GREAT DISCOVERY IN BIOLOGY AND MEDICINE

-Substance of Kyungrak-

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— SUBSTANCE OF KYUNGRAK —

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CONTENTS

EDITOR'S NOTE

Professor Kim Bong Han, Head of the Chair of Physiology at the Pyongyang Medical College and his Kyungrak research collective made a great discovery of a new tubular system, the substance of Kyungrak, existing in living bodies, in addition to the hitherto known nervous, blood-vessel, and lymphatic systems.

Premier Kim Il Sung sent a congratulatory message to Professor Kim Bong Han and his Kyungrak research collective praising their exploits which have put Donguihak (Oriental Medicine) enjoying a long history in our country on a firm scientific basis and made an outstanding contribution to the development of modern biology and medicine.

The State Professorship and Degree Conferment Committee awarded professorship and doctor's degree in biology to Kim Bong Han (then assistant professor). The People's Prize Conferment Committee of the Democratic People's Republic of Korea awarded a People's Prize to Professor Kim Bong Han.

This booklet is published to give an outline of the theory of the substance of Kyungrak.

February 1962

CONGRATULATORY MESSAGE
OF
PREMIER KIM IL SUNG

Dear Comrades,

I extend warm congratulations to you all upon your discovery of the substance of Kyungrak and your great scientific exploit in this field.

The success you have scored in the research has put the theory of Dongeuihak (Oriental Medicine) with a long history in our country on a firm scientific and material ground and made an outstanding contribution to the development of modern biology and medicine. This is also a demonstration of the creative talent of the Korean people who enjoy a long-standing cultural tradition. It is another great victory won by the Korean people in the era of Chullima.

The entire Korean people highly praise your exploit and are proud of it as a great success in the scientific development of our country.

With patriotic enthusiasm and indomitable fighting spirit you comrades have scored a brilliant success surmounting all the difficulties and obstacles arising in your research work to implement the task put forth by the Party, which called for inheriting and developing the valuable scientific and cultural heritage left by our forefathers and bringing the science of our country up to the world level at the earliest date.

Your loyalty and faithfulness to the Party and the people have exhibited the noble spirit of the Red scientists and the technicians brought up by the Party, setting an example to all scientists and technicians of the country.

Today, the scientists and technicians are entrusted with an important and honourable task in the struggle for socialist construction, prosperity and development of the fatherland, and the happiness of the people. Our scientists must solve promptly the scientific and technical problems arising in socialist construction and exert all efforts for the development of sciences of our country.

I am convinced that all our scientists and technicians will continue to display earnest patriotic devotion and creative zeal in the scientific research and fulfil with credit the task set by the Party before the domain of science.

I wish sincerely Professor Kim Bong Han and the entire staff of the research group greater success in the honourable scientific research.

Kim Il Sung

February 1, 1962

DECISION NO. 4-a OF THE PEOPLE'S PRIZE CONFERMENT COMMITTEE

February 2, 1962

On Conferment of the People's Prize of the Democratic People's Republic of Korea

The People's Prize Conferment Committee of the Democratic People's Republic of Korea decided to award the People's Prize of the Democratic People's Republic of Korea to Kim Bong Han who has made an outstanding achievement in the study of the substance of Kyungrak.

JUNG JOON TAIK

Chairman of the People's Prize Conferment Committee of the Democratic People's Republic of Korea

LI SE HOON

General Secretary of the People's Prize Conferment Committee of the Democratic People's Republic of Korea

STUDY OF THE SUBSTANCE OF KYUNGRAK
(An Outline)

This paper was read on August 18, 1961 at a scientific conference of the Pyongyang Medical College.

Submitted by
Assistant Professor KIM BONG HAN
Head of the Chair of Physiology, Pyongyang Medical College

FOREWORD

This research work began on the basis of the decision of the Third Congress of the Workers' Party of Korea on inheriting and developing **Dongeuihak** (Oriental medicine), a priceless heritage handed down by our ancestors.

Dongeuihak is a theory originated, examined, and tested by our ancestors in the course of long years' practice of prevention and treatment of diseases.

Dongeuihak which has been cherished from olden times by our people solves remarkably the questions of preventing and treating many diseases which, in fact, modern Western medicine is unable to solve. More, the basic theory of modern Western medicine is inadequately playing the leading role in clinical practice.

Therefore, it is possible to assume that such drawbacks can be made up for through the advance of the existing basic theory of Western medicine as well as the exploration of new spheres.

The modern scientific research in the theory of Dongeuihak, which is an accumulation of rich therapeutic and prophylactic ex-

periences, opens up the great possibilities of exploring a new sphere of medical sciences.

