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GENERAL DISCUSSION ON ACUPUNCTURE-MOXIBUSTION THERAPY

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## GENERAL DISCUSSION ON ACUPUNCTURE-MOXIBUSTION THERAPY

Following is a translation of an article by the Research Institutes of Chinese Traditional Medicine, in Ch'ing-chu Chien-kuo Shih-chou-nien I-hsueh K'o-hsueh Ch'eng-chiu Lun-wen Chi, Volume 1, Peiping, 1959, pp 365-380.

Acupuncture-moxibustion is an important part of our nation's medical study, and has a history of several thousand years. It has been improved and developed through a long course of clinical practice. From the primitive stone probes (the most ancient acupuncture tool, which was a type of sharp-pointed stone implement) it has developed to the use of a metal needle of various forms. From the most simple techniques it has developed into a method employing diverse and manifold techniques, from the treatment of a small number of diseases to treatment for many kinds of diseases, and from general clinical experiences into a systematic theoretical body of knowledge. In this way, acupuncture-moxibustion has become an important field of study in our national medicine. More than two thousand years ago in the Yellow Emperor's Canon on Internal Medicine (Huang-ti Nei-ching) there were rather systematic records concerning the theory and clinical use of acupuncture-moxibustion, and in later historical periods these were developed and supplemented. Although up until the later years of the Manchu Period there were only three or four hundred books devoted solely to acupuncture-moxibustion, there were also many more references to it included in other medical works. Although a large part of these writings have been lost, more than 90 works on acupuncture-moxibustion have survived to present times.

The peculiarities of acupuncture-moxibustion treatment are its broad scope, its simplicity of technique, and its low cost. Therefore, not only has it met with the acceptance of the masses of China, but has come to be regarded with respect internationally. It was transmitted to Japan in the sixth century, to Europe in the 17th century, and at present has spread to more than 30 countries of the world.

This precious heritage was left undeveloped in the old semi-feudal, semi-colonial China. It was not until after the establishment of the Chinese Peoples Republic, that, through the respect and concern of the Communist Party and the Peoples Government, it began to be developed. Medical circles have risen to the study and practice (hsueh-hsi) of acupuncture-moxibustion in a great tide, with research work being conducted throughout the nation. Many groups are currently engaged in theoretical research. This new state of affairs can also be seen from the statistics that follow. In the period of the Old China from 1912 to 1948, in 43

journals of Chinese and Western medicine, only 294 articles on acupuncture-moxibustion were published, while since the establishment of the New China the number of articles published on the subject through July, 1959, even on the basis of incomplete statistics, total 2,603. This is approximately 8.8 times the output during the Old China period. These articles, whether viewed from the viewpoint of quantity or quality, far exceed the level prior to the Liberation. These are affirmative accomplishments. We shall introduce these accomplishments below. However, since our accumulation of data can not keep pace with the developments of the objective situation, the accomplishments presented in this article can but be a part of the whole.

### I. The Rich and Varied Techniques of Acupuncture-Moxibustion

Generally speaking, acupuncture-moxibustion may be divided into two categories, that of acupuncture treatment, and that of moxibustion treatment. However, in actual clinical practice, because of the dissimilar techniques and implements utilized, there are actually many and varied techniques. In speaking of acupuncture, even the Yellow Emperor's Canon on Internal Medicine mentions the "nine needles (chiu-chen)" (nine needles of different shapes and nine different sites of use), and more than 30 puncture techniques. In speaking of moxibustion, moxa-torch cauterization technique was in wide use more than 2,000 years ago. Later, the Great Monad (T'ai-i) acupuncture technique and various other moxibustion techniques were developed.

Since the establishment of the New China, not only have those in our medical circles accepted the precious heritage of acupuncture-moxibustion techniques left to them by their predecessors, but have delved into the traditional experiences among the people, and studied the accomplishments of foreign research. On this basis, they have advanced their research, developing the original techniques and creating a number of new techniques. These rich and varied techniques of acupuncture-moxibustion have had a great effect in the elevation of the clinical effectiveness of treatment. Below, we shall present a simple introduction to some of the commonly used techniques.

#### 1. Hao-chen (毫針) Puncture Technique:

This is a widespread technique that has been handed down from ancient times. The implement used is a slender hao-chen of 0.5-4.5 ts'un in length, and now are mostly made of steel or alloys (silver and copper, gold and copper). Clinically, the straight stab, oblique stab, shallow stab, deep stab, quick stab, slow stab, and various other techniques are used. This technique is recorded in common acupuncture-moxibustion texts, and we will not describe it further.

#### 2. Blood-letting (放血) Puncture Technique (Fang-hsueh Chen-fa):

This is a method in which blood is released by means of puncture at certain acupuncture sites or along principal channels (ching-mai). In the Canon of Internal Medicine this was called "lo-tz'u"<sup>1</sup> or "tz'u-hsueh-lo"<sup>2</sup> (刺血) [Both terms means to pierce blood vessels.] A triangular needle is generally used for releasing blood. In piercing the fingers or

tips of the toes, a circular needle (yuan-li-chen) may be used. In general, this technique is used in first aid, relieving fever, and in treating acute and chronic inflammations, and congestive inflammations.

### 3. The Skin Needle (皮膚) Puncture Technique (P'i-fu Chen-fa):

This is a technique in which the outer surface of the skin is superficially pierced. In the Canon of Internal Medicine it was called "pan-tz'u" or "mao-tzu"<sup>3</sup>. In current use, some use a single hao-chen to superficially pierce the skin, while others use five to seven steel needles bound together and attached to a wooden mallet to tap the skin. The latter is sometimes called the mei-hua-chen, or ch'i-hsing-chen. The technique is simple and easy to master, and has a broad scope of treatment. According to the report by the Acupuncture Neurotherapy Laboratory of the Research Institutes of Chinese Traditional Medicine (See footnotes 4, 5, & 6), this technique is effective for hypertension, bronchial asthma, rheumatism, neurasthenia, menstrual irregularity, infantile paralysis, eczema, and neurodermatitis.

