Chongdo, and Yangsan developed as minor gateway communities. Songpa, Kimryang, Juksan, Mokgye, Muguk, Yong'an, Jomchon, Naktong, Haepyong, Kyongsan, Miryang, and Tongnae were located on major modal points. They could, therefore, be commercial centers. Maljukgori, Pangyo, Changho-won, Jomchon, Gopyong, and Mulgum became primary linkages and well-known market towns.

The important towns of the Yongnam-ro zone depended on
long distance carrying links, particularly the land carrier networks, for their development. Although inland water routes were useful, the land communication system was generally the best means of conveying information and transporting commodities and people. In most higher-level central places, the opportunity existed to pursue an education or to engage in the bureaucratic service or in trade.

The analysis of the urban network in the Yongnam-ro zone clearly shows the influence of the roads on the development of the cities. Although some administrative towns were located apart from the main highway, most important cities belonged to one of the categories: gateway, nodal point, or primary linkage. The network density was generally higher order cities (the pu, dae-dohobu, and mok), Kwangju, Yoju, and Changwon did not develop by the main highway. Yoju and Changwon were the foci of secondary roads, and Kwangju was in the rugged Numhan-san castle.

The development of Suwon, Chungju, Sangju, Songju, Taegu, Chinju, Andong, and Kyongju, however, clearly related to their locations at the foci of a main highway and of several secondary or tertiary roads. Chungju, Sangju, and Taegu had the additional advantage of occupying navigable river routes.

The pattern of the urban network also influenced lower level towns. Among the 36 cities, Chongpung, Sonsan,
Indōng, Chilgok, Sunhung, Chōngsong, Yōnghae, Hamyang, and Hadong were connected with minor roads. Chōngpung, Chōngsong, Yōnghae and Hamyang were located in remote mountain areas and Chilgok developed in a mountain fortress. As a result of their disadvantageous location away from main highways, these towns had small populations in spite of their high administrative rank, and their commercial activities were extremely limited. In contrast, Ichon, Juksan, Tongnae, Miryang and Kochang, located on the foci of main highways, prospered as both commercial and administrative towns.

Among the lower level cities, including the kun and the hyon, Gwachon, Ansong, Jinchon, Yongju, Kimchon, Chongdo, Yongchon and Uisong became well-known administrative and commercial centers. Ansong, Jinchon, Kimchon, and Yongchon were leading market centers. Uisong and Yongchon, with a population of nearly 6,000 each exceeded that of higher level cities such as Chōngpung and Yoju.

In the analysis of the urban network of administrative towns, at least five higher level towns and about ten lower level towns stood well apart from the main highway or secondary roads. Such towns as Kwangju, Chōngpung, Chilgok, Chōngsong, and Sunhung, located in isolated mountain basins or fortifications developed unusually as higher order administrative centers without any industries. Although Kwangju and Chilgok were important military bases in the
Yongnam-ro zone, these towns could not support large population and could not really develop into major modern cities. They declined, and in the early twentieth century, Kwangju, Chongpung, and Sunhung had become no more than small villages, while Chilgok, in the Kasan Castle, had become completely deserted and ruined.

The regional defense system was completed in 1455. Each province had two large regional army headquarters and two navy headquarters: the Jwa-pyongyong (left army barracks) and the Wu-pyongyong (right army barracks), and the Jwa-suyong (left navy barracks) and the Wu-suyong (right navy barracks). The army commander's rank was 2b; the navy commander's, 3a.

The garrison towns in the Yongnam-ro zone were classified into three groups according to the commanders' ranks which were in turn related to the size of their garrison towns. The largest garrison towns were the Pyongyong (regional headquarters) and the Suyong. Second order garrisons were called kojin (large district military bases) and were commanded by 3a or 3b army officers and by 3b navy officers. The third order garrisons included many independent army and navy bases under the command of 4a to 6b officers (Fig. 62).

The size of each garrison lands and its number of troops were related to the hierarchy of garrison towns. The government allotted kunja-jon (land for war fund) and dun-jon (garrison farm). Large army barracks received
Fig. 62. Classification of garrison towns in Korea, 18th century.
about 20 hectares; second order garrisons, 12.96 hectares; and tertiary order garrisons, 9.72 hectares. Navy bases received more lands: the largest bases held 226.8 hectares, the secondary bases 116.64 hectares, and the tertiary bases 77.76 hectares (Ban'gye Surok, vol. 1 Jonje Sang, Jolmok). The army garrisons' commandants were entitled to collect taxes from neighboring farmers.

There is no official record of the exact population of garrison town. Between 300 and 500 troops, some with their families, were stationed in major garrisons (The Military Academy of Korea: 1968 p. 118) and there were also merchants and manufacturers. Therefore, the population of such garrison towns could have been several thousand during peace time and reached up to a hundred thousand during war when garrisons served as refuges for the neighboring population.

In the fifteenth century, the major army garrison towns in the Yongnam-ro zone were Chungju, Sangju, Ulsan, and Chang-won, and the major navy garrisons Pusan and Koje. Kwangju, Suwon, Chongju, Kyongju, Taegu, Andong, Chinju, and Kimhae were secondary army garrisons and Ungchon was a secondary order navy base. The tertiary order army bases generally coincided with county seats, but the navy bases occupied independent garrisons such as Modupo, Haeunpo, Poipo and Dadaepo near Pusan, Kampo, Hunghae, Yongdok, Ulsan, Namhae, the Koje area, Kosong, and Ungchon.

