

History of Science in Korea: An Appraisal of the Discipline*

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Last spring a one-hour program about Ch'omsongdae, the oldest existing astronomical observatory in the world, was flashed over the television screens of Korea. It was one of the better-received TV shows, particularly because it was only months after Korea started its color cast for TV in February 1981. Ch'omsongdae has been one of the most popular historical remains for the Korean people. In 1979 a debate on the function of Ch'omsongdae was held at Sobaeksan Observatory under the joint sponsorship of the National Observatory and the Korean History of Science Society. It was the second such meeting, the first was held in 1973. Then in June 1981 a third meeting was called at the very site of the ancient observatory, Kyongju, on the occasion of the visit of four Japanese historians of science. All these meetings and debates turned out to be a publicity success over the newspapers and broadcasts in the country.

Such publicity of the Ch'omsongdae debates serves as a barometer to measure the status of the history of science in Korea today. Topics in the field of the history of science have been generally well received among Koreans. It seems to me that there are two reasons for such popular responses. First, the history of science has many innately interesting topics in it though largely neglected by Korean scholars. It is true that the history of science and technology has been lamentably neglected among all the areas of historical studies in Korea. There are so many questions to be answered in the field. But there is another reason for such a popular response, which is more or less symptomatic of the present state of the history of science in Korea. Because of the peculiar state of the discipline in Korean academe, historians of science in Korea tend to seek direct communications with the public. In short the popularity of the history of science in Korea today seems to reflect the instable academic state of the discipline. In Korea today active historians of science are very small in number and there is no way to formally train a new breed. One can even say that the history of science is not yet an "established" field of Korea. Under the given conditions, the historians of science tend to seek more publicity to confirm their place in another direction.

Despite such instability of the discipline, the history of science in Korea has been making impressive progress in many ways. Although the number of scholars who would declare their major field as history of science is small, those who would take it as a minor are numerous. Still more are those who are seriously interested in the discipline one way or another. Every year thousands of college students take courses in the history of science, and more colleges and universities are opening courses, with still more willing to do so if instructors are available. Nevertheless colleges and universities offer only a few survey courses in the field, thus leaving the history of science in

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Korea without any formal program to train its own students. Amateurism, then, is the best word to characterize the discipline in Korea today.

Amateurism has been a keynote from the earliest days of the history of science in Korea. It was toward the end of the nineteenth century that Korea's traditional science and technology began to attract scholarly attention. Though some Korean scholars in the seventeenth century recognized the superiority of Western science and technology, they had hardly begun any leisurely comparison of their tradition against the West before the opening of Korea. Only years after the opening of the ports in 1876, Koreans started to compare the significance of their own tradition *vis-a-vis* Western science and technology.

Such an assessment was possible only after Koreans began to grasp the outline of Western history especially in its context of scientific and technological developments. When they glumly recognized the scientific and technological superiority of the West after experiences of brute military showdowns, Koreans began to show their intellectual inquisitiveness in the different historical experiences of Korea and the West. Most of the reports in the *Hansong sunbo* the first modern newspaper published every ten days in 1883-1884, were about foreign countries, especially about Western science and technology of the time. Even an outline of the historical developments of Western science and technology was reported by the paper in the second month of 1884. Armed with such an outline history of Western science and technology, Koreans could now turn their scrutiny to their own tradition in search of significant achievements in science and technology to meet the Western yardstick.

One of the earliest Koreans who arrived at such a recognition was Yu Kil-chun (1856-1914). As one of the foremost intellectuals of the Enlightenment period, Yu Kil-chun also was the first Korean student in America. In his book *Soyu Kyonmun*, which he completed after his return from America, he picked up Koryo celadon, the turtle-boat, and movable metal type as the most proud cultural heritages of the Koreans. According to him, the Koreans might have gained world fame if they had continued their in depth investigations to develop more convenient things as they used to do before. But the Koreans failed in so doing, and were undergoing their share of tragic historical experiences, so concluded Yu Kil-chun.