### 4. Chen-t'iao (針挑) Technique:

This is a method prevalently used by the people. It consists of treating a disease by using a needle to break the skin in definite parts of the body, to tease out a few fibers from below the skin. According to a report from the Acupuncture-Moxibustion Department of the Kao-yao Hsien Peoples Hospital<sup>7</sup>, this method has been used in the treatment of 274 cases of internal and sensory maladies with varying degrees of effectiveness attained in 239 cases. The "chieh-ken-fa" ("sever the root method") used in treating lymph gland tuberculosis is a form of the chen-t'iao technique. After disinfecting the selected dorsal acupuncture site, a 5% novocaine anesthetic is used. After this, a triangular needle is inserted to a depth of 3 to 5 mm. The point of the needle is used to make three to five cuts in the region of the perimysium, and then lifted out. Court-plaster (hsiang-p'i-kao) is applied to the site to prevent infection.

### 5. Subcutaneous Retention of Needle (皮下留針法) (P'i-hsia liu-chen-fa):

This is a method developed by the Acupuncture-Moxibustion Research Laboratory of the Research Institutes of Chinese Traditional Medicine on the basis of the hao-chen technique. The method is as follows: use a rather thin but not easily breakable hao-chen, to pierce the acupuncture site. After the operation has produced its special reactions, raise the needle until it is under the skin, and then with the needle parallel to the skin, insert it to a depth of two to five fen, and affix the needle-handle with court-plaster. The needle is inserted in a direction which would not affect movement. The needle is allowed to remain in position from three to five days to one to two weeks. During this period, periodic examinations should be made. As seen from observations, this method is effective in head-ache, neurasthenia, rheumatic arthritis, bronchial asthma, and other such chronic diseases.

### 6. Fire Needle (火針) Technique (Huo-chen-fa):

In this method a red-hot needle is used to pierce the tissues. In ancient times it was known as "shao-chen (燒針)", "fan-chen (燔針)", or "ts'ui-chen (燄針)". There are three dissimilar ways of carrying

out this operation. In one, a single needle is used. The needle is heated red-hot above an alcohol flame, then introduced to the tissue. This method is markedly effective in treating the swelling of filarial elephantiasis [橡皮腫] 17, and is also of definite effectiveness in lymph gland tuberculosis. The second is a single needle shallow stab technique. A handle is attached to the needle, the needle grasped by the handle and tapped upon the skin. This is very effective in joint and muscle rheumatism. The third is a shallow stab method using a cluster of needles. Three to nine steel needles are bound together, and after being heated red-hot, are used to superficially pierce the skin. This method is used principally in treating locomotor organ illnesses and ringworm.

#### 7. Water Needle (水針) Method (Shui-chen-fa):

This treatment was developed by our medical workers in recent years on the basis of an original acupuncture-moxibustion method. A syringe is used to pierce the acupuncture site or other predetermined locations, and after waiting for the special reactions produced by the hao-chen technique to occur, a small quantity of drug is injected. This serves to combine acupuncture and drug therapy. The sites and drugs selected depend upon the disease. According to reports from various parts of the country, the injection fluids already tried include aseptic distilled water, Ringer's solution, novocaine, procaine-alcohol solution, vitamin B<sub>12</sub>, Magnesium sulphate, caffeine, penicillin, streptomycin, aminobenzoate, ma-huang [Ephedra sinica Stapf.] substance, and placental blood. The Shensi Acupuncture-Moxibustion Research Laboratory Division of the Chinese Academy of Medical Sciences have treated 435 cases involving 54 different diseases using this method, achieving varying degrees of effectiveness in 377 cases.<sup>8</sup> Among the maladies in which it has been seen to be markedly effective are peripheral swelling of the tonsils, acute tonsillitis, and acute and critical appendicitis.

#### 8. Electric Needle (電針) Method (Tien-chen-fa):

This is a method in which a weak induced or direct current is passed through a hao-chen. The scope of this method is very broad, and is effective in neuralgia, neuroparalysis, psychosis, neurosis, gastro-intestinal diseases, rheumatism, and skin diseases. In some units the use of electric needle induced anesthesia has met with preliminary success.

#### 9. Ear Needle (耳針) Method (Erh-chen-fa):

This is a method for treating various diseases by puncture of the ear. In The Canon of Internal Medicine it is said: "The blood and vital spirit (ch'i) of the 12 channels and 365 vessels rise from the surface and go to the empty spaces...the remaining vital spirit goes to the ears for the purpose of hearing"<sup>9</sup> This explains that the ears are intimately related to the channels and vessels of the entire body. Acupuncture of certain ear spots was in wide use among the people from early times as a means of treating eye diseases, acute tonsillitis, and tooth-ache.<sup>10</sup> The French doctor, P. Nogier, engaged in systematic research on ear acupuncture, determined the reactive regions and points on the external ears of a number of people, and treated many diseases. In order to exchange experiences, this data was first published in our medical journals in December, 1958.<sup>11</sup> According to a report by the Shanghai Municipal First Peoples Hospital,<sup>12</sup>

this method was used in treating 800 cases of various diseases, and was effective in all types of neuralgia, pains of wounds, pain resulting from inflammatory diseases, all types of intestinal pain, and bronchial asthma. Moreover, effective supplementary sites were added on the basis of Nogier's "ear map", and a retention needle (liu-chen) adapted to the ear was constructed. According to the report, this method still presents a number of problems, such as semi-reactive points not in accord with the determined regions. This awaits further research.

10. Finger Method (指針法) (Chih-chen-fa):

This is a method in which finger pressure or cutting with the finger-nail is used in place of needle piercing. This method is very wide spread among the people, and its use is recorded in many ancient medical works. Its special points are its convenience, and the fact that it is not feared by the patient. It is commonly used to stop pain and for first aid in fainting. According to a report by the Sian City Red-Cross Hospital<sup>13</sup>, it is effective for infantile diarrhea.