Modern scientific elucidation of the theory of Dongeuihak, therefore, is an indispensable way of inheriting and developing Dongeuihak and a way of bringing radical progress in the medical theory.

There are tendencies among certain scholars of regarding Dongeuihak as a simple experience in treatment or of dissolving it in the theoretical system of Western medicine. But we are opposed to this view. We deem it as the first and foremost task to clarify the material foundation of the basic theory of Dongeuihak more fully by turning to account achievements made by modern sciences.

We carried out our research from such viewpoint.

That the basic concepts of the theory of Dongeuihak have been scarcely grasped by the method of modern natural science creates immeasurable difficulties before the experimental research on the theory of Dongeuihak.

Owing to such situation, the research work by accepted tenets has been almost at a standstill.

In recent years as acupuncture which is amazingly effective has held the particular interest of the medical workers, the study on the bio-electrical nature of **Kyungrak** has been made by many medical workers. They tried to render a modern scientific elucidation to the theory on Kyungrak which is one of the basic theories of Dongeuihak and explains the mechanism of acupuncture. (Cheng Yung-liang, 1958; Lan You-shan, 1958; A. K. Podshibakin, 1956; G. D. Novinski, 1959; Nakaya, 1957.)

We set it our duty, above all, to establish the bio-electrical characteristics of Kyungrak and, on this basis, to discover its substance.

This research work has been conducted by the collective forces of the staff members of the Chair of Physiology, Pyongyang Medical College, and the members of Kyungrak research group of the college research institute. The summary of the research is as follows:

I. BIO-ELECTRICAL RESEARCH INTO KYUNGRAK

According to medical writings at home and abroad it was generally established that the electric resistance of skin in the regions of **Kyunghyul,** as is indicated by the classics of Dongeuihak, is lower than that in other regions than Kyunghyul, and, on this basis, the Kyunghyul detector has been introduced in clinical medicine.

It was also established by Cheng Yung-liang in 1958, by Hsu Feng-yen in 1959 and by A. K. Podshibakin in 1956 that electric potential at the regions of Kyunghyul is higher than that in other regions than Kyunghyul.

We examined such findings, made new findings and began experiments, exploring a new field in this domain.

We used mainly domestic rabbits for our experiments and sometimes dogs, Guinea pigs and frogs. We also made observations in the human bodies.

1. The Method of Electric Induction

We carried on the experiments, continuing the examination into the conditions of electric induction by attaching firmly depolarized zinc or zinc sulfate electrode to the skin. In the case of unipolar induction, depolarized electrode was used as indifferent electrode.

We applied mainly mirror galvanometers with an sensitivity of 10^{-9} A/mm/m and 10^{-12} A/mm/m for experiments.

2. Electric Characteristics of Kyunghyul

A. Direct current resistance in the regions of Kyunghyul

The direct current resistance of skin in the regions of Kyunghyul is about 20,000 to 80,000 ohms and less than that around

Kyunghyul when an electric current of less than 100/μA is used for measurement. The number of ohms varies not only in accordance with the measuring voltage and individual conditions, but the variation becomes greater as the measuring continues even under the more or less same conditions. For example, the variation ranges from 20/μA to as much as 100/μA. Consequently it was not infrequently observed that the electric resistance at the region of **Hyul** grew greater than that in other regions than Kyunghyul.

However, it became clear that this is attended by the active reaction of living body and is largely influenced by the way of measuring when the dynamics of electric resistance of skin are analysed systematically for a long period. What matters in this respect is mainly the time, interval and number of measurings. In case of short measuring with sufficient interval, a stronger electric current flows steadily at the regions of Kyunghyul than in other regions.

These punctures with such electric characteristics are stationary and do not vary.

The distribution of those punctures coincides as a whole with the Kyunghyul distribution outlined in materia medica the **Dongeui-bogam** written in 1610 by Huh Joon, great medical scientist of our country who consummated the theories of his predecessors and developed further their system. But there exist some punctures on **Kyungmaik** outside the regions of Kyunghyul as was shown in the classic writings. For instance, it has been established that there exists another puncture between **Sangyang** and **Igan** punctures on **Sooyangmyung Daijanggyung.**

B. Electric potential of the regions of Kyunghyul

It has been confirmed that the electric potential at the regions of Kyunghyul is higher than that in its surroundings and fluctuates to some extent.