In the eighteenth century, the garrison towns in the
Yongnam-ro zone were concentrated in the Seoul metropolitan area, the Chungju area, the Saejae Pass, and the areas of Sangju, Taegu and the southern coast. The Namhasan-song, Suwon, Kangwha, and Kaesong, were the four important military bases safeguarding Seoul. During the Manchu invasion in 1636, King Injo took refuge in the Namhansan-song while the court fled to Kangwha. Large numbers of troops guarded this largest garrison in the Yongnam-ro zone: there were 2,850 regular troops, 356 monk troops, and a dozen smiths making or repairing weapons. The commander's rank was 2a, the vice-commander's 2b and that of seven next highest officials, 3a (Yi Sang-baek: 1977, p. 148). Juksan at the focal point of the Yongnam-ro and of the road from Chongju became a district headquarters during the reign of King Injo (1623-49) and controlled such counties as Juksan, Yoju, Umjuk, Ansong, Yangsong, and Yangji (Sinjung Dongguk Yoji Sungham, vol. 10, Juksan-hyon, Sinjung Gojok).

After the Japanese invasion, Chongju became the regional army headquarters of Chungchong-do. There were 550 regular troops under the command of the Chungchong Pyongsan, 210 blacksmiths and 9 doctors (Yoji Doso, Chungchong-do, Pyongyong, Kwanjik). This garrison was fortified and attached to a mountain castle, Sangdangsan-song. Chungju, a district army base, was protected by several mountain fortresses.

In 1700, the area of the Saejae Pass was fortified in
three positions. The Juhul-gwan in that pass was the main barrier gate on the Yongnam-ro and was guarded by a couple of hundred troops. Large amounts of emergency provisions were collected from neighboring counties of Sangju, Mun'gyong, Hamchang, Yonggung, and Yechon. The Komosan-song on the bypass of the Kwan'gap-chon road belonged to the Juhul-gwan. According to Japanese records, Konishi, a Japanese general who led the main unit of invading troops in 1592, was afraid of being ambushed by Korean troops in that area, but they passed through unhindered (Lee Hyongsok: 1971, p. 265).

Sangju was a district headquarters. Several fortifications, such as Namsan-kosong, Pyongpung-sansong, Songsan-song, Chungmosan-song and Kumdol-song belonged to the Sangju garrison, but none of them developed as garrison towns. After the transfer of the provincial capital Taegu from Sangju, several fortifications were built. Chilgok County was established in 1640 as a northern barrier of Taegu, and Kasan castle was constructed. It consisted of three parts, the Naesong (inner castle), the Jungsong (central castle), and the Oesong (inner castle). The inner castle was used as a residential and market area, the Jungsong housed the administrative quarters, and the Oesong was for the garrison. In the late eighteenth century, 768 regular troops were stationed in this garrison (Yoji Doso, vol. II Kyongsang-do, Chilgok-dohobu, Kunbyong). The Chonsaengsan-song in Indong County was built in 1601, the
Kum'osan-song in Sonsan County was built in the seventeenth century. The Dalsong in Taegu County and the Kongsan-song in Chilgok County were part of the belt of strongholds protecting Taegu. Kum'o san-song (970 meters) was the only fortress developed as tertiary order garrison on top of a high mountain.

Pusan, the terminus of the Yongnam-ro was in the eighteenth century a military metropolitan area consisting of an army and navy barrack complex. The administrative center of Tongnae was protected by several garrisons.

Pusan-jin was the second order army base, and Kumjong san-song (1703) the tertiary order garrison. Suyong, the primary novel was guarded by several smaller naval bases.

Almost all garrison towns were fortified. Some of them were also administrative centers in the basin areas. Square or circular city walls were sometimes no more than a symbol of authority built or repaired for defense preparedness after the Japanese invasion. Chungju, Sangju, Sonsan, Yongchon, Kyongsan, Chongdo, Miryang, Yangsan, and Tongnae along the Yongnam-ro were fortified before the Japanese invasion. The city-walls of Suwon (1790s) and Taegu (1736) were built in the eighteenth century (Jungbo Munhon Bigo, vol. 26, Yojigo, 14, Kwanbang 2, Songwak 2).

Most of the administrative towns with or without city walls were protected by a couple of fortresses in their vicinity with troops assigned to them. Most of them
well-trained units did exist to guard the northern frontier, but a full-scale field force did not exist. At the onset of the war, they offered practically no resistance at Pusan, Tongnae, Sangju, and Chungju.

Three great roads led to Seoul from Pusan. It was the central one of these that the main unit of the Japanese troops led by Konishi followed after the fall of Pusan (Fig. 63). He crossed the Jakwon Pass, then pushed on through Miryang, Taegu and Indong, forded the Naktong River and entered Sangju (Murdoch, J: 1925, vol. II, p. 321). At Mun'gyong, Konishi met the Kato groops, which had taken the eastern route. In front of them lay the Kwan'gap-chon and Saejae Passes, where even a handful of resolute men could have defeated the enemy. Contrary to their expectations, the Japanese found these positions unheld. They defeated 5,000 Korean cavalrymen in Chungju, captured Seoul and arrived in Pyongyang. After reorganizing their troops, Korean regular and volunteer soldiers pushed the Japanese back to southern Korea. The Japanese troops were utterly beaten in many garrison engagements.

In military communication, speed and security of communication were not in question because the communication system was in the hands of military forces. The development of bureaucracy in the late Silla Dynasty led to the transfer of the control of communication from the military to civilian officials. Military communication began to depend upon the postal system, supplemented by the
Fig. 63. Relationship of Yongnam-ro to military messenger routes, 18th century.
bongsu (beacon fire signal system) especially in time of emergency.