11. Warm Moxa Torch Cauterization Method (溫熱艾性灸法) (Wen-jo Ai-chu Chiu-fa):

Moxa punk is made up in the form of a round awl shaped moxa torch, and placed on the acupuncture site. The pointed end is lit, and it is gradually allowed to burn downwards. This type is called the moxa torch cauterization method (ai-chu chiu-fa). There are two types. In one the moxa torch is placed directly on the skin as moxibustion is carried out, and is called the skin cauterization method. (chao-fu-fa). In the other, some material is used to separate the moxa torch from the skin, and is called separated cauterization (ko-wu-fa). The most commonly used materials for the separation method are ginger and garlic. Of the moxa torch moxibustion techniques in current use, most of them do not go the extreme of burning the skin, but only bring about a certain degree of heat on the skin (approximately 50-60 degrees Fahrenheit). This method is suitable for abdominal pain, diarrhea, rheumatism, and neuroparalysis.

12. The Burning Moxa Torch Method (燒艾性灸法) (Shao-cho ai-chu chiu-fa):

This is a method in which the skin is burned during moxa torch cauterization. If the burn is mild, it will result only in being blistered, and is known as blister moxibustion (fa-p'ao-fa). It is effective in treating lymph gland tuberculosis when used on the back. If the burn is severe, puss will form following moxibustion, and finally a scar will be left. This is called purulent moxibustion (nung-chiu-fa) or scar moxibustion (pan-hen-fa). It has been effective in treating hypertension<sup>14</sup>, liver and spleen enlargement in schistosomiasis, bronchial asthma, and gastric ulcer.<sup>15</sup> The Hsiung-yueh Tuberculosis Hospital in Anshan City used this method in effectively treating 49 cases of corns, with 29 cases cured in one treatment, 15 in two treatments, and five in three treatments.

13. Moxa Roll Cauterization (艾卷灸法) (Ai-chuan Chiu-fa):

This is a method in which paper is used to wrap moxa punk into a finger sized moxa roll and is burnt on the acupuncture site. The technique is simple, and is suitable in the same diseases as is warm moxa cauterization method which has been handed down from ancient times in which various

drugs are inserted into the moxa roll. The form of the technique is similar to acupuncture -- a few layers of paper being spread above the acupuncture site, and the burning moxa roll and the separating paper is pressed on to the acupuncture site. Therefore, this method has been known as the "lightening acupuncture (lei-huo chen-fa)" or the "Great Monad Acupuncture (t'ai-i chen-fa)".

14. Warm Tube Cauterization (溫筒灸法) (Wen-t'ung-chiu-fa):

In this, a special warm cauterization implement in which moxa punk is placed is used. (Drugs may also be added to the moxa punk). After lighting it, it is placed on the body to carry on cauterization. This is a type of warm (wen-jo) cauterization method adaptable for general use.

15. Moxibustion Baking (灸烙法) (Chiu-k'ao-fa):

This is a popular method for treating tetanus which is prevalent. A small hole about one centimeter in diameter is chiseled in one end of a chicken egg, and the yoke and white of the egg removed. She-hsiang [Moschiferens, L.], yu-chen-san [Arisaema japonicum Bl. ?] is put into the egg, (Prescription is in the Chinese Journal of Surgery, No.12, 1958) filling the inner portion of the egg shell. After this, the end with the hole in it is placed so as to cover the wound, using court-plaster to affix it closely to the surface. The egg shell is painted with sesame oil, and baked with a sesame oil lamp to the point where the patient's entire body perspires.

16. Ultraviolet Radiation of Acupuncture Sites (穴位紫外線照射法):

The Shanghai Municipal 6th Hospital has used this method in treating 159 cases of bronchial asthma with varying degrees of effectiveness achieved in 152 cases.

In addition to these 16 types of Acupuncture-moxibustion techniques, there is the skin needle method (p'i-fu chen-fa), the aristate-needle-method (mang-chen-fa), and the needle-handle cauterization method (chen-ping-chiu-fa), electro-thermal cauterization (tien-je-chiu-fa), acupuncture-ion-penetration (chen-tzu-yu-tzu-t'ou-ju-fa) and other valuable acupuncture-moxibustion techniques prevalent among the people that await further development.

## II. Clinical Accomplishments with Acupuncture-Moxibustion

In the Old China, although there were many Chinese doctors engaged in clinical acupuncture-moxibustion work, they were in private practice, hence the conditions were not amenable for research. After the Liberation, it was a different situation. Chinese Medicine began to engage in all phases of medical work, and with the alliance of Chinese and Western medicine, many medical research organizations and large hospitals began acupuncture-moxibustion treatment, diagnosing and observing with modern scientific equipment and methods. In this way, the therapeutic efficacy of acupuncture-moxibustion was more objectively proved, and its therapeutic principles progressively mastered, thus broadening its scope. As seen from recently published data, it has been effective in more than 200 diseases, being especially so in 60 of these diseases. It can be expected

that the scope of acupuncture-moxibustion treatment will be broadened following further research. Below, we shall introduce separately its accomplishments in various clinical branches of medicine.

#### 1. Neuropsychiatric Diseases:

Acupuncture-moxibustion has been definitely effective in headache, migraine headache, all types of neuralgias, peripheral nerve paralysis, after-effects of apoplexy, chorea, neurasthenia, and mental disorders (I-ping).