The fluctuation of potential appears in a group of regular waves. One cycle of wave is 3-6 seconds and its altitude is about 0.1 mv. Such wave repeats 5 to 7 times to form a group of waves and there are periods almost without the fluctuation of electrical potential between wave groups. (See Fig. 1)

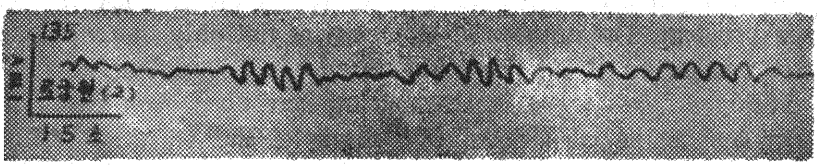


Fig. 1: Electric induction at Kyunghyul (Rokoonghyul)

The stationary period usually lasts 15 to 30 seconds, but there are cases in which it is missing altogether or, conversely, there are cases in which the period lasts longer.

The bio-electric induction in other regions than Kyunghyul presents no such characteristics and shows that the fluctuation of potential is feeble and irregular. (See Fig. 2)

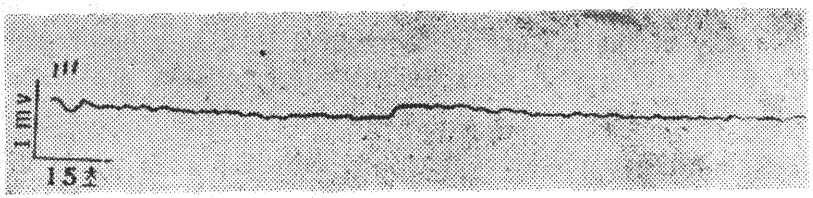


Fig. 2: Electrogram inducted from other regions than Kyunghyul separated by one cm to the backbone from Rokoonghyul

Not typical and feeble as it is, the fluctuation of potential similar to that in the regions of Kyunghyul is often observed near the regions of Kyunghyul.

The above-mentioned bio-electric characteristics are basically the same both in the human bodies, domestic rabbits as well as in baby rabbits less than 24 hours old.

That the potential in the regions of Kyunghyul reflects various processes of functions of living bodies was reported by Hsu Feng-yen in 1959. Li Ping-hsiang in 1959, V. G. Bogralik in 1959 and A. K. Podshibakin in 1956.

Through experiments we not only confirmed that there is a fluctuation of potential at Kyunghyul, but also that the process of fluctuation is one of movement which has definite relations with the functions of living bodies. The bio-electrogram of Kyungrak shows a wide range of variations in normal physiological processes

and these variations are related with the processes of various functions of the living body, such as movement, eating, etc.

Hereupon, it is necessary to systematically uncover the physiological significance of the bio-electric characteristics of Kyunghyul.

3. Physiological Significance of Electric Characteristic of Kyunghyul

In the classical theory of Dongeuihak (Oriental Medicine) many important physiological functions are attached to Kyungrak. For one thing, it was regarded that Kyungrak interconnected all organs and tissues and ensured the unity of living bodies. And with such interconnections it gave an explanation to the mechanism of acupuncture.

It has been considered that a stimulus given by a needle to Kyunghyul transmitted a certain influence on internal organs via Kyungmaik and the reaction of internal organs, in turn, was reflected in all Kyunghyul through Kyungmaik.

In order to confirm such view through experiments, we, first of all, analysed relations between the intestinal movement and electrogram induced from **Joksamri,** the Kyunghyul of **Jokyangmyung Wikyung,** to determine whether or not the functions of internal organs reflect themselves in the electro-biological nature of Kyunghyul.

A. K. Podshibakin and Shih Chih-hua who dealt with this question affirmed in 1956 and 1959 respectively that the activities of digestive organs are reflected in the bio-electric changes of Kyunghyul.

Hsu Feng-yen reported in 1959 that the emotional conditions were reflected in the changes of electric potential at Kyunghyul.

For instance, we could observe in rabbits the wave of electrogram radically grow several seconds after the rise of movement of the large intestines. (See Fig. 3)

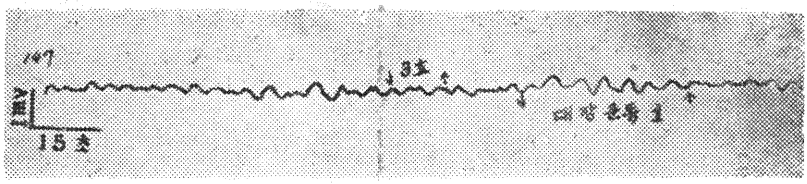


Fig. 3: Electrogram inducted from Kyunghyul after the rise of movement of large intestines

The functions of movement of the stomach are also reflected in Joksamri Kyunghyul.

