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COUNTRY North Korea

SUBJECT The North Korean Academy of Sciences

REPORT

DATE DISTR. // May 1962

NO. PAGES 1

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personnel, facilities and activities of the North Korean Academy of Sciences

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INFORMATION REPORT INFORMATION REPORT

Academy of Sciences

Outline

1. To develop science and learning the North Korean government established Academy of Sciences in 1953 with its main building in front of the Hae-bang-san (Liberation Mountain) in Chung-ku, P'yŏngyang-si. The academy ran a research institute of social sciences, a library and a printing office. The research institute of social sciences was located in Hungbu-dong in So-gu, P'yongyang-si. Following is a list of specialized agencies of study and affiliated offices of the Academy:

   a. Research Institute of History

   b. Research Institute of Economics and Jurisprudence

   c. Research Institute of Languages and Literature

   d. Research Institute of Physics and Mathematics

   e. Research Institute of Chemistry

   f. Research Institute of Engineering

   g. Research Institute of Atomic Energy

   h. Research Institute of Biology

   i. Central Chemical Assay Office

   j. Library

   k. Printing Office

   l Research Hall

   In addition, there were three more research institutes of medical science, pharmacology and agricultural science. But in 1957 the research institutes of medical science and agricultural science became two independent organs by incorporating medicine and pharmacy into the former and absorbing agriculture into the latter. However, there was no complete equipment for the research institutes of atomic energy and central chemical assay office as the former was housed in the research institute of physics and mathematics and the latter was temporarily set up in the research institute of chemistry. As of 1960 the President of the Academy of Sciences was PAEK Nam-un (4101/0589/7189) under whose supervision there were seven members and 13 candidate members. The Academy also operated specialized committees to discuss technical problems. The committees were composed of scientists in the Academy and distinguished scholars in various colleges and special technicians in production workshops to solve problems relating to science and production that arose periodically.

Organization and functions

2. The administrative organization of the Academy of Sciences was as follows:

   President

   Deputy President (3)

   Research Secretary (1)

   Staff Department

Bookkeeping Department

Planning Department

Accounting Department

Confidential Documents Section

Library

Printing Office

Central Chemical Assay Office

Research Hall

3. The function of each post were as follows:

a The President of the Academy of Sciences was named by the Cabinet. He was responsible for the administrative and research affairs of the Academy as its supreme head, and for this reason he was selected from among the internationally renowned scholars in the world of science.

b. The three deputy presidents were also named by the Cabinet to take charge of each of the three independent fields that is to say, natural science (mathematics, physics, chemistry, biology and engineering), social science (economics, law, history and philosophy, languages and literature) and finance.

c The research secretary was appointed by the President of the Academy to regulate separate themes of study for each research worker assigned to each institute, control the guidance of bachelors of science who were regularly trained in the Academy and control research students working in each institute. He was selected from among scientists mostly in the field of social science. In addition to his administrative duties the secretary had a theme for his own research. There was a plan to appoint two research secretaries to take charge of the two fields-natural science and social science, respectively.

d. The staff department handled personnel affairs, hiring office employees and selecting research workers and research students in the Academy.

e. The bookkeeping department managed finance and disbursed salaries and wages to each individual in the employ of the Academy.

f. The planning department formulated plans for the operation of the Academy, regulated research plans of each institute and examined the results of the execution of these plans. However, comparing to other planning departments in the production fields its function was very weak and its performance of given mission was insignificant.

g. The accounting department supplied research materials, guaranteed the living requirements of the employees and managed the vocational farms.

h. The confidential documents section was the secretariat of the President of the Academy and it handled reception and dispatch of all official documents.

i. The library purchased books that were necessary to the study of science and loaned them to all students of research for review. The librarian also managed and operated branch libraries that were established in each research institute. The number of books collected in this library was unknown, but it was second only to the library of KIM Il-sŏng University. There were

very few classical or antique books, but those in the catalogue were collected since the Armistice of 1953. The rare old books were available in the KIM Il-song University Library. The foreign books were mostly imported from the USSR. There were some English and German books, and the importation of Japanese books began in 1958. Foreign periodicals and magazines of scientific interest were normally imported. The scientific magazines published in England and America were mostly received via the USSR in translated copies.