Yu Kil-chun's regret was shared by many of the Korean intellectuals after him. Such regrets were more and more acutely felt by the Koreans at the turn of this century under the growing pressures from the Japanese, and they had finally become a sore spot in every thinking Korean's mind after 1910. During the Japanese dominance period, many Koreans tried to uncover some proud episodes from their past with the hope of relating them to the future of their fatherland. What they had discovered were often scientific achievements with some military and artistic ones. In history the Koreans were superior with their cultural achievements than with their social successes, according to Ch'oe Namson in 1931. To borrow his declaration, the Koreans are "indeed a rare breed of people of genius" in their capacity for cultural creativity. Ch'oe Nam-son mentioned movable type and celadons of the Koryo period; the Korean alphabet, the rain gauge, the turtleboat, and the "flying waggon" (*pich'a*) of the Choson period; Chomsongdae of the Silla period to support his argument.

This recognition of Korea's past achievements in science was largely concurrent with the awakening of nationalist feeling among the Koreans. Yet corresponding academic research on them

did not follow soon among the Koreans. Rather such academic interests were mostly shown by the foreigners in Korea during the first half of the twentieth century. Japanese meteorologist Wada Yuji was one of the first such scholars who wrote on Ch'omsongdae and the rain gauge. And many Western missionaries stationed in Korea began to show their wide-ranging interests in Korean culture, including Korea's tradition in science and technology. The Westerners were particularly active and productive academically with the Korea Branch of the Royal Asiatic Society. Through their regular meetings and publications sustained interest in Korean traditional science was shown, especially in such memorable works as Bowman's "History of Korean Medicine," Underwood's "Korean Boats and Ships" (1934), Boots' "Korean Weapons and Armour" (1934), and Rufus' "Astronomy in Korea" (1936) among others. (For a bibliographical essay with a selected bibliography on Korean history of science and technology, see Seong-Rae Park, "The History of Science," in Han Kyo Kim (ed.) *Studies on Korea: A Scholar's Guide*, Honolulu, 1980, pp. 113-119).

All of these were accomplished amateur historians of science, all of them foreigners. They were primarily to meet the curiosity of inquiring minds of the period, and nothing more. Yet through such initial efforts the Koreans were gradually building their pride in their scientific heritage. And often they showed a tendency to exaggerate their cases during the "nationalist" period of historiography. Such a historiographical danger was already pointed out by a distinguished historian of the period. In his introduction to "History of Korea" published in the *Choson Ilbo* in 1931, Sin Ch'ae-ho (1880-1936) warned historians not to give the same historical meaning to the global theory of the earth held by Kim Song-mun (1658-1735) as to the Western theory of the same meaning. Whereas the Western theory of the globe was the source of inspiration for the later adventures leading to the discovery of America, as Sin Ch'ae-ho contended, Kim Song-mun's idea did not lead to any such result. Fifty years after the warning, Sin Ch'ae-ho is still very much relevant for the historiography of science in Korea today.

The history of science in pre-1945 Korea reached its epochal achievement with the publication of Hong I-sop's survey history of Korean science, the *Choson kwahak-sa* (1944). As a general historian of Korea, not particularly conversant with science, he first wrote the book in Japanese to translate it into Korean in 1946. After narrating the "innumerable achievements of genius" in Korean science, Hong I-sop in his book analysed the reasons for the Koreans' ultimate failure in developing modern science to find his answer in the "backwardness of Korean history in view of world history" due to the "stagnant nature of Koreans." He defined his book as a "tentative presentation of the history of science in the context of Korean history in general," and expressed his hope for the future development of the subject by the efforts of "scholars from natural sciences with enough training in historiography."

As the author himself admitted, Hong's book was not a systematic history of Korea's scientific tradition, but an orderly arrangement of materials he collected about the subject from his readings of Korean history. Nevertheless, his product, in my opinion, was an excellent piece of scholarship and it is not thoroughly outdone by later books on Korean science up to now. In a way it is because the history of science in Korea has done so little since his book.

In July 1960, the historians of science in Korea gathered themselves to organize a society of their own — the Korean History of Science Society. This time, as Hong I-sop had once expected,

the motive force of the society was supplied by the scientists interested in the historical aspects of their subject. Already by that time, Kim Tu-jong's study on the history of Korean medicine and Yi Tok-pong's study on the history of biology in Korea were well under way, whereas the first college course on the history of science in the West was begun by Pak Ik-su. At its inception the Korean History of Science Society was organized mostly by scientists, although there were some nonscientists such as Korean historian Hong I-sop and Western historian Im Ch'ae-won.