Contrary to this, when a stimulus is given to **Joksamrihyul** by a needle, a change is observed in the electrogram induced from Kyungrak and after 50-70 seconds a rise is noticed in the movement of large intestines.

The activity and general state of internal organs (for instance, eating and movement) are reflected not only in the change of electrical potential at Kyunghyul but also in the change of its resistance to electricity.

The electrical changes at Kyunghyul show the active reaction of Kyunghyul and this reaction changes in law-governed interrelation according to a certain change of functions of the internal organs and it also changes according to the stimulus given directly to Kyunghyul, from within or from without living bodies, for instance, the stimulus by the needle or heat. The intestinal activity and the reaction of Kyunghyul influence each other.

Although it was clear that there was a material foundation exerting such mutual influence, the question as to whether this connection, as was indicated by the theory of Dongeuihak, is really Kyungmaik or not, that is, whether Kyungrak has the function of conductive relation, needed substantiation by experiment.

4. Conductivity of Kyungmaik

A. The punctures with the above-mentioned electric characteristics are located fixed in the form of line just as Kyunghyul arranged on the Kyungmaik in the human body.

When weak electric current is applied to a reactive point on the line the electric activity of the adjoining reactive points on the line rises.

The nearer the reactive point to the stimulating point, the faster and stronger the change, and the farther the reactive point from the stimulating point, the slower and weaker the change.

These facts prove that a definite influence is gradually transmitted along this line. This influence not only raises the electric activity at each reactive point but checks it.

B. In the human body, too, the influence of the stimulus caused by a needle or heat on a Kyunghyul is transmitted to other Kyunghyul on the same Kyungmaik and causes a change in electric potential. For example, when a stimulus is given to the region of **Haryumhyul,** a change occurs on the electrogram of Kyungrak induced at the **Soosamri.** (See Fig. 4)

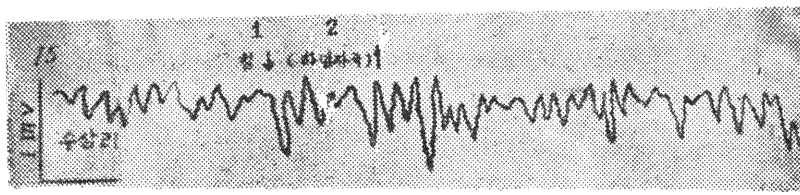


Fig. 4: Electrogram of Kyungrak inducted at Soosamrihyul
1. Needle
2. A stimulus given to Haryum

The bio-electrical characteristics of Kyunghyul differ from those of the nervous system, its transmission speed is far slower than that of the nerve, and its transmission course coincides with the running course of Kyungmaik indicated in the classics, differing from the distribution of nerves and blood vessels.

The links between Kyunghyul or between internal organs and Kyunghyul are established through the transmission course along the Kyungmaik, and the material substance of Kyungmaik performing such transmission is a connection system independent of the nervous and blood systems.

The question of activities of all living bodies should be observed in the unity of functions and forms.

Here, the task of actively exploring the substance of Kyungrak necessarily arises.

II. SUBSTANCE OF KYUNGRAK

As for the substance of Kyungrak, many scholars deny its objective existence and regard all phenomena, which have been explained as Kyungrak in the classics of Dongeuihak, as a simple process taking place through the neuro-reflective or neuro-humoral connection, passing off the Kyungrak theory as a fantastic one.

They try to explain the mechanism of acupuncture from such a point of view and regard the region of Kyunghyul as a mere puncture which only slightly differs from other regions in the distribution of nerves and blood vessels.

A. K. Podshibakin (1956) regards Kyunghyul as nerves or the same puncture as that formed by bundles of nerves and blood-vessels coming out to the skin.

When one observes Kyungrak only in the framework of the accepted concepts of modern physiology, he is destined to reach such wrong conclusion.

As mentioned above, the results of experiments do not accord with the views denying the objective existence of Kyungrak but on the contrary affirm the objective existence of the structures, i.e., the substance of Kyungrak.

a) Form of Kyunghyul

We succeeded in correctly discovering Kyunghyul by the method we ourselves initiated and found out that its distribution tallies in the main with the distribution of Kyunghyul indicated in the classics and that some of the Kyunghyul is located in the hitherto unknown regions.

Here is the morphological nature of Kyunghyul we discovered.