j. The publishing office chiefly printed scientific books and also issued regular monthly magazines, the articles being the presentation of results of study of the members of the Academy and translations from foreign scientific books. Its book-binding art was superior to other publishing offices, but the printed copies were so much limited that there were no free sales. Instead, all of the Academy's printed matter was sold by distribution to designated organizations and individuals through the book distribution agency. The publishing office of the Academy of Sciences was the highest authority in North Korea in Printing scientific books.

k. The study institute was similar to a university hall as its function was to train scientists under the control of the Academy.

4. For administrative purposes each research institute was composed of a chief, a deputy chief, an accountant, a librarian, and a warehouse keeper. The chief was appointed by the President of the Academy of Sciences from among scholars of authority in each field of research. He controlled both research and financial affairs, but placed more importance on research. Many of the chiefs possessed the degree of bachelor of science. The deputy chiefs were also appointed by the President of the Academy of Sciences from among scholars of authority, but they had more responsibility in the control of administrative business than research work. Not a few deputy chiefs held the degree of bachelor of science.

5. The research staff in the Academy of Sciences was composed as follows:

Member, candidate member, research worker, assistant research worker and assistant. Among the above staff, the members and the candidate members were assigned to the Academy of Sciences as the highest authorities in research work, but the research workers, assistant research workers and assistants were assigned to each research institute.

The functions of each research institute by specific duties were as follows:

a. The procedure of appointment of the members was unknown, but there were seven of them up to date, and they were the persons who received doctor's degrees during the Japanese occupation. In the Academy they held the offices as the President, deputy president or chief of each research institute in the field of administration.

Among the members, PAEK Nam-un (economics), the President, CH'OE Sam-yol (chemistry), the deputy president, PAK Si-hyong (chief of history research institute), and YI Song-ki (chemistry) [redacted] 50X1-HUM
In North Korea the office of a member of the Academy of sciences was regarded as equal to a doctor's degree. However, a person who had no doctor's degree was qualified to be appointed as a member if he had scored big results in his scientific studies and even a doctor was not admitted into membership if he presented little of his study results. The members represented the scientific standard of the Academy of Sciences and they received additional allowances as members plus their monthly pay for administrative duties. [redacted] the amount of the additional allowance was about 120 Won 50X1-HUM
a month. Moreover, a sedan was offered to each member for his exclusive use.

Most of the members received doctor's degree from the Japanese schools in the past, but there were no members of young men with new education.

Since 1945 North Korea never received doctor's degrees in the Soviet Union or in other nations nor were doctor's degrees the only requisite for a person to be promoted to the membership of the Academy of Sciences.

b As of 1960, there were 13 candidate members who were all assigned to the Academy of Sciences. They were next to the members in research work and each one was put in charge of an administrative duty. A man could be promoted to the status of a candidate member if he had demonstrated good results of his studies in his special field and could qualify as a full member in the future even though he has no doctor's degree. But there were some candidate members who possessed doctor's degrees. Each candidate member gave guidance to the research workers in his special field. It took many years for a candidate member to become a full member and yet he should present outstanding record of his research. Since the establishment of the Academy of Sciences not a candidate member was promoted to the status of a full member, but it was rumored that during 1960 five candidate members would become full members.

c. It was the duty of each research worker to engage in practical research activities in his research institute. The number of research workers assigned to each research institute was different, but each one had his own subject of research and he worked on it with several assistant research workers and assistants. Many of the research workers had bachelor's degrees but there were some who had no degree. There were two kinds of research workers, holding exclusive posts and additional posts. Each exclusive research worker owned an assay room in his research institute and pursued studies in his special field. The research workers of additional posts had separate duties as teachers, technicians or officials in colleges, factories, Party and government organizations and they visited the research institute several times a week to work on the subjects specially connected with their own professions. The research workers were selected from among college teachers of substantial resources and factory workers who displayed astounding production results. Most of them had one object, to get the degree of doctor or bachelor of science. Almost all workers in the field of science had the same object because academic degrees brought higher social position and higher living standard.