Acupuncture-moxibustion has been quite outstanding in effective treatment of neuralgia. In recent years, observations on the treatment of many cases of occipital neuralgia, trigeminal neuralgia, intercostal neuralgia, and ischialgia. Taking ischialgia as an example, according to the reports by the 4th Unit of the Research Institutes of Chinese Traditional Medicine Hospital Annex, 17, 18, 19, 20 in all 571 cases were observed, aside from 15 cases in which the results were not clear, 254 (45.7%) were cured, 285 (51.2%) were improved, and 17 (3.1%) were unaffected. These cases were, for the most part, the results of cold (34%) and rheumatism (33.3%). A minority resulted from wounds (16.1%). There were also some in which the etiology was not clear or were caused by other factors such as tumor, pelvic inflammation, and so on (16.6%). According to the analysis, treatment was not clearly effective in cases resulting from tumor and intervertebral disc dislocation. As seen from the nature of the disease, treatment was highly effective in cases where the course of the disease had been short and had broken out rapidly. The course of treatment was also short. Treatment was less effective and required more time in cases where the course of the disease had been long, and had developed slowly.

Acupuncture-moxibustion has had definitely effective results in treatment of apoplexy and its after-effects as was the case in 192 cases observed at the Tientsin Municipal Chinese Medical Hospital<sup>21</sup>; among these were 89 patients who had been suffering from the malady for one month, 28 from one to three months, and 75 from three to more than a year. Nine of these had serious coma. The majority had such symptoms as hemiplegia, facial paralysis, sensory disturbance, aphasia, partial blindness, and hypertension. They were treated with acupuncture-moxibustion and Chinese drugs. The results were as follows: Entirely cured, or nearly cured - 51 cases; improved - 115 cases; no effect - one case; death - one case; results not clear - 24 cases. The treatment was 96.9% effective. According to their analysis, the effectiveness was related to the length of the disease, being highest in those afflicted for a month or less, and lowest in those affected for a year or more. In general, 20-40 acupuncture-moxibustion treatments were required with the effectiveness manifesting itself as the number of treatments increased, but with no evident effectiveness under 20 treatments.

According to a report by the Neuropsychiatric Research Group of the Peiping Medical Academy<sup>22</sup>, in 108 cases of neurasthenia treated with mei-hua acupuncture, varying degrees of effectiveness were obtained in 90 cases. In addition to this, they treated 23 cases of Parkinson's syndrome induced by oral chloramine diphenylamine with evident progress in 11 cases

progress in nine cases. The results were rapid.

## 2. Diseases of Internal Medicine:

Acupuncture-moxibustion therapy is suitable in any ailments occurring in the respiratory, circulatory, digestive, urinary and reproductive systems, in addition to those concerned with endocrine gland, hemopoietic organ, and locomotor organs.

In bronchial asthma, there are many methods of treatment, such as acupuncture-moxibustion, mei-hua needle, p'i-hsia-liu-chan, hua-nung cauterization, and acupuncture site ultra-violet radiation. The immediate effects have been satisfactory, and in the majority of cases the asthma attacks can be relieved or lessened. However, there has been no final solution to the problem of recurrence of asthma. There is only a minority of cases in which it does not recur. According to a report by the Acupuncture-Moxibustion Group of the Shanghai Chinese Medical Academy<sup>23</sup>, acupuncture-moxibustion was used to treat 116 cases of the disease. Three years after treatment, there was no recurrence in 27 cases, but there was a reduction of the number of attacks or lessening of the symptoms in 50 cases. There was no effect in 39 cases.

Hypertension is now a commonly seen and important disease of the circulatory system. According to general reports, regardless of whether ordinary acupuncture-moxibustion, mei-hua needle, shui-chen, or hua-nung cauterization is used, all are effective in lowering blood pressure and alleviating symptoms. The present problem is that of how to strengthen its long term effectiveness. This awaits further research.

### Acupuncture-moxibustion in Treatment of Heart Disease:

In tachycardia and auricular fibrillation acupuncture-moxibustion treatment can bring about a slowing of the heart rate, and in angina pectoris it is definitely analgesic. In cardiasthenia and heart failure, it definitely acts as an heart strengthener. According to a report by the Sian First Hospital<sup>24</sup>, acupuncture-moxibustion was used in treating 66 cases of rheumatic heart disease. In heart failure, the majority of patients had varying degrees of improvement. In a small number of patients all symptoms vanished, and they were able to return to normal work.

Acupuncture-moxibustion has been quite effective in digestive system maladies such as exesis neurotica, acute gastritis, acute gastroenteritis, gastrospasm, food poisoning, acute enteritis, and constitutional constipation. For example, The Department of Internal Medicine of the Shantung Medical Academy Hospital has reported on the treatment of 37 cases of food poisoning with acupuncture-moxibustion.<sup>25</sup> This group was stricken from two and one-half to four hours after eating. The major symptoms were vomiting, nausea, abdominal pain and diarrhea with a few suffering from fever, chills, and dehydration. There was a drop in blood pressure in  $\frac{1}{4}$  of them. As a result of culture and animal inoculation of the food, vomitus, and feces, it was proved that the food poisoning was caused by hemolytic Staphylococcus aureus. After receiving acupuncture-moxibustion therapy, they were all cured. After receiving nausea and vomiting ceased and abdominal pain lessened 10-20 minutes after acupuncture. It can be seen that acupuncture-moxibustion therapy of the disease makes its effectiveness quickly seen.

Acupuncture-moxibustion is definitely effective in treatment of rheumatism. According to reports by the Acupuncture-Moxibustion Departments of the Fukien Province Peoples Hospital and the Chungking First Chinese Hospital,<sup>26,27</sup> the symptoms of acute and chronic rheumatic arthritis vanished in 289 cases (21.2%), markedly lessened in 219 cases (16.0%), and lessened in 734 cases (53.8%) of the 1,364 cases treated after undergoing acupuncture-moxibustion therapy. It was of no effect in 122 cases (9.0%). According to their report, therapeutic effects were seen more quickly in acute rheumatic arthritis than in the chronic form. It was also more effective in the former. The Acupuncture-Moxibustion Department of the Kwangtung Province Chinese Experimental Hospital has reported on acupuncture-moxibustion treatment of 726 cases of rheumatism<sup>28</sup>. After undergoing treatment, symptoms entirely vanished in 242 cases (33.3%), and lessened in 434 cases (59.8%). In 50 cases (6.9%) it was either ineffective or the results were not clear. The results of electro-needle treatment of rheumatism has also been good.<sup>29</sup>