Kyunghyul is found beneath the epidermis. It is a small, oval structure tender and clearly distinguished from the adjacent tissues. (See Fig. 5)

This structure is surrounded by many blood capillaries. Its size and form are different according to each Kyunghyul. For instance, a number of structures are gathered in **Joksamri** and **Hapkokhyul**.

b) Form of Kyungmaik

The newly discovered structure around Kyungmaik which links one Kyunghyul with another has the following morphological characteristics: It consists of clusters of thin tubular structures. (See Figs. 6, 7, 8)

The cross-section of the tubular structure is round or oval. The diametre of the tubular structure of Kyungmaik ranges between 20 and 50 microns. Its wall is made up of a very thin membrane and its content is colourless and transparent and it does not contain blood-cell or other concrete elements. Each tubular structure of Kyungmaik is wrapped by connective tissues and Kyungmaik itself is also wrapped by connective tissues. The tubular structure of Kyungmaik branches off from Kyungmaik and reaches Kyunghyul. Each Kyunghyul is linked with several tubular structures of Kyungmaik. The thickness of tubular structures of Kyungmaik is almost the same along its entire length.

Kyungmaik is soft but the content compact.

Kyungmaik is accompanied by blood-vessels, and capillaries are more densely distributed there than in other tissues.

No Schwann's cell is found in the tubular structures of Kyungmaik and their diametre is, in general, larger than the axon cylinder of the nerve. All other morphological nature also differs from the lymphatic vessels in the pattern of distribution and in the histology and does not enter the regional lymph node and no lymphocyte is to be seen within the tubular structures either in the proximal or distal parts from the regional lymph node.

It has also been established through experimental-medical research that the tubular structures appear different from the lymphatic vessels.

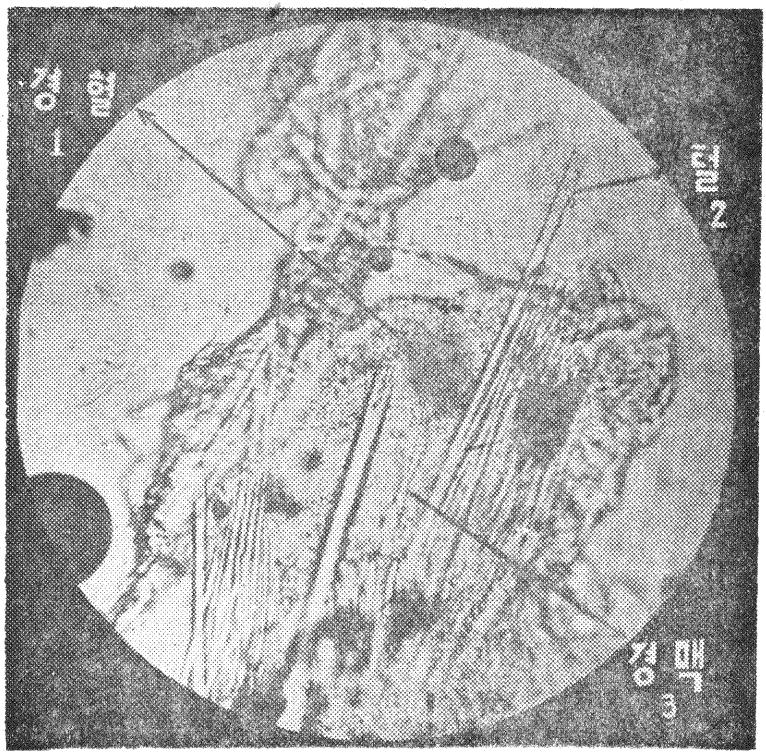
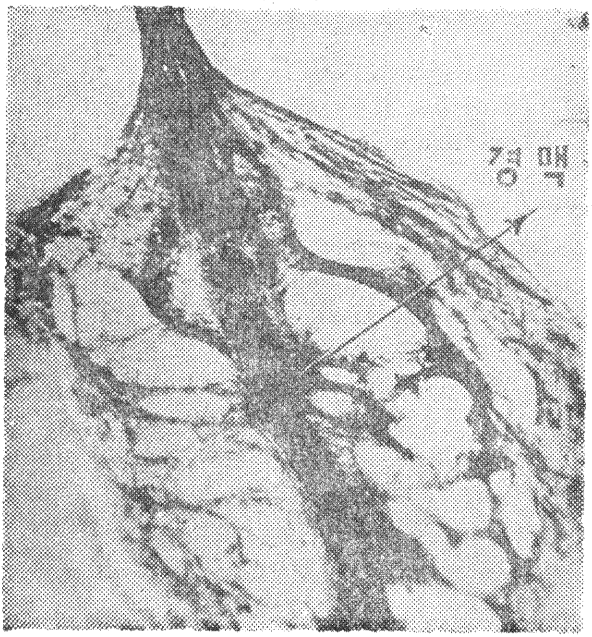