In their first organized efforts, the Korean History of Science Society set goals in two areas (a) to open more history of science courses in colleges and universities, and (b) to reconstruct the science museum. According to the resolution passed at the charter meeting of the society, an open letter urging the opening of lectures was sent to a number of university presidents of Korea on October 1, 1960. Then in the next month a series of memorial lectures to celebrate the foundation of the Society was delivered by Kim Tu-jong, Yi Tok-pong and Yi Chong-jin. For the next three years the Society was active only to become dormant thereafter until 1971.

In the meantime, however, some significant achievements in the field were made by a number of scholars. In 1961 Yi Kwang-nin wrote a book on the history of hydraulic devices in Korea (*Yijo suri-sa yon'gu*), and it was followed by Yi Ch'un-nyong's work on the history of agricultural techniques in 1964 (*Yijo nongop kisul-sa*). Then Kim Tu-jong wrote his two books on medical history — one as a survey history of Korean medicine (*Han'guk uihak-sa*), and the other as an accompanying chronology (*Han'guk uihak-sa yonp'yo*) both in 1966. In its volume and thorough scholarship, Kim Tu-jong, with Miki Sakae's similar tome of 1955, left a lasting imprint on the history of Korean medicine. It was also in this period that Ho Son-do prepared his book on the history of Korean firearms.

In 1966, Chon Sang-un wrote his first edition of the history of science and technology in Korea, *Han'guk kwahak kisul-sa*. Making a sharp contrast with historian Hong I-sop, Chon entered the history of science with a college degree in chemistry. It was natural that Chon Sang-un was taking a greater step forward than Hong I-sop particularly in the technical aspects of astronomy, geography, mechanical engineering, and chemical techniques. Two years after Chon's work, a composite book on the history of Korean science and technology was published as the third volume of the Korean Culture Series (*Han'guk munhwa-sa taegye*) by the Korean Culture Research Center of Korea University. Though the qualities of the various parts of the volume are uneven, it was a valuable effort in trying to sum up scholarly efforts up to the time into one volume.

We can safely say that the 1960's can be represented by the organization of the Korean History of Science Society and the books by Chon Sang-un and Kim Tu-jong. Yet the Society fell into half-sleep after the first three years of activity, and the books were not enough to arouse a wide interest in the field of the history of science and technology in Korea.

From the early years of the seventies the history of science in Korea was regaining its vitality under the banners of the Korean History of Science Society. This time a major portion of the motive power behind the Society was provided by Song Sang-yong, who returned home in 1969 with his A.M. in the history of science from Indiana University. As the first formally educated historian of science in Korea, Song Sang-yong in his role as the secretary of the Society actually led the Society to make it a worthy academic vehicle. Seminars and symposia, a couple of them annually, were prepared by the Society in the seventies, and some of them were about the Western

history of science such as "Addresses Commemorating the 500th Birthday of Copernicus" (1973), "Symposium in Commemoration of the Bicentennial of the Discovery of Oxygen" (1974), "Fifty Years of Quantum Mechanics" (1976), "Memorial Addresses at the Centenary of Einstein's Birth" (1979), and "Kuhn's Historiography of Science and Neighbor Disciplines" (1980).

But more attention was given to the Society's activities in the field of Korean history of science and technology, such as "Movable Metal Types of Korea" (1972), "Ch'omsongdae" (1973), "Theories of the Rotating Earth Held by the Choson Scholars" (1975), and "Turtle-Boat" (1976). Among these the Ch'omsongdae was by far the most popular topic of them all, with two follow-up debates in 1979 and in 1981 respectively. Often the Society's activities were oriented to the people in the streets than to the academic circles exclusively. And such a tendency was in a way inevitable under the given conditions of the history of science in Korea, for it was wiser for the survival of the Society itself in unfriendly soil.