Two of the main reasons for the sapping of the Korean troops' morale were the paralysis of the communication system, particularly of the beacon fire system and the insufficient number of fortified positions. In ancient Silla and Koryo, castles or fortresses in isolated mountain areas could communicate through the bongsu. During the long period of peace between 1392 and 1592, the government officials lost their vigilance and neglected the defense of the country, including the beacon fire system. The invasion and progress of the Japanese troops were not properly reported.

The establishment of the pabal (express military communication system) meant not only the improvement of the communication system but better defense as well. After the war, new fortifications were constructed and old castles were restored. The military express route connected them between Seoul and Pusan. Patterned after the military express of Chinese troops dispatched to Korea, the pabal started in 1600 (Sonjo Silok, vol. 8, 30, 5, Kimi). Several soldiers were assigned to each station and given tax-free grants (Sonjo Silok, vol. 88, 30, 5. Kimi). Several soldiers were assigned to each station and given tax-free grants (Sonjo Silok, vol. 133, 34, 1. Kap'in). Among the four pabal routes, Seoul to Uiju, to Hoeryong, to Kang-jin and to Pusan — only the first one was a horse
post road, the others were runner post roads. This was probably due to the insufficient number of horses at the time.

In the Yongnam-rog zone, 34 military messenger stations were established 12 kilometer apart, including 9 in Kyonggi-do, 6 in Chungchong-do, and 19 in Kyongsang-do. They were, from Seoul to Pusan:


Although the point of origin and the terminus of this pabal route were the same as those of the Yongnam-ro, its itinerary differed somewhat from that of the Yongnam-ro in various parts. The section between Seoul and Chungju paralleled the Yongnam-ro, then joined it at Chungju. In some areas such as the Saejae Pass, Indong and the Paljoryong Pass, the pabal routes followed a straight course rather than the winding path of the Yongnam-ro. Two pabal routes, from Pusan and from Tongyong (Admiralty port) converged on Taegu.

In the eighteenth century, the government strengthened the pabal system. Each station had 30 to 45 soldiers under one or two officers. Stations near such strategic points as the Namhansan-song, Kasan-song, and the Paljoryong Pass
had the maximum number of soldiers and officers. Pabal stations were only small military camps, but the pabal route did contribute to the development of garrison towns in the Yongnam-ro zone.

An official record gives the average speed of messengers on pabal routes. According to an unofficial Japanese report, foot-runners on relay covered 1610 ri (about 644 kilometers) in two days (Yamachi Joichi: 1909, p. 169). A fair estimate of that speed would probably be about 320 kilometers a day or 13 kilometers per hour. By comparison, the horse relay in Tang China covered 290 kilometers and the foot-runner relay 160 kilometers a day (Elvin: 1973, p. 133). In the Ching Dynasty, the average speed of the horse-post was 192 kilometers a day, with a maximum of 416 kilometers a day (Needham: 1965, vol. 4, part II, pp. 36-7).

The military express influenced the fate of the Yongnam-ro particularly along the section between Seoul and Chungju. In the eighteenth century, the traffic flow from the northern Yongnam region to Seoul through Chungju began to decrease after the closing of the Yangjae station and the construction of Suwon Castle. Officials travelling between Seoul and the western Yongnam region began to use the route of Suwon-Jinchon-Chongju and the Chupung-ryong Pass. The government no longer properly maintained the less frequently used portion between Seoul and Chungju. The improved pabal route attracted more travellers.
could not develop into large settlements because they were only active in case of emergency.

Real garrisons developed at strategic points and in the mountain basins. The Namhansan-song, Chongju Pyongyong and Sandang-sansong, Juhul-gwan, Kasan-song, Kum'osan-song, Ulsan, Changwon, Pusan, Kosong, Tongyong, and Ungchon were developed as major garrison towns in the Yongnam-ro zone. Many mountain garrisons could not develop into modern cities because of their locations on rugged landforms, their lack of economic support areas and their isolation from the communication network. These towns were supported through the taxes levied by the garrisons upon the neighboring farmers.

The Namhansan-song, Sangdansan-song, Kum'osan-song and Juhul-gwan became small tourist villages. The Sangdangsan-song, Kasan-song, and Kumjongsan-song are now uninhabited. Chongju Pyongyong was annexed to the Chongju metropolitan area, Ulsan Pyongyong to Ulsan, and Pusan-jin and Suyong became the business district of the Pusan metropolitan area. Other former navy garrisons such as Kosong, Tongyong, Okpo, and Ungchon became industrial towns.

What could have led Korea to choose mountain ridges or hilltops as sites for military defense, a rather unusual case among East Asian nations. Neither the Chinese nor the Japanese were familiar with this type of fortifications. It may have reflected specific concepts about tactics of warfare: Korean were originally semi nomadic hunters, and
they were well-known shooters on horseback. They were true to their reputation of splendid garrison fighters and guerrilla warriors. Griffis seems to have found a logical explanation for the existence of mountain garrisons:

We see a striking trait of the Korean military character which has been noticed from the era of Sui and Tang China down to Admiral Rogers. Chinese, Kitan, Japanese, French, and Americans have experienced the fact and marvelled threat. It is that the Koreans are poor soldiers in the open field and exhibit slight proof of personal valor. They cannot face a dashing foe nor endure stubborn fighting. But put the same men behind walls, bring them to bay, and the timid stag amazes the hounds. Their whole nature seems reinforced. They are more than brave...

The Japanese of 1592 looked on the Korean in the field as a kitten, but in the castle as a tiger. The French in 1866, never found a force that could face rifles, though behind walls the same men were invincible. The American handful of tars kept at harmless distance thousands of black heads in the open, but inside the fort they met giants in bravery. No more noble for ever met American still.