Therefore, many college teachers and production technicians in the field of science wished to be transferred to the research institute of his own choice in the Academy of Sciences to pursue studies of their special field because they had no spare time to prepare thesis for a degree while working in their official posts. Nevertheless the employers in their workshops would not give them recommendations for the reason that they were important members in their own organizations.

The research workers were able to study their own subjects of special field and when they presented good results in these studies they were promoted to higher posts as chief and deputy chief of the research institute. Moreover, if their thesis for a degree passed the degree awarding committee they could receive the degree they wanted. A research worker who presented exceptionally good results in his studies may become a candidate member of the Academy of Sciences or promoted to a chief of department or chair in the college. Each research worker was given the same treatment as a college professor.

d. In each research institute there were some assistant research workers who helped the research worker in his special study. The number of assistant research workers assigned to each research worker was unknown, but the assistant research workers were either college graduates or qualified engineers whose duty it was to investigate documents or conduct experiments under the direction of the research workers, and to present the data of their work to the research workers. When the college graduates were assigned to the Academy of Sciences on plan each year they were distributed to each research institute where the research workers chose the most suitable ones to work in their special

field of study

It was a common desire for all assistant research workers to prepare their thesis for a bachelor's degree, but they had no spare time to do so. Therefore, they collected materials, conducted experiments and examined documents as source materials for their thesis, and wrote it in full scale when they were appointed as research workers.

e. The assistants were graduates of professional schools or qualified junior engineers whose duty it was to help the assistant research workers by conducting experiments under their direction.

Research Hall

6. In order to give guidance to those who wish to get bachelor's degrees, the Academy of Sciences operated a research hall similar to that established in a college or university. The research students were enrolled once each year for three-year training. It was the object of the research hall to help the students prepare and submit the thesis within that three-year period in order to get the bachelor's degree. But there were practically none who submitted the thesis within that period, and most of the student were only able to submit the thesis after service of two or three years in a workshop upon graduating from the research hall.

During the early period of the three-year course the students were given lessons in philosophy, economics, and Russian to sit for "minimum" examination (preliminary examination for a degree).

The general indoctrination subjects were taught to all students in the research hall in a joint lecture and the special subjects in individual classes by separate lectures. The instructors were members, candidate members, chiefs and deputy chiefs of the research institutes and research workers and sometimes the teachers of the KIM Il-sŏng University were also invited. On many occasions, joint lectures were given them along with their fellow students from the KIM Il-sŏng University Hall. When the basic training was completed the students were assigned to each research institute according to their special fields of study and pursued their researches under the direction of the chief, deputy chief of the institute and research workers. The period of research including the basic training was three years and after the lapse of three years they graduated whether they completed the preparation of the thesis of degree or not After the graduation the students were assigned to colleges or production workshops where they continued their research work during the period of two three years until they were able to complete their thesis for a degree.

During the past the research students were enrolled from among college graduates who passed the entrance examination successfully. But since many of them were unable to write a thesis until after completion of the three-year course, a new regulation was enforced by which college graduates with good records were assigned to various workshops to find out a subject of special research through their practical experiences and to collect materials for the thesis, and such students were admitted on application with the recommendation of the workshop chief. There was much competition, up to 20 : 1, but there was even more competition to obtain the recommendation of the workshop chiefs who would refuse to write it simply because the applicants were needed in their workshops.

One or two research students were recruited annually for each research course or 50-60 students were selected in all. In addition to the regular research students there were correspondence students who were chosen from among college graduates assigned to workshops and were given guidance in the preparation of their thesis for a doctor's degree The correspondence research students went through the three year course while attending their workshops. But they were required to carry on their research work in a research institute of their special field of study during three months' vacation annually. However, a correspondence student rarely wrote a thesis within the three year period and in practical cases they held somewhat responsible positions in their workshops, and so they were unable to exclusively devote to their research work even during the three months vacation. In this way the Academy authorities are now working out a new method to improve the operation

of the research hall as it failed to produce the expected results.