Osteoarthropathy is a type of endemic, chronic bone-joint malady. There have not been many methods of treating it in the past. In recent years, Honan Province has obtained satisfactory results in a combined treatment using acupuncture-moxibustion, fire-pots, an-mo (massage technique), and oral ma-ch'ien-tzu-wan and hu-ku yao-chiu. According to a preliminary analysis of a large number of people in the Fu-niu-shan District of the province, of 3,207 cases treated 2,798 were completely cured, a rate of 87.2%. Shensi Branch Endemic Disease Research Laboratory of the Chinese Academy of Medical Sciences also made observations on 200 cases of this disease<sup>30</sup>, and using only the above mentioned treatment for eight to 12 days, cured 165 cases, markedly improved 26 cases, and improved seven cases. There was no effect in two cases.

In toxicosis, the Ning-hsiang Chinese Medical Hospital in Hunan has reported on the use of acupuncture-moxibustion in 58 cases of gas poisoning<sup>31</sup>. These 58 were seriously stricken and in coma. 48 of these immediately revived following acupuncture-moxibustion first aid. The remaining ten revived after receiving a combined treatment of acupuncture-moxibustion, an-mo (massage) and nasal wo-lung-tan. All were cured, and there were no deaths.

### 3. Infectious and Parasitic Diseases:

Acupuncture-moxibustion has been very effective in influenza. According to a report by the Yen-an County Hospital<sup>32</sup> they made 188 case comparisons of acupuncture of the ta-ch'ui site, and orally taken aspirin for treatment of influenza. The results demonstrated that acupuncture was superior. Body temperature began to fall an hour after treatment, and gradually fell to normal within six to 15 hours. All symptoms vanished quickly, and the patients recovered normal health within six to 20 hours after treatment. The above hospital, during the influenza epidemic season, employed acupuncture of the tsu-san-li site in 818 healthy people living in a group that had been infected. In observing the preventative action of acupuncture, they found that none of 818 came down with the disease.

The Shenyang Infectious Disease Hospital has reported on epidemic meningitis.<sup>33</sup> They gave acupuncture treatment in 25 cases, curing all

without after-effects. Aside from this, they have made a summary of 303 cases of anuresis caused by various infectious diseases<sup>34</sup>. In general, after one acupuncture treatment urination soon followed, although in some, two treatments were necessary. There were no failures, moreover after the acupuncture treatment, the patients were able to immediately urinate freely without recurrence of the symptoms.

There have been many and rather satisfactory reports on the efficacy of acupuncture-moxibustion in malaria. According to the observations of the Acupuncture-Moxibustion Experimental Laboratory<sup>35</sup> attacks ceased in the majority of cases after treatment and there was a simultaneous disappearance of plasmodium schizonts in the blood. However, it was not effective for gametocytes.

Acupuncture-moxibustion (including electro-needle) is also definitely effective in bacillary dysentery, pertussis, leprosy reaction, and Bacillus butschlii disease. According to a report from the Shensi Province Shih-yen -ssu Leper Colony,<sup>36</sup> electropuncture and other therapeutic measures were used in treating 187 cases of leprosy (neural reaction - 159 cases)(erythema nodules - 28 cases). Symptoms disappeared in 148 cases (79.2%), and lessened in 36 cases (19.2%). It was ineffective in only three cases (1.6%). According to another report from the Shensi Province Leprosarium,<sup>37</sup> varying degrees of effectiveness were reported in a majority of cases of the neural form of leprosy with only acupuncture-moxibustion treatment.

Although acupuncture-moxibustion has not direct parasitocidal activity, it can, however, alleviate the symptoms of parasitic diseases, and improve the state of health of the patient's body, relieve toxic reactions to parasiticides, and provide favorable conditions for the treatment of the disease. The Anhwei Province Hao Hsien Health and Epidemic Prevention Station has reported on the use of the fire-needle (huo-chen) in treating 112 cases of filarial elephantiasis.<sup>38</sup> The swellings were reduced, and markedly effective results seen in all cases. According to observations made by the station, movement was convenient three to five days after treatment, and the swelling disappeared after ten days. After 20 days, the scales and fleshy protuberances of the skin gradually drop off, and after a month, the skin becomes soft and smooth. Aside from this, acupuncture-moxibustion avoids the toxic antimony reaction in treating schistosomiasis, and the hai-ch'un (海群) toxic reaction in treating filariasis. It is also effective in the symptoms of liver and spleen enlargement and ascites in late stages of schistosomiasis.

#### 4. Obstetrical and Gynecological Diseases:

According to general reports, acupuncture-moxibustion has been varyingly effective in painful menstruation, menorrhagia, continuous amenorrhea, leucorrhoea, ptosis of the uterus, chronic pelvic inflammation, vomiting from pregnancy, post-partum uterine contraction pains, retained placenta, suffocation of the new-born infants, neonatal scleroderma, mastitis and lactation abnormalities. The Shensi Province Hospital observed the analgesic action of acupuncture in post-partum uterine contraction pains<sup>39</sup> and in the 107 cases observed, it was found to be markedly effective in 67 cases, good in 35 cases, and ineffective in five

cases. According to the observations, one treatment will stop pain if given before delivery, one to two treatments being required after delivery.

Present day medicine has no ideal lactation stimulating methods as yet, but according to a report by the Obstetrical and Gynecological Hospital of the Shanghai First Medical Academy,<sup>40</sup> acupuncture-moxibustion has a definite lactation stimulating activity. Altogether, they have observed 378 cases in which acupuncture-moxibustion markedly increased the quantity of milk in 119 cases (30.4%) and moderately increased in 190 cases (51.5%). There was no effect in 69 cases (18.1%).