Thanks to the active efforts of the Society, Korean history of science in the seventies succeeded in securing firm ground in several ways. First, it attained a high degree of popularization in Korean society. This was possible largely because the Society was intentionally oriented in this direction. Of course there is always some danger in the over-popularization of an academic field. Secondly, it also achieved impressive advances within the academic arena of Korea. Foundations such as the "Sanhak hyoptong chaedan" (Korean Traders Scholarship Foundation) have been very generous to the Society's academic efforts on many occasions. And in 1977 the Society was accepted as a member of the sponsoring societies of the Annual History Convention of Korea, thus opening a separate panel of the history of science in the annual meetings of the nation's historians. Thirdly, it contributed greatly in improving the history of science in Korea both in quantity and in quality. Especially by joining the Annual History Convention from 1977, the Society had to solicit more than a dozen papers every year from its members. Such a quick turn of events inevitably produced poor papers as well as quality products. But this, I hope, will gradually upgrade the over-all quality of the papers in the field. On top of this the Society began to publish its first journal in 1979 – *Han'guk kwahak-sa hakhoe-ji*.

History of science was very productive during the seventies. First of all some important books were published in the decade. Chon Sang-un's survey history of Korean science and technology was republished in a revised edition in 1976. Actually this was done in accordance with its English version, Jeon Sang-woon, *Science and Technology in Korea: Traditional Instruments and Techniques* (Cambridge, Mass: MIT Press, 1974), and a Japanese translation was published in 1978. Another notable product came from the history of mathematics with *Han'guk suhak-sa* (History of Mathematics in Korea, 1977) by Kim Yong-un and Kim Yong-guk. Although the Korean Culture Series (1968) had a chapter by Kim Tong-gi on Korea's mathematical tradition, this was the first book-size presentation of the topic. Not only did this book introduce the contents of the traditional mathematics in Korean history, but also it expanded its scholarly interests into the realms of social history and intellectual life of the traditional period. Authors here tried to delineate a dual structure in the mathematical tradition of Korea, the mathematics of the (*sadaebu* ruling class) on the one hand and that of the *chungin* (middle people) on the other. They seem to suggest that such a dual development was detrimental in the development of Korea's mathematical tradition in the Choson period. This was a welcome contribution for the history of science in Korea.

Kim Chae-gun's monograph on the development of naval shipbuilding techniques in the Choson period (*Choson wangjo kunson yon'gu*, 1976) was another important addition for the discipline during the period. Though there is a chapter on shipbuilding prepared by Kang Man-gil in the Korean Culture Series (1968), this was the first book on the subject, and it made in depth understanding of many technical points possible for the first time. Kim Chae-gun was also diligent in his efforts to popularize his research for general readers by writing a survey history of ships and boats of the world (*Pae ui yoksa*) and about the myth of the turth-boat (*Kobukson ui sinhwa*).

Less known to the public, but another immensely significant contribution in the history of science was done by three astronomers, Yu Kyong-no, Yi Un-song, and Hyon Chong-jun, who had successfully translated the massive astronomical and calendrical sciences of the King Sejong era of the early fifteenth century. Under the sponsorship of the King Sejong Memorial Society, they translated the *Ch'ilchongsan* (Calculations of Seven Planets), thus transforming the highest scientific knowledge of the fifteenth century into a sort of modern astronomy book. The valuable experiences of the three astronomers in their common venture have kept their attention to the history of astronomy ever since. Several studies were published by them after the translation, and Yi Un-song came out with a study of Korean traditional calendars (*Han'guk ui ch'aengnyok*, 1978).

About Korea's traditional printing technology, there was Kim Won-yong's study in the fifties, and then Son Po-gi's *Han'guk ui kohwalcha* (Old Movable Types of Korea) published in 1971. A significant addition was made in 1979 with the publication by medical historian Kim Tu-jong's *Han'guk koinswae kisul-sa* (History of Traditional Printing Techniques in Korea). In 1980, Pak Hung-su published a volume of collected papers on his study of traditional measures and traditional music, *Toryanghyong kwa kukhak nonch'ong*, on his sixtieth birthday. A similar collection of papers was also made by pharmacologist Hong Mun-hwa with his *Yaksa san'go* (Miscellaneous papers on the history of pharmacology) in 1980. Three years before Hong, Kim Yong-je prepared a short book on the history of pathology in Korea (*Han'guk pyongnihak-sa*). Although there are several historians of medicine, including Yi Yong-t'aek, the number of scholars in the field is too small in view of the enormous amount of work to be done. And the Korean Medical History Society, which was organized years before the Korean History of Science Society, has rarely been active. I do not know why the history of biological sciences and medicine is particularly neglected in Korea today. Perhaps this is one more malady in the historiography of science in Korea to be quickly cured.