Operational policy

7. Since its creation in 1953 up to 1958 the Academy of Sciences produced no research results worthy of mention as the research students even failed to submit a thesis for a degree until their graduation from the Academy. In other words, the production factories made more research results which contributed to the production activities than fewer research results in the special fields of study in the Academy. Therefore the drawbacks in the operation of the Academy of Sciences called by the attention of the government, which found two causes for the drawbacks, that is to say, little experience and low scientific standard of the research workers who are exclusively in charge of research work in various research institutes and no substantial resources and abilities to link production and the scientific research work. In other words, each research worker was charged with a specific research subject to pursue, but there were no results worthy of mention and if there were any results they had no value in the field of production. So their many years' study came to nought

In order to straighten these drawbacks the Academy of Sciences established a more strict criterion in the selection of research workers and research students beginning from 1958. To be more specific, the research workers were chosen from among persons who possessed bachelor's degree and obtained rich experiences in their long research work so that they could perform a responsible study on their research work so that they could perform a responsible study on their research subject and train their young students. These research workers were each given a test room and the production technicians and college teachers were given additional posts as research workers to utilize all available facilities in the Academy.

In the enrollment of the research students, college graduates were recruited immediately after their commencement exercises, but under the new regulations, only the persons who served in a production workshop or a college research organization during a period of two or three years after their graduation and were regarded as promising students were chosen. Consequently the research students made better records with higher reputation than before and more students were awarded academic degrees. But on the other hand their ambition for scientific research markedly decreased and their qualifications for the training of scholars of substantial resources was lacking. For this reason, beginning from 1960 the regulations were again changed so that honor college graduates were assigned to workshops which had a close link with their special field of studies while the existing research students were given an annual leave for three months to conduct research experiments in the Academy of Sciences. Moreover, at the end of the three-year research course a vacation of six months were granted by request of each student to write a thesis under penalty of being dismissed. This new method was adopted because in the past more bachelor's degrees were awarded to the workshop employees than to research institute graduates. The research students, thus selected, were placed under dual control of the workshop and the research institute, and the workshop managers who had little understanding of the research activities would be very stingy in giving time for study. So the students complained that they were unable to obtain any results expected from their research work. The persons who received bachelor's degree were mostly students from the field of natural science who failed to receive thedegree although they prepared their thesis because they lacked in experiments In order to open up this bottleneck, the students in the field of natural science were given an opportunity to have more experiments during their practice or training in foreign countries after completion of their thesis. In 1959, nine students were awarded the bachelor's degre and all of those persons were from the field of social science, especially economics, languages, and literature, but not a single one represented the field of natural science. In conclusion, due to the shortage of able scholars and the lack of research facilities, the Academy of Sciences had produced no significant results to date. Therefore, the government and Party made a criticism that the Academy of Sciences conducted its research work isolated from practical production.

Method of Operation

8. The Academy of Sciences was operated with the National Budget which included no receipts from sales of its products. The necessary expenditures were accounted for in the annual budget and were delivered to the Academy. There was no fixed norm for research for scientists in the several research institutes, but there were deadlines for the accomplishment of research plans and all research works had to be completed within the period on plan. The total amount of budget for the Academy was unknown, but each research institute made plans of research and requested the annual budget for those plans from the bookkeeping department, then the written requests were submitted to the national planning committee with the approval of the President of the Academy of Sciences. Usually the requests were okayed by the said committee if they had passed the bookkeeping department of the Academy. So in practical cases there were no shortage of research funds in each research institute. When a production factory had a problem for urgent solution sometimes it asked the Academy for cooperation, and if it was possible to make the research in the factory the Academy dispatched its personnel to the scene. In such cases the necessary research funds were furnished by the factory and the Academy only paid travel expenses to its own personnel. The building expenditures and the internal equipment costs of the Academy were not included in the operational budget, but they were earmarked in a separate budget and were submitted to the national construction committee.