In Caesarian and normal parturition, acupuncture-moxibustion techniques have been quite satisfactory in promoting delivery.<sup>41,42</sup>

#### 5. Pediatric Diseases:

Since 1953, the Peiping Children's Hospital has used acupuncture-moxibustion in treating infantile paralysis and its after-effects with effective results. According to their report,<sup>43</sup> of 815 cases, 238 cases were cured (locomotion and reflexes returned to normal), 86 cases practically cured (locomotion returned to normal), 305 cases markedly improved (locomotion recovered, but not normal), and 184 cases improved (mild degrees of paralysis) after acupuncture-moxibustion treatment. It was ineffective in two cases. Expressed as a percentage rate, it was 99.7% effective with 77.2% of cases recovering locomotor ability after undergoing treatment. Early treatment of this disease with acupuncture-moxibustion is most effect, although late treatment is also certainly effective. It is recognized by modern doctors that those paralysed for two years cannot recover; however the above report brings out the fact that of 61 cases of two and three years duration or more, there were 25 cases which markedly improved, 34 improved, and only two in which it was ineffective after acupuncture-moxibustion.

Acupuncture-moxibustion treatment has also been quite effective in the treatment of enuresis, convulsions, pylorospasm, and indigestion in children. According to observations made by the Acupuncture-Moxibustion Department of Peiping Children's Hospital<sup>44</sup> on treatment of 24 cases of pylorospasm, 17 were cured, six greatly improved and relieved, and one was without effect. The average period of treatment was 16.9 days. According to various reports, acupuncture-moxibustion has been more than 90% effective in treating indigestion.<sup>45,46</sup> The Pediatrics Department of the Shanghai Railway Central Hospital has observed 190 cases of the disease, curing 173 (91%) after acupuncture-moxibustion. Seven cases were improved (4%), and there was no effect in 10 (5%). The effects are seen quickly, and 158 of the 198 cases were cured in a few days.

#### 6. Sense Organ Diseases (Wu-kuang-k'o):

The effects of acupuncture-moxibustion are outstanding in the treatment of ophthalmological diseases such as acute conjunctivitis and ophthalmia photoelectrica. It is also quite satisfactory in hordeolum, and keratitis from wounds. Improvement also can be brought about in many difficult to treat diseases such as retinal hemorrhage, retinopathy, and neuritis of the optic nerve posterior to the eyeball. Its value stands out especially in ophthalmia photoelectrica, a disease seen often among electrical workers. The Department of Ophthalmology and Otolaryngology of the Shanghai

First Medical Academy treated 100 cases of this disease successfully. There was relief of the symptoms of ophthalmalgia, eye spasm, sensitivity to light, and lacrimation in 80% of the cases a few minutes after treatment. Symptoms were reduced in the remaining 20% of the cases. The 11th Peoples Hospital of the Shanghai Academy of Medicine has used acupuncture treatment in 301 cases of deaf-mutism with satisfactory results. Of these 301, aside from 20% in which the etiology was not clear, there were 80% in which the causes were acute childhood infectious diseases, otitis, wounds, and streptomycin and quinine toxicosis. The condition had been in existence in some cases a few months, in some 40 years, and five to 19 years for the majority of cases. After undergoing acupuncture treatment, 92 (30.6%) of these who could hear the sound of ordinary conversation behind their backs and could even answer simple questions after phonetic study of simple sentences. In 163 cases (54.1%), hearing was partially recovered, and were able to hear loud voices behind their backs. They were also able to study and practice simple sentences. Treatment was ineffective in 46 cases (15.3%).

Acupuncture-moxibustion has also been definitely effective in treatment of nervous ringing of the ear, chronic nasitis, and chronic pharyngitis. It has been even more markedly effective in acute inflammatory diseases of the ear, nose, pharynx, and larynx. According to a report by the Peiping Oto-rhino-laryngology Hospital,<sup>48</sup> acupuncture treatment was 98% effective (includes complete cures, and alleviated cases) in 224 cases involving acute tonsillitis, acute pharyngitis, staphylitis, acute laryngitis, inflammation of the external meatus, acute otitis media, and acute nasal sinusitis. As seen from the course of the treatment, acupuncture functioned to relieve pain and reduce inflammation in these acute diseases. In recent years there have been quite a number of reports on the use of acupuncture-moxibustion in treatment of acute tonsillitis, with a cure rate of between 85 and 95%.<sup>49, 50, 51</sup> In the majority of cases pharyngitis was immediately relieved upon acupuncture; consequently this met with the acceptance of the patients.

In tooth ailments, simple acupuncture or water needle (shui-chen) has been very effective in treating toothache and acute inflammation. According to a report from the Cheng-chou Railway Central Hospital,<sup>52</sup> effective results have been obtained in treating peripheral inflammation of the crown, endodontitis, and inflammation of the periodontal membrane with injections of small quantities of procaine at the k'ung site. The Department of Oralogy of the Kansu Province First Peoples Hospital has reported that acupuncture-moxibustion is very effective in treatment of peripheral inflammation of the crown in lower wisdom teeth.<sup>53</sup> Many reports point out that pain is relieved quickly, and that a special feature of acupuncture-moxibustion in this ailment is its shortening of the length of treatment.

The Peiping Oralogy Hospital has used acupuncture-moxibustion in treating 600 cases involving diseases of the oral cavity,<sup>54</sup> finding it most defective in thrush and ulcerative stomatitis, and slightly less so in glossitis. Among these, there were 141 cases of chronic, recurrent aphthous stomatitis (there were in addition 22 cases with unclear results and

not included). After acupuncture-moxibustion, 83 cases were cured, 50 alleviated, and there was no effect in eight cases. Among those cured, there were 11 recurrences in three to five months, and two recurrences after ten months, making an incidence of recurrence of 15.6%.