As the final addition to the list in the seventies, we must include a bulky volume on various aspects of the modern history of science and technology in Korea, prepared by the Korean Culture Research Center, Korea University. This volume is included as the third volume of its Modern Korean Culture Series, just like the previous one on the traditional period in its Korean Culture Series.

Above is a rough survey of the books published in the seventies on the Korean history of science and technology. But notable progress was also made for the discipline with a growing number of academic organizations showing interest in the field as much as with growing number of scholars. As noted earlier, it was from the early seventies that the Korean History of Science Society shook off its earlier slumber to enter the active period. An important, though indirect,

service was made by the Korean Culture Research Center of Korea University with its preparation of two massive volumes on the Korean history of science and technology in its two series on Korean culture. More direct efforts were made by the Institute of Korean Studies of Yonsei University, which initiated a series of symposia on the astronomers and calendrical scientists of the 17th and 18th centuries. Planned by Min Yong-gyu in the beginning, the symposia were carried on by Yi Chong-yong in 1980 when Min retired. The outcome papers from the symposia were printed in the *Tongbang hakchi* and the *Kukhak nonch'ong* in several consecutive issues. And the Institute made it known that its interest in the area would be continued after the formal end of the three-year symposia. And in 1979 the first independent research institute for traditional science of Korea was organized by Kim Yong-un at Hanyang University. The Institute of Korean Science published its first issue of *Chont'ong kwahak* (Traditional Science) at the end of 1980. Then in June the Institute extended its activity by cosponsoring the Korea-Japan History of Science Seminar in Seoul.

This seminar itself was a landmark of a sort in the development of the historiography of science in Korea, for this was the first such occasion for the historians of science in Korea to meet foreign counterparts at an official discussion table for common academic interests. Several of Korea's historians of science had had their experiences of studying history of science in Japan or in America, and a few of them had received degrees there. Academic contacts with foreign scholars, however, had never been frequent in the past. The first Korean attendance at the International Congress of the History of Science occurred in the 14th Tokyo-Kyoto meeting in 1974. Three Koreans attended the Congress — Chon Sang-un who was doing research at Kyoto University at the time, Kim Yong-jun who was then an exchange professor at Waseda University, and Song Sang-yong who flew from Seoul. When the next Congress met at Edinburgh in 1977, only Song Sang-yong attended this time. On both of the occasions the Korean participants did not read any paper to the Congress. The 16th International Congress of the History of Science held in Bucharest, Romania (August-September, 1981) turned out to be an unusual occasion where four historians of science from the Republic of Korea met three scholars from the North. This time Chon Sang-un, Song Sang-yong, Pak Song-nae, and Kim Yong-sik read their papers at the Congress, and so did the scholars from North Korea.

Meanwhile a few foreign historians of science visited Korea, the first being Nakayama Shigeru of Tokyo University, who came to Korea in 1971 to deliver a public lecture on "History of Science and Japanese Society" at Seoul National University. In 1974, the French historian of science, Jean Théodoridès, whose short history of biology was translated into Korean, came to Seoul and made a speech on the scientific adventures of 18th century Europe. Then Yoshida Mitsukuni of Kyoto University paid a visit to Korea in 1976. It was only in 1981 that a major international contact of some significance happened with the first Korea-Japan History of Science Seminar in Seoul. This meeting was an academic conference, unlike the personal and friendly visits of Korean or foreign scholars in previous international contacts. Secondly this meeting was only the first of such conferences to be held in the future alternately by the historians of science in Korea and Japan. Historians of science from two countries felt the need of cooperation and contact among scholars interested in the traditional sciences of Korea, China, and Japan for mutual benefits in their research. More than any other branch of human culture, science demon-

strates universality encompassing the differences in time and place. In this sense the history of science requires more cooperation among the scholars involved than any other field of learning. Furthermore, this seminar was attended by several distinguished historians from Japan: Nakayama Shigeru, Shimodaira Kazuo, Miyashita Saburo, and the well-known historian of Chinese science, Yabuuchi Kiyoshi.