The working staff of the Academy of Sciences are paid fixed amounts of wages in addition to rewards for their outstanding results of research. The members and research workers of the Academy also earned secondary incomes by contributing articles to magazines and newspapers and by delivering lectures in colleges and other organizations, thus earning comparatively large amounts.

Facilities and Equipment

9. The facilities and equipment of the Academy of Sciences were as follows:

a. The history research institute was housed in the main building of the Academy in front of the Haebang-san (Liberation Mountain) in P'yŏngyang-si. The chief was Dr. PAK Si-yong (2613/nta/nta). The institute was composed of two departments--history and philosophy. Professor KIM Sok-hyong (nta) was in charge of the former and HWANG Chang-yop (nta) the latter. Archaeological researches were also made in this institute.

b. The languages and literature institute was also in the main building. The chief was KIM Pyong-che (6855/nta/nta). The institute was composed of two departments--languages and literature. Since the literature was handled chiefly by the Writers' Leaguethe institute directed its main strength to the study of languages.

c. The economics and law research institute was located in the main building and it was composed of two departments--economics and law under the supervision of the chief, KIM Chi-kyong (6855/5347/nta) who specialized in economics.

d. The biology research institute was located in Hungpu-dong, So-gu, P'yongyang-si. It was divided into two departments--zoology and botany. The institute has a completely laid out Zoo in the Taesong-san (Mountain) and it planned to expand its small botanical garden in the same mountain in large scale up to 1961.

e. The engineering research institute in Hungpu-dong chiefly engaged in the study of promoting production facilities, but its equipment was limited to basic experimental tools of engineering theory.

f. The physics and mathematics research institute was also in Hungpu-dong. It was composed of two departments--physics and mathematics. The chief was KIM Chi-kyong (6855/nta/nta), who specialized in mathematics. The building of the institute stood on a hill descending from Moran-bong to Hungpu-dong. It was a two-story structure, equipped with assay rooms for each study course. There were small experimental tools on the second floor and large experimental tools on the first floor. The experimental tools for physics included the following articles:
Miniature generator for experimental use (steam power and hydroelectric power)

Rectivier

Tools for research of magnetic force

Electron computer

Electron translater

Spectrum analytical machines, 3 (one Czechoslovakian and two East German)

X-ray generator, 2

X-ray camera, 2

Electro microscope

Cyclotron, 1

Betatron, 1

Atomic reactor, 1

The physics and mathematics research institue also carried on meteorological research, utilizing the tools in the P'yongyang Meteorological Observatory although it had an observation telescope of its own.

g. The chemical research institute was also in Hungpu-dong, but its food laboratory was housed in a building in Chonsung-dong, P'yongyang-si. The chief was YO Kyong-ku (nta). The institute was divided into four departments--inorganic chemistry, organic chemistry, physical chemistry, and bio-chemistry. In the inorganic chemistry research room the inorganic industries were handled, in the organic chemistry research room the multi-molecule compounds were handled, and in the physical chemistry research room they handled colloid chemistry. A discussion was in progress with a plan to expand the facilities in the chemical research institute by each study course within two or three years, and at the same time, the Academy of Sciences, for the object of establishing a separate central analytical office independent of the chemical research institute and ordered all necessary equipment from East Germany with one hundred million won out of the national budget in 1957. The ordered instruments began to arrive in North Korea from 1959, but the central analytical office did not start its functions by the same year. Therefore, the instruments were temporarily accepted and preserved at the chemical research institute. The instruments were made in several sets by each article and portions will be employed by the chemical research institute even though the central analytical office will open its business in the future. Until the arrival of the above shipments from East Germany, the research instruments in the chemical research institute were insignificant. The imported articles from East Germany included the following instruments:

Thermostatic bath

Viscosimeter

Ebulliscopy

Melting point meter

PH (pronounced peha) meter

Various instruments for analysis of radioactive elements

Dialyzer

Instruments for experiment of raising of boiling point

Various Ion-exchange resins

Polarograph, 6

Spectrum, 5

Freezing machine

Centrifuger

Chemical balance

Miniature drying furnace, 10

map' furnace (transliteration), 10

Hydrometer, 10 sets

Distilling aparatus, large 1, small 1

Chromatograph, 6

Various compounding devices

Mixer, 6

Specimens of various elements

Specimens of various minerals

The chemical research institute was criticized by the Party authorities because its research activities contributed even less to the industries than the central laboratory of the Ministry of Chemical Industry. So the research workers exchanged their research subjects for those directly connected with industry, and as a result they produced hexachlorine which is presently used as an agricultural chemical. In the field of organic chemistry they succeeded in compounding acetal with carbide. But this research project was launched in parallel with that of the central laboratory of the Ministry of Chemical Industry. So, in order to evade the waste of labor and time it was agreed that all scientists should maintain a close liaison with each other in their research work.

In addition the chemical research institute proceeded with many other research projects, but it took more time and presented less profitable factors of industrializing requirements as compared to those of the production factory laboratories, making it impossible to apply its research results to the production process.

Therefore, it was arranged that the research workers will maintain a close liaison with the production factories in order that the research institute might meet the requirements of the production factories by direct application of the results of their works to the production process. KIM Kil-chae (6855/0679/0961), a teacher in the Chemical Department, KIM Il-sŏng University, succeeded in the development of synthetic rubber and was appointed as a research worker in the chemical research institute, Academy of Sciences. Presently he is being dispatched to Hungnam where he is engaged in a special research to find out the method of industrialization of the synthetic rubber. However, there was a criticism that his synthetic rubber lacked elasticity and was too hard. In the biological chemistry research room of the chemical research institute, a special study is being made to compound protein and this study will be transferred to the biological research institute in the future.

The chemical research institute has not yet started the study on atomic chemistry. The physics and mathematics research institute is hastening in the study of atomic physics by giving lectures on its elementary knowledge to college teachers and production technicians. At the same time the chemical research institute has organized atomic chemical lecture meetings and the department of atomic chemistry was established in the KIM Il-sŏng University in 1960. But there were many bottlenecks because of no scientists who specialized in atomic chemistry.

It was foreseen that when the atomic energy research institute is inaugurated an atomic chemical laboratory will be established therein.

h. As it was stated in the above, the Academy of Sciences placed orders in East Germany for the buildings and internal equipment of its central analytical office with a total budget of 100,000,000 won in 1957 and the shipments of the analytical instruments began to arrive in North Korea in 1959.[1] The drawings of the building design was also completed in East Germany and the ground leveling work on the building site was commenced in 1960. The design showed that the buildings will be laid out in Y-shape, but it was a common opinion of all North Korean scientists that the buildings in design were too large and there were no building lots spacious enough to lay out the buildings according to the design. So it was their idea to change the type of the buildings while constructing the internal structure as it is in design for joint employment of the facilities with the chemical research institute.

The central analytical office was unable to start its business until 1960 because there were very few analytical scientists who could operate the office successfully. The laboratory of the Ministry of Metals Industry was the organization which was at the top level in chemical analysis in North Korea and there were many experienced technicians in analysis in that laboratory. So it was planned to organize the central analytical office with the same laboratory as the parent body. But this plan was frustrated on account of a strong objection on the part of the Ministry of Metals Industry which argued that it was absolutely necessary to maintain an independent laboratory for the national development of underground resources which plays a big role in obtaining foreign currency. Therefore the Academy of Sciences, in order to train analytical scholars who will work in the central analytical office, called chemical technicians from colleges and production factories and assigned them to the laboratory of the Ministry of Metals Industry and chemical research institute.

i. The atomic energy research institue made its decision on the structure and personnel organization only, but it did not start its functions until 1960, and it was housed in the building of the physics and mathematics research institute. The atomic energy research institute mapped out all business plans for it specified agencies, but there were no scholars of special study in the field of atomic energy in North Korea, so possibly it will end as a plan only.

At present the atomic energy research institute cannot develop its research work independently. Instead, the physics and mathematics and chemical research institutes organized lecture meetings in order to arouse the interest of the scientists for atomic physics and atomic chemistry. Moreover, an atomic reactor for experimental use was installed in the physics and mathematics research institute and it will be moved to the atomic energy research institute when it is housed in its new buildings. The North Korean scientists also conceived a plan to import atomic reactors for power and to make atomic reacters for experimental use in the future.