Fig. 5: Kyunghyul and Kyungmaik connected with Kyunghyul
1. Kyunghyul 2. Hair 3. Kyungmaik

Fig. 6: Kyungmaik



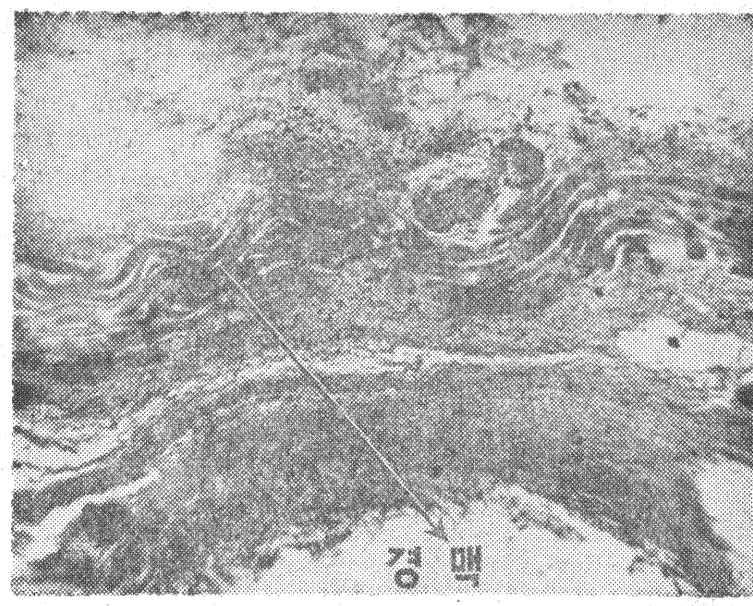
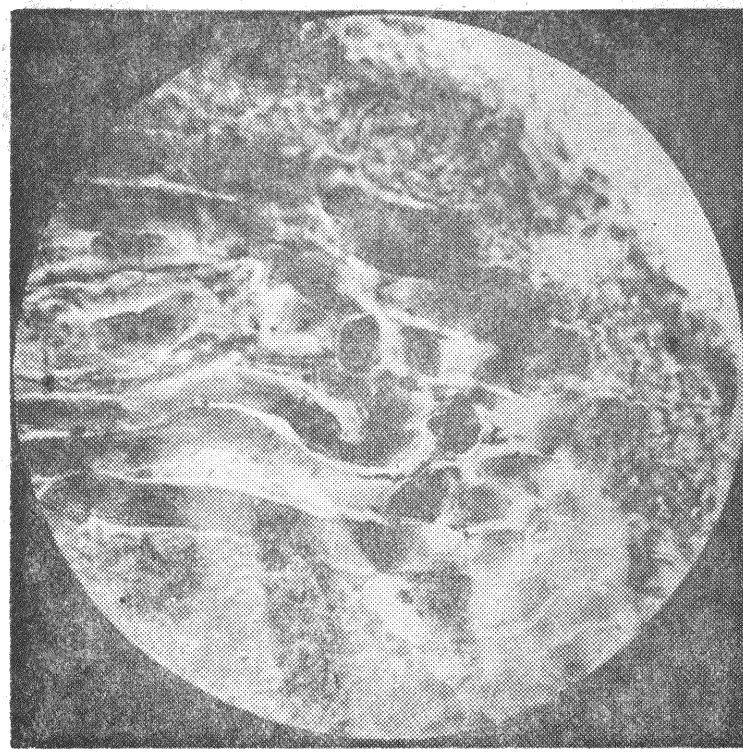


Fig. 7: Forms of Kyungmaik (Slightly magnified)
Fig. 8: Forms of Kyungmaik (Magnified)



It has been confirmed through our histological and experimental-physiological study that Kyungmaik clearly differs from the nerve, blood vessels and lymphatic vessels in its structure, distribution and in other natures.

c) Functions of Kyunghyul and Kyungmaik

The bio-electrical character of Kyunghyul is the same as indicated in the electrogram of Kyunghyul induced on the surface of the skin.

The activity of internal organs is reflected in the bio-electrical change of Kyunghyul and the stimulation of a given Kyunghyul leads to a change in the electrical activity of Kyunghyul and is eventually reflected in the function of internal organs.