#### 7. Dermatology:

Acupuncture-moxibustion has been definitely effective in treating neurodermatitis, eczema, urticaria, acne and hyperhidrosis. According to a report by the Dermatological Disease Research Laboratory of the Chinese Academy of Medical Sciences,<sup>55</sup> acupuncture was used in treating 41 cases of acne, curing them all. Its special feature is the rapid cessation of pain and a short course of treatment. 32 cases were cured within only six days.

The Dermatology Department of the 2nd Hospital in Hsien-yang City has reported on the use of mei-hua needle in treating 33 cases of eczema,<sup>56</sup> 26 of which were cured and 7 improved. It was markedly effective. In urticaria, the Shanghai City 4th Clinic, after treating 82 cases with acupuncture, cured 54 of them. In a follow up from two months to two years, there was only 15 recurrent cases.

Acupuncture-moxibustion has very good short term therapeutic efficacy in neurodermatitis, but recurrence is common. According to the First Hospital Research Group of the Shanghai First Medical Academy, the recurrence incidence was 23.3%.

#### 8. Surgical Diseases:

In recent years, many units have used simple acupuncture-moxibustion, huo-chen, tien-chen, erh-chen and shao-cho cauterization to treat a large number of surgical diseases which have met with effective results. The Chungking Second Chinese Hospital has used acupuncture in treating various types of joint sprains, and of 70 cases,<sup>59</sup> 66 were cured and four improved. Erh-chen (Ear needle) has marked analgesic effect.

There are already acupuncture-moxibustion methods for treating lymph gland tuberculosis. These include the chieh-ken (sever the root), simple acupuncture, huo-chen and shao-cho cauterization methods. The chieh-ken method is the most satisfactory. According to a report from<sup>60</sup> the National Pharmacology Research Laboratory of Heilungkiang Province, this method has been used to treat 66 cases of cervical lymph gland tuberculosis with resultant cure in 65 cases, and marked improvement in the remaining case. The shao-cho cauterization method has been highly effective in ulcerative lymph gland tuberculosis, and according to observations at the Surgery Department of the Tientsin 2nd Hospital,<sup>61</sup> of the 164 cases treated, 154 were cured, four improved and only six with no effect.

Acupuncture-moxibustion has also been very effective in treating chilblain, according to a report on 180 treated cases by the Dermatology Department of the Shantung Medical Academy Hospital.<sup>62</sup> Among these 180, there were 175 cases with red swollen skin, and 119 with open sores. After only one to three acupuncture treatments, 113 were cured, and 45 markedly relieved (disappearance of red swelling, but itch persisting), 44 cases improved (red swelling gone, but painful itching remained) and only three in which there were no changes.

Acupuncture-moxibustion has also been markedly effective in treating

acute appendicitis. Since there are other specialized introductions to this topic, we will not discuss it further.

#### 9. Treatment of Post-Operative Diseases:

There have been many reports in recent years on acupuncture-moxibustion treatment of post-operative diseases. Moreover, it has been markedly effective. Many units have made it a common practice in treating these diseases.

According to statistics from eight units of the Peiping Cooperative (hsieh-ho) Hospitals,<sup>63</sup> acupuncture treatment has been used in 211 cases of urodialysis following anal surgery with good results in 176 cases. In general, normal urination was recovered after one treatment. Certain cases required two treatments. In addition, according to a report by the Department of Gynecology of the Sian City 4th Hospital,<sup>64</sup> acupuncture also was effective in 19 cases of urodialysis following gynecological surgery. The superiority of this technique is that there is no urinary tract pain, and infections of the urinary system are avoided.

Acupuncture is also very satisfactory in treatment of post-operative abdominal swelling. According to a report by the Chung-shan Hospital of the Shanghai 1st Medical Academy, acupuncture was used in treatment of 55 cases of abdominal swelling resulting from thoracic and abdominal surgery, and aside from four cases in which the results were not recorded, there were good results in 25 cases (expulsion of large quantities of gas, and shrinking of abdominal size) following treatment. In 20 cases, abdominal distension was reduced within a half an hour after treatment. There was no effect in six cases. Eight cases of hiccough attacks following upper abdominal surgery were also introduced in this report. The hiccoughs were stopped within 20 minutes following acupuncture of the t'ien-t'u, ko-yu, p'i-ch'ien, and tsu-san-li sites.

Acupuncture-moxibustion has also been quite effective in post-surgical pain. The Department of Ot-rhino-laryngology of the Szechwan Province Peoples Hospital has reported<sup>65</sup> that from five to 30 minutes after acupuncture in 30 tonsillectomies followed pain, swallowing difficulty, and ear pain, pain ceased in 28 cases. The treatment was ineffective in two cases. In the cases in which pain was relieved, there were only three of whom there was a recurrence of pain 24 hours after acupuncture. After undergoing further acupuncture, the pain began to recede, and finally did not recur again. The Chung-shan Hospital of the Shanghai First Medical Academy used acupuncture in 30 cases of major abdominal-thoracic surgery and rib fracture pain,<sup>67</sup> which brought about cessation of pain in 27 cases. The analgesic effects could usually be maintained for 16-24 hours.

In headache following lumbar anesthesia, acupuncture is markedly effective. According to a report on 84 cases of headache following lumbar anesthesia by the Acupuncture-Moxibustion Department of the Peiping Co-operative Hospital,<sup>68</sup> pain was stopped in 81 cases, and mild relief attained in the remaining three. Among these, however, aside from a minority in which there was no recurrence of headache following treatment, headache re-appeared in the majority in a definite period of time. However it was much milder in form than previously, and the headache ceased with

subsequent acupuncture treatment.

#### 10. Acupuncture Anesthesia (Chen-fa Ma-tsui):

In various surgical operations, the use of acupuncture induced anesthesia is a new development for acupuncture-moxibustion. There are no records of this either in our own ancient medical documents or in foreign literature. Acupuncture anesthesia can be classed in three forms: 1) simple acupuncture anesthesia, 2) water needle (shui-chen) anesthesia, and 3) electro-needle (tien-chen) anesthesia.