It is, of course, very desirable for Korean historians of science to open a new vista outside. Yet the major task for them is to self-strengthen the discipline itself in Korea. It is with this spirit that the historians of science, at one of their society meetings in 1980, set their goals: (1) at the establishment of independent departments of the history of science at college and graduate school level; (2) at the investigation of the scientific and technological remains from Korea's past to recover the cultural treasures in this area. To these I can add another item of urgent necessity for the development of the history of science in Korea, namely the collection-annotation-translation of the books and materials on traditional science and technology from Korean history. Let me explain each of these tasks.

(1) The investigation of the remains of scientific culture has been under way by the Korean History of Science Society since the fall of 1980. With a research fund granted by the "Sanhak hyoptong Foundation," members of the Society started to measure the sizes of some traditional instruments and take pictures of the traditional devices in science and technology. Up to now Koreans usually took only their artistic remains as "munhwa-jae" (cultural treasures) with almost no respect for the remains in the field of science and technology. Hopefully this investigation should eventually lead to the change of such an attitude among Koreans. This time the investigation will cover only the better known areas of astronomy, meteorology, and measuring instruments, to extend later into less known areas of traditional science.

This investigation should meet the long felt need of revising the unbalanced view of the Korean people about their cultural heritage. Although considerable efforts are geared to discover and rebuild the cultural remains of the past in Korea's artistic tradition, no matching effort has been made toward her scientific heritage. Even the better known remains were often put under no sign of protection at all, refusing to designate them even as "treasures," although so many times from artistic tradition were designated as "national treasures," or "treasures" officially by the Korean government. Korea has numerous public or private museums today for artistic remains of the past. But there is no single museum for scientific and technological remains in Korea today. There is the National Science Museum (*Kungnip kwahak-kwan*) under the Ministry of Science and Technology, which is not a museum interested in the least sense in the traditional science of Korea, with its main effort in providing a demonstration center of modern science and technology for high-school or elementary school students.

For the better future of Korea's history of science as well as for the Korean people, what we need urgently now is a science museum, where investigations can be continued and recovery of Korea's past scientific heritage made as well as providing a place to exhibit them to the public. Such a science museum can even carry out research on the lost techniques from Korea's past, such as the technical details of Koryo celadon and the turtle-boat, so as to make genuine reproduction of Korea's past scientific remains possible.

(2) Another basic work necessary for the Korean history of science concerns books and

other materials necessary for research. Thanks to considerable development and an adequate number of researchers, other areas of Korean history seem to enjoy adequate supplies of source materials for research commercially or otherwise. Due to the meager number of active researchers in this field and to the diversity of interest among them, as well as to the total lack of students in the discipline, historians of science in Korea today are thoroughly without any benefits in terms of source materials. What is here is essentially a vicious circle. Original sources in other areas of Korean studies are continuously uncovered by scholars and are diligently reprinted for public sale by publishers. But with the history of science such an effort is almost unknown. The bibliography of the Kyujanggak Library, for instance, lists the smallest number of books in this area, and a publisher who had reprinted the collected textbook series in the Enlightenment period declined to extend their business to cover science texts. In many areas of Korean studies, publishers are competing in reprint businesses. But they always shy away from books on traditional science and technology, for they are loss-guaranteed.

Under the given conditions, it is natural that beginners in the history of science will be immensely discouraged to step too deeply into the unfriendly waters. To encourage these beginners as well as to help the established scholars some radical measures are badly needed now. In this connection there have been some improvements going on in the past decade. The translation of *Ch'il chongsan* (Calculations of the Seven Planet) almost ten years ago by three astronomers, for instance, can be taken as one such effort. The King Sejong Memorial Society, which supported the translation, and the National Culture Enhancement Society have been continuing their translation efforts in various fields of Korean studies. Science-related translations thus far include Yi Ik's *Songho sasol*, Hong Tae-yong's collected writings (*Tamhon-so*), Yi Tok-mu's *Ch'ongjangwan chonso*, Yi Kyu-gyong's *Oju yonmun changjon san'go*, and *Chungbo munlion pigo*, among others. And Songsin Women's College Press is planning to publish a series of science classics of Korea in reprint from this year. But such an enterprise will never be enough with the efforts of one college press. Obviously we need some radical improvements here.