Tendency of Scientists and Directions of Research

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10. Those who took the initiative in the field of science in North Korea were mostly the persons who received education during the Japanese occupation and now hold responsible positions in the scientific research organizations in North Korea.

[redacted]

Furthermore, there were only a few people among those old scientists who could read and understand Russian so they had no hope of making further development. On the other hand, the young men who studied in the Soviet Union, East Germany and Czechoslovakia learned the scientific developments in those advanced nations. In addition they were not only proficient in foreign languages but steadfast in Communistic ideology, so they are now playing the role of mainstay in the scientific world in North Korea today. Now they are solely engaged in the research work without apparent friction with the old scientists who are in a position to give them proper guidance, because the young scientists have no ambition for position or power.

11. In the past, the research institutes under the control of the Academy of Sciences were alienated from reality and laid emphasis on scientific research only making no remarkable results. But in 1958, at a congress of scientists many scientists were criticized for their leisured attitude for research and their research work irrelevant with production process. Furthermore, they were blamed for their poor research results inferior to those of the technicians in the laboratories of the production factories. Consequently a resolution was made among the scientists that they should quit their past attitude of research in order to launch new research work directly profiting production activities in parallel with pure scientific research.

Beginning from 1961, the North Korean Government poured its greatest effort in the field of compounding chemistry, especially in the developments of synthetic fiber and synthetic rubber and other multi-molecule compounding chemistry which had a direct relation with the people's living according to the Seven Year Economic Plan. So the government concentrated almost all chemists in the Hungnam and Hamhung areas which is the center of chemical industry in North Korea.

Investment in the Scientific Research

12. In 1953 the North Korean Science Museum was created, but the construction of its exterior building was completed only in 1960. The total amount of investment in scientific research in North Korea was unknown, but the budget for its research work was in charge of the national planning committee and the investment for its construction projects was taken care of by the national construction committee. In 1959 more importance was placed on production in the scientific research work and a large number of scientists was transferred from various research organizations under the control of the Academy of Sciences to the production factories, and as a result there was a considerable cut in the research work expenditures.

The amount of investment in the scientific research work varied according to the annual national economic plan. In 1957 the research in chemistry and physics took great shares of the invested amounts--100,000,000 Won for chemistry and 300,000,000 Won physics.[1] The invested money in the field of chemistry was expended in placing orders for the design of the Central Assay Office, Academy of Sciences and its internal equipment from East Germany and the said design and equipment materials began to

arrive in North Korea since 1959. The ground leveling work for the construction of the Central Assay Office was commenced in 1960, and when the building is completed with some changes in the external model of design sent from East Germany the building as well as the imported chemical equipment will be jointly used with the chemical research institute. As for the research of physics, 300,000,000 Won worth of various equipment was ordered from the Soviet Union and Czechoslovakia in 1957. These were chiefly radio reactors and other research instruments which began to arrive in North Korea since 1959. It was not certain whether the invested amount in the field of physics also included the equipment fund for the atomic energy research institute, but the physicists agreed that 300,000,000 Won was enough to procure complete equipment of the physical research

Relations with Scientific Research Organizations Abroad

13 As it was stated in the above, the Academy of Sciences exchanged reports on the scientific developments with foreign scientific research organizations while it proceeded with its own research work. In other words it imported scientific information from foreign countries and it introduced the results of research in North Korea to other nations. North Korea and the Soviet Union signed an agreement for the exchange of scientific information by which the scientists of both countries meet in Moscow in autumn each year to discuss scientific problems. About five or six scientists were dispatched from North Korea each year to participate in the discussions of their special fields of research. In 1959 the deputy chief of the chemical research institute (name unknown) represented North Korea in the Moscow meetin. The exchange of scientific information was also made with other Communist nations. North Korea chiefly received information on metallurgical engineering from China, chemical engineering from East Germany, mechanical engineering from Czechoslovakia, wireless engineering and medicine from Hungary. The principal method of exchange was in the mutual dispatch of regular scientific journals and collection of essays, and when an important article was presented the North Korean scientist who handled the subject was invited to participate in the presentation meeting. 50X1-HUM