The ancient policy of the Koreans, by which they over and over again foiled their mighty foe and finally secured their independence, was to shut themselves up in their well-provisioned cities and castles, and not only beat off, but starve away their foes. In their state of feudalism, when cities and strategic towns of importance were well-fortified, this was easily accomplished. The ramparts gave them shelter, and their personal valor secured the rest (Grifis: 1905, pp. 42-43).

In May, 1592, 195,000 Japanese troops in ten contingents invaded Korea. The Japanese warriors were well-trained during the Warring State period, and they were equipped with European fire-arms. The Korean military forces were weak at the time of the Japanese invasion. The farmer-soldiers had little real military training. Some
Even today, many local elders remember travelling the pabal route on foot before the modernization of transportation, but many of them have recollection of the Yongnam-ro.

The establishment of the pabal system affected directly the development of garrison towns and indirectly the growth of commercial towns such as Kahung, Changhowon, Ga'nam, Ichon, Gonjiam, Kyong'an, and Sinjang. This route was revitalized as a modern highway.

During the Yong-Chong Era, Korea reached the peak of her premodern urban development, although that peak was delayed because of the Japanese and Manchu invasions. In the eighteenth century, there were about 1,000 central places, including of about 330 administrative towns, about 100 garrison towns, and 570 market towns (Baek Rin: 1977, p. 33-60; Mun Jong-chang: 1922, pp. 17-18; Doro Go, Vol. II, Jang si).

Eighteenth century Korean cities can be classified into six levels, mostly based on their administrator's rank, their function, and the density of the communication network focusing upon them (Fig. 6\(^4\)).

**First level.** Only one city, Seoul, belonged to this category. More than eight overland routes and the Han River Route focused on the royal capital of the Yi Dynasty. It was the leading administrative, cultural, and commercial center.

**Second level cities.** The Administrator's rank was generally 2b. They were former capitals or subcapitals.
Fig. 64. Urban hierarchy of Yi Korea, 18th century.

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They competed with Seoul administratively, culturally, and commercially and also had a high density communication network. Most representative of this level were Pyongyang and Songdo. Over five roads focused upon them.

Third level cities. They were provincial or former provincial capitals and their Administrator's rank was 3a and up. They functioned as important administrative, cultural, and commercial centers, but could not compete with second level cities or with Seoul. At least five main roads focused on each of them. Chungju, Sangju, Taegu, and Kyongju belonged to this category.

Fourth level cities. A few of these cities, such as Kwangju and Suwon were promoted to 2a because they functioned as the main protective garrisons for Seoul, but for the majority, the Administrator's rank was 3b. Such was the case of Andong, Tongnae, and Mirynang. They functioned as prefectural centers or garrisons. Three to five roads focused on each of them.

Fifth level cities. Their Administrator's rank was 4b or 5b. Some of them, such as Yongin, Juksan and Yangsan, were mostly administrative towns. Chilgok, Tongyong, and Pusan were garrison towns. Songpa, Mokgye, Ansong, and Mason-po were large commercial centers. Their communication network was less extensive than that of level 4 cities.

Sixth level cities. With an Administrator's rank of 6b, these cities fell into four categories, small garrisons, such as Juhul-gwan, Kumosan-song and Kosong; market
centers, such as Kimryang, Changhowon, Jinduri, and Haepyong; post stations, such as Yugok and Hwangsan; and administrative centers, such as Yangji and Mun'gyŏng.

In most cases the population of Korean cities decreased proportionally with their administrator's rank. However, there was a conspicuous absence of cities with populations between 50,000 and 200,000. Hence, if Pyongyang and Songdo did compete with Seoul in their functions, on the basis of their population, they were much smaller than they should have been. This disparity of population between Seoul and these cities clearly indicate excessive centralization.

In spite of its great centralization, eighteenth century Korea was not truly urbanized, unlike China and Japan during the same period. These two countries already had cities with populations of one million such as Peking and Tokyo, and several cities with half-a-million population, although these figures may be somewhat exaggerated (Rozman: 1973, p. 101). Sjoberg estimates the population of the Tokyo-Yokohama metropolitan area to have been about 500,000 (Sjoberg: 1968, p. 84). During that same period Seoul, however, large it was compared to other Korean cities, had a population of only 200,000.

The importance of the Yongnam-ro zone in their overall population picture is indicated by the fact that 9 of the largest cities of the country, and 30 of the medium-sized ones were located in that zone. In late eighteenth century
Korea, about 8 percent of the population lives in cities of up to 5,000 people, but this percentage climbs up to 12 percent for the Yongnamro-zone.

Many preindustrial societies of the world were not very urbanized. The normal range of populations of preindustrial cities was from 5,000 to 10,000 (Sjoberg: 1968, p. 83). But the cases of China and Japan in the eighteenth century and of Korea in earlier periods show that world-wide generalizations about population patterns can be dangerous. Although there is disagreement about an exact figure, Kyongju, during the Silla Period, may have had a population of over half-a-million, but it dwindled to between 5,000 and 10,000 in the eighteenth century. Pyongyang, as capital of Koguryo, and Songdo, as that of Koryo, were also very large, but also dwindled during the Yi Dynasty, this time to between 10,000 and 40,000.