At the same time a stimulus given to Kyunghyul on one Kyungmaik brings about changes in the electrical activity of other Kyunghyul on the same Kyungmaik. (See Fig. 9)

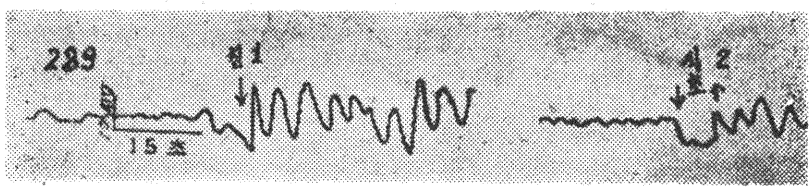


Fig. 9: Electrogram of Kyungrak inducted from a Kyunghyul on the Kyungmaik of the lower extremities when other Kyunghyul of the same Kyungmaik is stimulated by a needle or by a solution of 3% vinegar
1. A stimulus given by a needle
2. A stimulus given by a solution of vinegar

The change of the electric potential induced from Kyunghyul is larger than that induced from the surface of the skin above the Kyunghyul. This is understood to mean that the change of the voltage at Kyunghyul occurs faintly on the surface of the skin, being shunted by the surrounding tissues.

The bio-electrical and functional features as in Kyunghyul are not noted in the tissues around Kyunghyul. For instance, if the Joksamrihyul is stimulated the movement of the colon gains momentum, but when the surrounding tissues are stimulated such phenomenon does not occur. When Kyungmaik is cut the influence is interrupted between two Kyunghyul and between Kyunghyul and

the colon. Only Kyungmaik makes it possible to transmit such influence, and the speed of its transmission is the same as that on the surface of the skin.

From the foregoing, it can be confirmed that Kyunghyul and Kyungmaik, newly discovered, are the substance of Kyungrak described in Dongeuihak judging from the effect of the acupunctural stimulation, conductivity, and bio-electrical features.

III. CONCLUSION

We have discovered the substance of Kyunghyul and Kyungmaik by the method we devised.

1) The distribution of Kyunghyul nearly accords with that described in the classics. And it has been confirmed that some of it exist in new regions.

2) Kyungmaik consists of bundles of tubular structures and it is clearly distinguishable from nervous, blood vessel and lymph systems in histological and experimental-biological characters.

3) Substance of Kyungrak constitutes the hitherto unknown anatomical and histological system.

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DISCOVERY OF THE SUBSTANCE OF KYUNGRAK —GREAT CONTRIBUTION TO MEDICINE AND BIOLOGY

Professor Hong Hak Keun

M.D., President of the Academy of Medical Science

Recently the biologists of our country discovered the substance of Kyungrak. This is a great event in modern biological and medical world.

As is known to all, so far modern biology has recognized only two regulation systems—nervous and blood-vessel systems—in living bodies. Accordingly all the changes arising in physiological connections in living bodies have been explained by these two systems. Clinical practice has also been based on such theory.

However, reality shows that the basic theories of modern biology and medicine have been unable to solve many questions posed by prophylactics and theraphy. Moreover, there are instances of many chronic cases which the Western medicine was unable to cure being treated successfully by Dongeuihak.

This has caused much controversy among scholars.

Some regarded Dongeuihak as a simple experience in treatment or as an hypothesis of ancient scholars.

As for Kyungrak which occupies an important place in Dongeuihak, certain scholars attempted to explain it in the framework of the Western medicine, insisting that the treatment of diseases by acupuncture based on the Kyungrak theory is nothing but stimulus given to the nerves.

But the Dongeuihak scholars contended that diseases are treated because Kihyul is made to circulate by a needle. However, until now the needle theory has not been studied carefully, nor a scientific

explanation given to it. Nor has any material validity been presented. Especially the problem of the substance of Kyungrak, core of the Dongeuihak theory, its role and form of existence remained unsettled.

The problem of the substance of Kyungrak, a question of great controversy both in the Eastern and Western medical worlds, has been solved at last by Professor Kim Bong Han and his associates. They have proved on the basis of the Dongeuihak theory that the substance of Kyungrak is another system in living bodies so far unknown. More, they have explained the structure, form and functions of Kyungrak in a scientific way.

Professor Kim Bong Han wrote in detail on the substance of Kyungrak in his theses, "Electric Changes in Kyunghyul" (in December 1960) and "Study on the Substance of Kyungrak" (in August 1961).

Professor Kim Bong Han and his associates have proved not only the substance of Kyungrak, but also the fact that the functions of living bodies are also controlled by the Kyungrak system.

Indeed this is a great discovery in modern biology and medicine. It has put the Kyungrak theory of Dongeuihak which enjoys a long history in our country on a firm scientific and material ground. Moreover, it has opened a broad avenue for exploring and developing other fields of Dongeuihak along the line of modern science. At the same time, the theory on the substance of Kyungrak will facilitate re-examination of the theoretical system of modern biology and medicine and the practice accepted hitherto. More, it will throw new light on many questions.