(3) The last but the most important task for the Korean history of science today is to remedy the perennial lack of manpower and the total lack of any means to train future historians of science in Korea. Recently the Academy of Korean Studies organized dozens of editorial committees to prepare their five-year plan toward an encyclopedia of Korean studies. Two of the committees are for science and technology. By the members of the two committees, thousands of entries are being identified to be included into the encyclopedia eventually. But what makes them annoyed most is the absolute lack of candidates who would be able to write on the selected items of interest for the encyclopedia.

The past decade produced a number of historians of science for Korea through formal or informal routes of training. In addition to the scholars mentioned above and some others like Yi Yong-bom and Nam Ch'on-u, who were active for many years, many others came into the discipline during the last ten years. Astronomer Na Il-song became seriously involved in the history of astronomy through his diligent participation in the symposia on the 17th and 18th century astronomers by the Institute of Korean Studies of Yonsei University. Pak Song-nae (Park Seong-Rae) returned home in 1977 after finishing his M.A. in the history of science at the University of Kansas and his Ph. D. in Korean history at the University of Hawaii. Ever since he

wrote several times about his dissertation, "Portents and Politics in Early Choson Period, 1392-1519," and has been active in studying the introduction of Western science into Korea from the seventeenth century.

With the rising concern about the recent development of science in Korean society, many science organs had written or are planning their own historical records. Coping with such an interest, Song Sang-yong and Ko Kyong-sin recently produced a fine piece of research on the development of modern chemistry in Korea. Song Sang-yong, in particular, has shown a great deal of interest and resourcefulness in deciphering the recent developments of Korean science against the broader background of the history of science in the West. Another notable addition was made by Hyon Won-bok, who wrote a few papers on the development of popular science movements in the 1920's and thereafter. And Kim Chong-hum, with all of his active involvement in the popularization of science activities, did his share of study in the history of physics and science education in modern Korea. Kim Yong-sik finished his dissertation at Princeton on "The World-View of Chu Hsi (1130-1200)" in 1979 and has been working on various aspects of Western and Chinese sciences. Kim Ki-hyop is another Korean who was attracted to Chinese science, though he is showing interest in some aspects of Korean history too. In 1981 a book about traditional firearms using gunpowder was published by Ch'ae Yon-sok after years of study and experiments. To this list of an increasing number of Korean historians of science, we can add Yi Song-u, who has established himself as the expert in the traditional culinary techniques and Yi Ch'an as the expert in the traditional cartography of Korea.

Thus the number of scholars in the history of science has been steadily increasing. Nevertheless, a very serious problem remains without any foreseeable solution in the near future. The problem, which might be a source of serious difficulty for the history of science in Korea, is the often uncompromisable diversity of the training and interests of the scholars involved. They are so markedly far away from each other that many of them are hardly talking to each other. At present those contributing to the history of science in Korea can be divided into three different groups. They are (A) scientists interested in the history of their major fields, (B) historians interested in the development of science as a part of broader historical changes, and (C) those scholars more or less trained in both science and history. Out of them the most active in Korean historiography of science now is Group (A), while Group (C) come next and Group (B) make the smallest number of them all. Sometimes the lack of communications particularly between Group (A) and (B) is almost complete, reminding us of C.P. Snow's "two cultures."

By the very nature of the history of science and due to the peculiar position of the discipline in Korea, we have these three heterogeneous groups of scholars in one camp, and we need them all. To say it ideally, however, these different groups of scholars must try to familiarize themselves with diverse interests and methods held by different people in the camp. This is easier said than done. So what the history of science in Korea needs most at present is a formal educational channel to train future historians of science properly, not only to improve the academic atmosphere of the established historians of science but also to self-perpetuate the discipline in the future. The history of science in Korea has yet to establish itself as an independent academic institution. It must free itself from the malady of amateurism.