In essence, the changes in the specific hierarchy of cities, in the densities of their population, and in their communication network reflect the ideological changes in leadership and are not necessarily consistent with the model and in no way predictive. In the case of the Yi Dynasty, these changes reflected a highly bureaucratic system and its late effort to redress their earlier neglect of defensive measures, which caused heavy damages in the country, as well as their late awakening to the importance of commerce.
SUMMARY AND DISCUSSION

The impact of the Yongnam-ro on Korean cultural geography was considerable. It is reflected in Korean history, culture, social structure, industries, and urbanization. Many forces gained focus and influence along the road.

First, the Yongnam-ro was a main artery between the national core of Korea and the Yongnam region which was unified and which carried the thousand year tradition of Silla.

Second, the Yongnam-ro was the original power base of Korean nobles who controlled the politics, and the economy, as well as religious and cultural matters.

Third, the Yongnam people have been "political climbers" ever since Silla. Large number of the elite launched into politics and secured positions in the Royal Court as Court officials, local governors, or foreign envoys.

Fourth, the people in the Yongnam-ro zone had more opportunities than others to contact foreign cultures, both directly and indirectly. The cultural contact between Korean and Japanese merchants took place in Pusan, and Korean envoys from the Yongnam region during their stay in Peking, came in contact with Chinese. Government officials sent to various regions of Korea and abroad brought back new ideas, once they retired from their offices.

The influence of the Yongnam region over the national
core began after the unification of Korea by Silla. Because this Yongnam elite belonged to the very powerful and well-educated noble class of Silla, it kept on its dominance through the Koryo and Yi Dynasties. The cultural pride of the Yongnam elite made them essentially chauvinist and conservative, especially about preserving their Confucian tradition.

Despite the contacts between the Yongnam-ro nobles and people of their regions, the cultural exchange that took place was not fully reciprocal. The Yongnam officials willingly received ideas that enlarged their Confucian knowledge and that advanced practical technological improvements consonant with their philosophy, but they would not readily adopt new religious ideas or concepts that could influence them in matters such as language or social structure; they considered theirs to be the best. This explains their resistance to the spread of Catholicism. It also explains why standard Korean language did not penetrate regions south of the Sobaek Range. In contrast to this extremely selective adoption of new ideas, they contributed vastly to changes in other areas. The Yongnam dialect, for example, greatly influenced standard Korean language.

During the seventeenth and eighteenth centuries, the Yongnam-ro made great contributions to the development of Korean economy. The Yongnam region was known as the innovation center of agricultural technology and the
diffusion center of new crops. Double-cropping, irrigation, new fertilizing techniques, and new crops such as cotton, tobacco, hot peppers, squash, and ginseng all diffused to central and northern Korea along the Yongnam-ro. Ginseng was first domesticated in the Yongnam region. Other crops were introduced to Korea from Japan and subsequently adopted after a period of experimentation.

Technological evolution and the introduction of new crops influenced not only the increase of food production, but the development of agronomics, including the cultivation of cash-crops. It also led to a population increase and to the development of manufacturing which was in primitive conditions in the early Yi Dynasty.

The removal of the tax on local products and the repealing of the law against periodic markets promoted manufacturing and trade. Farmers could pay taxes with rice, cotton, hemp, or coin money, rather than with local products. Local manufactures based on local raw materials began to develop as did market towns. The Yongnam-ro zone lead the country in the production of hemp, cotton, mulberry, paper mulberry, tobacco, iron ores, and kaolin. It became the largest manufacturing center in textiles, ceramics, and ironware.

This technological and industrial evolution caused a chain reaction in the development of trade and urbanization. Local service centers began to emerge as natural linkages. Some of them became regional centers
connected with larger ones by overland routes. The movement of cargos and people intensified the network density of the Yongnam-ro zone. The establishment of fortifications after the Japanese invasion also promoted the development of the trade network, although indirectly, because merchants were attracted to large garrisons and because garrison troops secured the safety of commercial routes.

In premodern Korean society, the communication network had a vertical structure: The Royal Court placed its administrators and military commanders in all major settlements according to the political hierarchy. The capital city remained the primate city in the country and the importance of other cities was mostly based on their rank in the administrative hierarchy. In the seventeenth century, commercial towns began to emerge but most of them ranked lower than administrative towns unless they combined both functions or had special strategic military importance. Korean cities were basically the offspring of the administrative system.

In the eighteenth century, manufacture, trade, and an increase in the network density began to modify the urban hierarchy. Chungju and Sangju, large regional centers, were able to retain their prosperity even after the transfer of provincial capitals to other cities.
CHAPTER IX

THE YONGNAM-RO AS A GEOGRAPHICAL EXAMPLE

Summary

The main communication artery of the Korean Peninsula was developed along a northwest-southeast axis connecting the mouths of the Yalu and Naktong rivers through the lower Han Basin in central Korea. The influence of this route on Korean history was considerable. The northern part of this axis extended to Mukden, the core of Manchuria, while the southern part looked toward the direction of West Japan. The most productive regions and important regional centers were developed along this artery. The southern section of this artery, the Yongnam-ro, exhibited peninsular characteristics, while the northern section was continental.

The Yongnam-ro, covering 380 kilometers between Soul and Pusan, was a leading communication artery during the Yi Dynasty. The official name of that road was the Kyongsang-Chunchong Daero, Royal Road #4, but its folk name, the Yongnam-ro, was more popular and in use today.