Metabolism and all other vital phenomena, correlation between external conditions and living organs, contract, development and cure of diseases will be re-examined from a new angle. The limitations of "nervism" predominant in modern medicine and biology, and the theories on cortics viscera and neuro-humor based on nervism will be supplemented by the new theory of Kyungrak.

The theory on the Kyungrak system will be able to solve many practical problems urgently needed for the promotion of health and development of medicine. New preventive and therapeutic ways against gastric and duodenal ulcers, hypertension, infectious

diseases and various other diseases will be adopted and scientific explanation will be possible for longevity.

This theory will pose many new problems not only before biology and medicine but before epistemology and psychology.

The discovery of Kyungrak which will greatly enrich science did not come of itself.

There were sharp clashes with some scholars who held that the theoretical system of Dongeuihak was unscientific or who attempted to adjust it in the accepted system of the Western medicine. But Professor Kim Bong Han and his associates regarded Dongeuihak as science with a fine theoretical system and held firm conviction in their belief.

Professor Kim Bong Han has spent nearly 20 years in the study of biology. To be sure, he met with many knotty problems in these years. Many a time he experienced irreconcilability between the Western medicine and Dongeuihak. But as is the case with many other scholars, he too pursued his research in Western medicine, which failed to provide him with proper answers on many occasions.

It was around that time, the Third Congress of the Workers' Party of Korea opened in April 1956. In his report to the Congress Premier Kim Il Sung called on the country's scientists to establish national identity in science. Specifically, he asked for inheriting and developing Dongeuihak. And Premier Kim Il Sung's words marked a turning point in Professor Kim Bong Han's work.

He came to the conclusion that for the development of medical theory it was indispensable to find a modern scientific elucidation of the theory of Dongeuihak and that that would mean inheriting and developing Dongeuihak.

Thus he started to explore a new field urgently needed for removing drawbacks in modern biology and medicine.

Professor Kim Bong Han studied the classics of Dongeuihak including materia medica the Dongeuibogam written in 1610 by Huh Joon, Korea's great medical scientist, and compendium of acupuncture and moxacautery the Chimgoo Kyunghumbang written in 1644 by Huh Im. In the course of this study he reached the conclusion that the study of Dongeuihak should begin with the study of the Kyungrak theory, the basic theory of Dongeuihak.

On the substance of Kyungrak many scholars denied its existence and regarded all phenomena, which the classics of Dongeuihak explained as Kyungrak, as simple processes of neuro-reflective or neuro-humoral connections.

They were unable to give a correct explanation of the mechanism of acupuncture. They held that what was regarded as the Kyunghyul region was simply a puncture slightly different from other regions in the distribution of nerves and blood vessels. Consequently, it was impossible for one to solve the problem of substance of Kyungrak, if he observes Dongeuihak only in the framework of the accepted concepts of the Western medicine.

Professor Kim Bong Han felt that he must study Dongeuihak by a new method, bold as it was, divorced from the accepted theoretical system and method. He and the Kyungrak research group studied the classics of Dongeuihak, while further elaborating the study of modern biology and medicine.

Professor Kim Bong Han based himself firmly on the principles of dialectic method, the only correct method in scientific research. In the end he succeeded in discovering the substance of Kyungrak.

Such success is quite unthinkable apart from the Party's correct policy on science and the warm care the Party has directed to bringing up Red scientists.

The correct policy of the Party on creatively assimilating and introducing the successes scored by modern science and on inheriting and developing the centuries-old scientific and cultural heritages of our country has been one of the most important factors in the rapid development of our science and in its great attainment.

The great discovery of the substance of Kyungrak owes much to the Party's correct policy, its guidance and its material and spiritual help. This is all the more evident when the reality of South Korea under U.S. occupation is taken into account. The military fascist clique under the manipulation of U.S. imperialism are disseminating cosmopolitan ideas and national nihilism among the South Korean people. They are out to hinder scientific development and obliterate our priceless national heritages.

Recently the U.S. imperialists and their stooges prohibited the Dongeuihak physicians from practising and closed down the

educational organs of Dongeuihak. According to them, the "Oriental medicine is more injurious than beneficial to the health of the nation and Oriental physicians cause only harm to patients."

This clearly shows that the great discovery of the substance of Kyungrak by Professor Kim Bong Han and his associates has been possible only under the socialist system and under the correct policy and well-advised leadership of the Workers' Party of Korea.

The discovery of the substance of Kyungrak not only makes a great contribution to the scientific world by solving one of the most fundamental questions in biology and medicine but reveals the outstanding scientific originality of the Korean people to the world.

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