The scientific books of all Communist nations included regular journals and collections of essays and these were handled by the book distributing agency of the North Korean Government which supplied the books to the subscribers on application. 50X1-HUM

When a research organization under the control of the Academy of Sciences was confronted with a bottleneck in the course of its research and its solution was impossible in North Korea the scientist in charge of that research was dispatched to the country of best development in this field to make a special research in that country during six months or a full year. In the field of chemistry a man named KIM Hyo-yong (nta), an instructor of physics and chemistry in the KIM Il-song University and a research worker in the chemical research institute, Academy of Sciences in the Soviet Union during a period of six months after he had visited Russia in April 1959. In 1954 HONG Ha-hyong (nta), an assistant research worker in the chemical research institute, went to the organic chemistry research institute, Soviet Academy of Sciences, where he finished three-year-study on multimolecule compounds, received bachelor's degree and was promoted to a research worker in the chemical research institute in North Korea where he returned in 1957.

In 1957 five Soviet scientists (three smelter specialists and two metallurgical specialists) arrived in North Korea on invitation to assist in the repair of the smelters in the Hwanghae Ironworks. As first seven research workers from the Academy of Sciences in P'yongyang were dispatched to the ironworks to fix the smelters, but they were unable to solve an operational drawback in the repaired smelters even though they were aided by the technical staff of the ironworks.

The three Soviet smelter specialists chiefly examined the hot air furnaces and shortened the smeltering time by solution of the problem until the end of 1957. Up to that time it was impossible for the North Korean technicians to maintain the four hot air furnaces in the Hwanghae Ironworks at a temperature of 700 degrees by using them alternatively. But it was unknown as to how much it did profit the production. The aforementioned Soviet specialists stayed in North Korea until the Spring of 1958. Another group of three Soviet scientists arrived in the pilot plant of the vinalon factory established in the Pon'gung Chemical Factory and inspected its working process.

East Germany dispatched some unknown number of scientists to Hamhung where they conducted research on building materials and synthetic fiber

In 1958 several Soviet technicians arrived in the nitrate ammonia workshop in the Hungnam Fertilizer Factory and cooperated with the factory engineers in the operation of the safety mining tower. At first the production was rather small because the regulation of temperature was out of order in the tower and even the Soviet technicians could not fix it. At last some scientists in the Soviet Academy of Sciences came and succeeded in regulating the temperature in the tower and guaranteed an annual production of nitrate ammonia up to 300,000 tons

Personality Information

14. The following in personality information on NK scientists:

1) a. Name: KIM Pyong-cho (nta)

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b. Rank and Position: Chief, Language and Literature Research Institute, North Korean Academy of Sciences

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2) a. HONG Ik-kyong (nta)

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b. Research worker, Chemistry Research Institute, North Korean Academy of Sciences

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3) a. CH'OE Yong-ae (1508/5391/1947) (Female) 50X1-HUM

b Analyst, Central Analysis Office, North Korean Academy of Sciences 50X1-HUM

4) a. KIM Sok-hyong (nta) 50X1-HUM

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b. Chief history research worker, History Research Institute, North Korean Academy of Sciences

5) a KIM Chi-kwang (nta) 50X1-HUM

b Chief, Physics and Mathematics Research Institute, North Korean Academy of Sciences. 50X1-HUM

6) a. KIM Yan_hwa (nta) 50X1-HUM

b. Research worker, Chemistry Research Institute, North Korean Academy of Sciences

7) a CH'OE Sam-yon (nta) 50X1-HUM

b Member North Korean Academy of Sciences

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c) a. KWAK Suk-hyon (6753/3219/6343) (Female)

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b Assistant research worker, Chemistry Research Institute, North Korean Academy of Sciences

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d) a. YIM P'ung-hun (nfa)

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