The Yongnam-ro zone consists primarily of two geographical regions, the Upper Han Basin and the Naktong Basin. The drainage area of the Han River spreads over three provinces. The Yongnam-ro zone included 19 counties in the southern part of the Han Basin and about 70 counties in Kyongsang-do.
The Sobaek Range, in the middle of the Yongnam-ro zone, forms the watershed of the Han and Naktong Rivers. The former flows to the northwest and the latter to the south. The estuaries of the two rivers are located at either end of a diagonal that is parallel to the Yongnam-ro. The Yongnam-ro ran through the natural routes opened by the main courses or the tributaries of the Han and Naktong rivers. The Sobaek Range played the role of major political and cultural frontier in the Yongnam-ro zone. But few barriers are forever insurmountable to the will of the people to communicate. Numerous intermontane routes on the natural saddles bound together the people of the regions on either side of the Sobaek. Among the various passes on the Yongnam-ro, the Saejae Pass was the most important one.

The Han-Naktong route played a very important part in the political and cultural consolidation. The distance between the navigation termini of the Upper Han and Upper Naktong rivers was only 40 kilometers. The actual length of the barrier on the Sobaek Range was no more than 10 kilometers because of the natural path opened by the tributaries of both rivers on either side of the Saejae Pass. Few routes had this natural advantage. Although they sometimes competed, the Han and Naktong rivers thus provided a fairly continuous natural setting for the location of the Yongnam-ro.

The purposes of roads vary through time. Roads
sometimes vanish because they do not fulfill the purposes of a new political system. The evolution of the Yongnam-ro shows the relationship between political affairs and changes in road itineraries. The history of the Yongnam-ro is divided into five periods: Antiquity, the Three-Kingdoms, the Koryo Dynasty, the Yi Dynasty before the eighteenth century, and the Yi Dynasty after the eighteenth century. The history of the Yongnam-ro reflects the changes in political doctrine of the various succeeding monarchies translated into administrative, economic, cultural, and social changes. It is the dynastic changes which caused, in most instances, the transfer of capital cities and shifts in communication routes.

The emergence of the Yongnam-ro probably started in the second millennium B.C. with the development of an ancient civilization based on agriculture, ceramics, and metallurgy. In antiquity, the Han-Naktong route was the migration route of the northern tribes, then became a trade route. The uneven distribution of such resources as rice, salt, iron ore, fish, and luxury goods provide an opportunity for those who could organize interregional trade. Seoul, leading city of the Han Basin, was probably the entrepot between the southern tribes and the Chinese commandery-prefectures of northwestern Korea. In the Han Basin, rice and iron from the Naktong Basin were traded for salt, fish, and Chinese exotic goods.

The development of overland routes between the Han and
Naktong basins was initiated during the military campaigns of the Three-Kingdoms era. For two hundred years, the Koguryo and Silla dynasties, located on either side of the Sobaek Range, tried to force their way into the other's territory. The two forces established their postal routes from their capitals to the frontier of the Sobaek Range. Numerous garrisons and fortresses in the Han and Naktong basins were connected by postal routes. Chungju in the Han Basin and Sangju in the Naktong Basin were the respective frontier headquarters of the two forces and became rival cities. After the unification of Korea, Silla extended its postal route from Kyongju into the Han Basin through the Sobaek Range.

The Koryo monarchy contributed to the development of the communication network by establishing a countrywide postal system focusing on Songdo, which was in the central part of Korea. The shift of the focus of the communication system from Kyongju to Songdo reflected Koryo's imperialism. The north-south communication axis extended to the Yalu River through Pyongyang, the frontier subcapital of Koryo. The orientation of this network also reflected the discriminatory treatment against the former Late Paekje territory located in the southwest. To rescue the Korean Peninsula from political chaos of the late Silla Dynasty, the Silla Court handed its legitimacy peacefully over to Koryo, thereby reunifying the Peninsula, but the Late Paekje focus in southwestern region showed no such
willingness. Songdo and Kyongju established close ties with each other because the Koryo Court adopted the Silla system and hired members of the Silla elite to official positions. The Yongnam-ro became more important than the route to the southwestern region.

Buddhism, the state religion of Koryo made great contributions to the development of communication routes. Pilgrimages promoted the growth of manufacturing, trade, and cultural diffusion. The temples improved roadways through voluntary road maintenance and the establishment of hospices.

The founding of the Yi Dynasty meant the consolidation of the communication system, which was paralyzed during the Mongol dominance and during the raids by Japanese pirates in the late Koryo Dynasty. The establishment of the Yi Dynasty was accompanied by historic changes, such as the transfer of the capital city from Songdo to Seoul and the adoption of Confucianism as political philosophy. The three major tenets of the Confucian government were: 1) the respect for China and the maintenance of relations with neighboring countries; 2) the development of agriculture as a main economic goal; and 3) the repression of Buddhism. The impact of these principles on the development of the communication system was considerable. The development of the X-shaped road pattern focusing on Seoul was first initiated in the late fourteenth century. Seoul became connected with the four termini of the main highways.
During the early Yi Dynasty, the southwestern and northeastern axis of the communication system were less important politically, economically, and culturally than the northwestern and southeastern axis. Nevertheless, Confucian scholars highly revered these two sections because Hamhung, the birth place of King Taejo, was located on the northeastern axis and Chonju, the cradle of the royal Yi clan was to the southwest. But in practice the two other axis were the true communication routes. Political and cultural contacts with neighboring countries were achieved through the Uiju-Seoul-Pusan route. It connected the large regional centers that were the main providers of the State revenue.

The Yongnam-ro zone, the largest granary of the country, was devastated during the Japanese invasion from 1592 to 1598. Although the region was reconstructed to some degree, it political and economic dominance dwindled. Communication routes were subsequently reorganized after the transfer of the provincial capitals of Kyongsang-do and Chungchong-do. The Yongnam-ro's location shifted from the Saejae route to the Chupung-ryong Pass route, located to the west. The Yongnam-ro joined the Samnam-ro at Chonan: A new upside-down Y-shaped road pattern began to bind the two largest agricultural regions together.

In its road design, the Yongnam-ro could not be compared to the Roman or Chinese roads. It was a dirt road of simple design. Its width varied from region to region.
For instance, it was about 10 meters wide near large cities, but only an average of 3 to 5 meters elsewhere, that is to say wide for only one vehicle.

The techniques used to build it were also simple. Roadcutting and bridging were generally avoided. Only a few mountain notches and hanging galleries can be identified, and they are only 1 to 3 meters wide and therefore, pedestrian and pack-animal roads. A few bridges allowed vehicular traffic, but most of them were also only for pedestrians. Vehicles had to ford shallow streams or use ferry-boats. What made the Yongnam-ro outstanding was its strategic location and its vital influence over Korea during the periods of prosperity when that road was managed properly.

Because of poor road conditions and physical features, the sections of the Saejae and Paljo-ryong passes and of the Jackson bypass, totaling 60 to 70 kilometers, could not accommodate vehicles. Still over 300 kilometers of the Yongnam-ro could accommodate both pedestrians and vehicles.

It is undeniable that over some periods of time vehicular traffic and the road conditions were poor in many parts of Korea. Misinformed travellers made hasty generalization about the Korean communication system because they did not link the temporary political or economic situation of those times with road conditions and assumed that the communication system was yet to be developed. However, archaeological and anthropological
evidence indicate that ancient Koreans widely used vehicles. Thorough research on the modes of transport through the ages in Korea still needs to be done.

A few of the reasons for the decline of wheeled vehicles during the late Koryo and the early Yi Dynasty were: 1) decrease of the population of draft animals during the Japanese piracy because of the destruction of most western and southern coastal pastures; 2) the decrease of overland transportation because the Yi government preferred to use water routes to transport bulky cargos; 3) the decrease of cattle because animal-slaughtering was not taboo to Confucians as it was to Buddhists; and 4) the restrictions placed on commerce which discouraged regional exchange and consequently resulted in a paucity of cargos to be transported by vehicles.

The function of the road was determined by its users rather than its designers. The Yongnam-ro was originally established almost solely for administrative purposes. Then, in the late Yi Dynasty, it began to function as a cultural diffusion route and as a trade route as well. Travel and transport were originally mostly done for official purposes, but mass movement of people and cargos became common by the eighteenth century.

The restrictions imposed upon commerce in the early Yi Dynasty discouraged economic activity: trade was limited to the government-sponsored markets in the administrative centers. During the seventeenth century, the application
of the Taedong-pop (Law of Great Correspondence) and the repealing of the law prohibiting commerce promoted the development of manufacturing and interregional trade.

The Taedong Reform stimulated the growth of manufactures dealing in textiles, ceramics, paper, metal smithing, lacquerware among others, because farmers did not any longer have to pay taxes in local products, mostly raw materials, and could pay with cotton, hemp cloth, or even coin money. Subsequently, the Yongnam-ro became the largest producer of textile, ceramics, paper, ginseng, tobacco, and iron.

In the eighteenth century, 300 to 350 of the 1000 markets of the country were located in the Yongnam-ro zone. The Han-Naktong river ports served as loading and unloading points. They became the foci of the trade routes from the inland markets. Pusan, the trade base with Japan, played an important role as promoted of trade in the Yongnam region. There large amounts of textiles, ceramics, ginseng, and other goods were exported to Japan, and imported Japanese goods were channelled from Pusan to Seoul and other major markets through the Yongnam-ro.

As a geographical and cultural unit, the Yongnam-ro has unique characteristics. It used to be the core of Korean Buddhism, then the center of Confucianism. In the Koryo and Yi dynasties, members of the Confucian elite from the Yongnam region dominated politics and scholarship. Many of them served as foreign envoys and local governors.
Upon retiring, they returned home with new ideas acquired during their service. The Yongnam-ro became the main technological and cultural diffusion center.

The cultural chauvinism and authoritarianism of the Yongnam nobles made them cultural conservatives. Their influence on the standard Korean language, on technology, and on the country's cultural heritage was considerable. Conversely, however, they were extremely selective and recalcitrant to the adoption of ideology or culture from other regions. In this sense, the role of the Yongnam-ro as a cultural diffusion route was almost one-sided.

The impact of human occupation in specific region is reflected on the landscape. The contemporary landscape is a product of a cultural succession of occupancy. Roads are key factors to the understanding of the physical and cultural landscapes. The reconstruction of the stages of the Yongnam-ro can be done by investigating the landscape, the settlement patterns, and the urban network.

Four aspects of the landscape changes along the Yongnam-ro were examined: landforms, vegetation, road markets, and landuse patterns.

From a bird's eye perspective, a long strip of disturbed soil often indicates the location of a former road. In the Yongnam-ro, natural vegetation was almost completely removed by fire, lumbering, and agricultural activities over a period of several thousand years. Although most of the abandoned roads have been reforested,
the evidences of soil erosion whether past or contemporary can still be identified in rugged areas. Large construction works undertaken along the Yongnam-ro, also led to landform changes. For instance, the backswamps of the Han and Naktong basins were reclaimed and the dikes used as road-bed for the Yongnam-ro for nearby fortifications.

The tradition of intensive landuse, which influenced the development of today's horticulture and cash-crop farming, can be recognized along the Yongnam-ro. In many areas mountain slopes were used as cash-crop fields, orchards, and mulberry plantations. Large markets along the Yongnam-ro promoted intensive farming.

The surviving material landscape, such as roadside trees, road signs, stone monuments, shrines, and the remains of temples and fortifications, are also roadside changes and clues to the traditions of the people who made them. Traditional roadside trees, such as elms, willows, and pines, were later replaced by Italian poplar trees. Some road markers, monuments, and shrines were destroyed because of their pagan connotations to Christians and for cultural liquidation purposes by the Japanese.

Roadside settlements fall into two groups: the royal settlements and the commercial settlements. The royal ones were established for postal service at regular intervals along the postal roads, while the commercial ones emerged at natural convergences of communication routes. The
former consisted of post stations, public hostels, and ferry settlements, while the latter consisted of commercial inns, periodic markets, and river ports.

The post stations were the most important of the royal settlements. More studies of these settlements could lead to a better understanding of the social structure and mobility of the commoners of the Yi Dynasty. Royal settlers were commoners engaged in menial services. The hereditary nature (entail) of their work gave their settlements distinctive characteristics such as class homogeneity, consanguinity, and reliance on subsistence farming. Despite the sizable population of most such settlements, post stations remained mere farming villages because they were often located away from the main arteries and therefore, improperly sited for commercial activity.

True roadside settlements began in the seventeenth century as a result of the increased transport of cargos and travellers. Market towns and commercial rest areas were located at strategic foci, and the form of these road settlements related to the road patterns. Commoner merchants were unhindered in their choice of strategic foci for their settlements because Korean nobles, guided by geomancy, consistently avoided choosing settlement sites located by the roadside.

The origin of Korean cities goes back to ancient times. A number of Korean cities in the Yi Dynasty emerged from the core of tribal kingdoms, and evolved as local or
regional centers through the Three-Kingdoms and Koryo periods. From early, the Yongnam-ro zone was the most densely populated and productive region of Korea. It had a large number of administrative towns for its size.

In the eighteenth century, numerous market towns and garrisons developed, and some of them were more prosperous than local county seats, but administrative towns were still a majority. Some administrative towns, located at strategic points of communication, became regional service centers by consolidating trade and manufacturing with their administrative functions.

The original network of the Yongnam-ro zone formed a vertical pattern which connected the royal capital and local administrative centers. In the eighteenth century, however, a horizontal structure between the counties or regions was added because of the development of trade. The eighteenth century was the peak of the pre-modern urban network in Korea, and the Yongnam-ro was the core of urbanization.

The urban hierarchy of the eighteenth century falls into six levels based on the administrative rank, the function of cities, and the network density. Higher level cities generally retained multi-level functions and a large population.

Seoul, the state capital, was the primate city and leading political, cultural, and commercial center. Second level cities, equivalent to the level of Songdo, did not
exist in the Yongnam-ro zone. Provincial cities in the eighteenth century or earlier, such as Chungju, Sangju, Taegu, and Kyongju were important regional centers of the third level. Fourth level cities were dominated by administrative towns, but below that level, large commercial centers and garrisons often exceeded administrative ones.

The changes of the communication network pattern reflected the changes in political ideology themselves influenced by internal or external historic events. The Yi Dynasty had a feudal concept of administrative routes and intended not to diversify their function until in the eighteenth century. The commoner merchants established their trade bases along the roads and opened the eyes of the administration to the importance of commerce. Had the Korean nobles realized the importance of the road and had they used it as the main source of profit through trade, they would have paid more attention to road management. Had they developed the roads and established their settlements along them, the Koreans might not have endured such hardship in the late nineteenth and early twentieth centuries. When the Westerners invaded Korea in the late nineteenth century, they noticed that the control of communication network was neglected by the Korean nobles. The Japanese colonization, which began in the early twentieth century, was accomplished through the control of communication networks and the colonization of major
commercial towns along the highways. After the Japanese annexation of Korea, these towns became the regional service centers and were named after the nearby former leading administrative towns.

CONCLUSION

The Yongnam-ro and the inland navigation routes of the Han and Naktong River complex, which formed the main artery of southern Korea, has been partially studied in this dissertation as a means of understanding an important phase of the Korean civilization. This study included the cultural history, roadside landscape both physical and cultural, settlement patterns, the urban network, and the impact of the Yongnam-ro. Archives, old maps, modern topographic maps, and Korean and Chinese classics have been examined as data for the reconstruction of the Yongnam-ro in the past. Fieldwork farther documented the trace of the ancient route.

The key factors of the reconstruction of the past were physical setting, administration, economic activity, political philosophy, social tradition, and military affairs. Such elements as contemporary physical and cultural landscapes, and relicts served as the documentary records for the reconstructions.

The results of this study are concluded as following:

First, the Yongnam-ro was fixed by long experience in premodern times on the best location between the Han and
Naktong basins.

Second, the Yongnam-ro played important roles in the political, social, economic, and cultural integration of the Han and Naktong basins. The integration of the Yongnam-ro zone was the epitome of the unification of Korea.

Third, the function and site selection of the road were mutable. The development of the Yongnam-ro began by military campaigns in ancient times, and became completely established by administrative demands of the Confucian bureaucracy in the Yi Dynasty. The development of interregional trade intensified the function of the Yongnam-ro, but the influence of the Western technology resulted in the decline of the Yongnam-ro.

Finally, the quality of the road for the Confucian Korean does not mean the road design, but good management of the road. Korean society at the heyday of a dynasty was highly mobile. When the Yongnam-ro was well maintained and busy, Korean society prospered, while when the Yongnam-ro was poorly managed, Korean society was disorganized and confronted with external threat.

The Yongnam-ro, imperial highway, was indeed the epitome of the Korean nation.
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