Simple acupuncture anesthesia has been mostly used in sense organ operations. For example, the Department of Ophthalmology of the Kiangsi Medical Academy's Second Hospital has used this type of anesthesia in 41 cases of eye surgery.<sup>69</sup> Of these, there were 32 cases of removal of foreign objects from the cornea in which 28 cases suffered no pain, two cases with only a small amount of pain, and two cases in which an unsatisfactory result was obtained. In nine cases involving electro-cauterization of the eye-lashes, correction of cross-eyedness, piercing of the anterior chamber, and iridotomy, it succeeded in all cases with not one instance of pain.

In another report by the Department of Ot-rhino-laryngology of the above hospital,<sup>70</sup> there was no pain in 31 cases of removal of nasal flesh, nine cases of removal of sub-septal mucus membrane cartilage, and three cases of removal of the hard portion of the nose. In the operation for removing nasal flesh, aside from two cases with considerable sneezing and six with a small amount of sneezing, there was no sneezing. They also used acupuncture anesthesia in maxillary sinusopuncture, with no pain in 79 out of 100 cases, small pain in 12 cases, and two cases in which pain was confined to one side. It was ineffective in seven cases.

The Shensi Division Acupuncture-Moxibustion Research Laboratory of the Chinese Academy of Medical Sciences has reported on the application of Water needle (shui-chen) anesthesia on 52 cases,<sup>71</sup> which included vaginal or abdominal ligation of the oviduct, removal of ovarian cyst, vaginal hysterectomy, ligation of the appendix, repair of ruptured hernia, and excision of anal fistulae. It was completely successful in 21 cases (no pain, but muscles not sufficiently relaxed), and unsuccessful in 11 cases.

According to observations by the Acupuncture-Moxibustion Anesthesia Research Laboratory of the Sian City Research Institute of Medical Sciences, the results of electro-needle anesthesia in 482 surgical cases are as follows:<sup>72</sup> (1) The results of anesthesia in 113 cases involving 11 types of oto-rhino-laryngological surgery were as follows: no pain in 90 cases; mild pain in 17 cases; ineffective in 6 cases. Types of surgery include tonsillectomy, maxillary sinus surgery, internal nasal opening surgery, removal of nasal flesh, simple trepanation of the mastoid bone, and incisions on the external ear. (2) The results of anesthesia in 182 orological cases of tooth extraction, repair of harelip, removal of abscesses, and removal of cysts are as follows: no pain: 144 cases; mild pain: 31 cases; no effect: 7 cases. (3) In 104 obstetrical and gynecological cases of uterine, vaginal or abdominal oviduct ligation, vaginal hysterectomy, and Caesarian section, the results of anesthesia were as follows: no pain: 84 cases; mild pain, 17 cases; no effect: 3 cases. (4) There was a total of

83 general surgical cases such as repair of gastric perforation, gastro-entero-anastomosis, removal of gall cyst, appendectomy, repair of inguinal hernia, abdominal exploration, thyroidectomy and removal of cervical osteoma. Results of anesthesia were: no pain, 56 cases; mild pain: 25 cases; no effect: two cases. In the above statistics on 39 types of operation embracing 482 cases, electro-needle anesthesia resulted in no pain in 374 cases (77.6%), mild pain in 90 cases (18.8%), in short was 96.3% effective. It was ineffective in 18 cases or 3.7%. According to the observations, success of anesthesia was strongly related to the acupuncture sites selected.

Acupuncture anesthesia is a new method which still awaits further intensive research. As seen from data up to the present, although it has been successful in a majority of cases, it still results in a number of cases with mild pain, and a minority in which it is ineffective. Consequently, it can only remain as one of the methods for anesthesia. When it is ineffective, drug anesthesia must be used. Prior to most operations, supplementary drugs are still required in order to elevate the effectiveness of the anesthetic. In fearful, hypersensitive adults and children, this technique is not adaptable due to the difficulty in obtaining cooperation from the patient. Although this is the situation, this type of anesthesia, nevertheless, has its special merits, which are that it is rarely contra-indicated, and it avoids the bad after-effects of drug anesthesia. During surgery, blood pressure and pulse remain constant, and there are no nausea and vomiting reactions, except in tonsillectomy ones, and surgery can be carried out even though the patient has eaten. With simple acupuncture, and electro-needle anesthesia, there is no local edema, and the surgical area is clear. Following surgery, there is no headache, abdominal distension, or urodialysis. With the application of this anesthetic technique, there is also a definite post-surgical anti-inflammatory and analgesic action.

### III. The Development of Theoretical Research

Our medical specialists have, from a long clinical practice, not only gathered abundant experience with acupuncture-moxibustion, but at the same time early determined its principles and synthesized a body of theoretical knowledge on the basis of observation of many phenomena. These theories are consistent with those of traditional Chinese physiology, pathology, diagnosis, and therapeutics, and form the special theoretical system of our national medicine, which has long pointed the way for us in our clinical practice.

According to our traditional medical views, there is a system of channels and veins within the body. This system encompasses the tissues of the entire body, and are intimately connected with its organs. These transport ch'i ("ether") and blood to nourish the entire body and protect the organism. These also maintain internal balance and adjust the organism to its external environment. Each channel has a definite region of distribution, and includes definite acupuncture sites; moreover manifests definite symptoms in sickness. The intrusion of acupuncture-moxibustion on the site serves to transmit the channel reaction to its related regions

in order to treat certain diseases. In this way, the special reaction of the sites are manifested with the result that there are rules that can be followed in clinical acupuncture-moxibustion. In acupuncture-moxibustion treatment of a disease, body reactions must be induced before results can be obtained. In the Canon of Internal Medicine (Nei Ching) it is said: "the ch'i arrives, and then there is an effect."<sup>73</sup> Different techniques are used to arouse body reactions in accordance with the nature of the individual disease, e.g., supplementary (p'u) or purgative (hsieh) techniques are used to attain a balance of yin and yang and harmonize blood and ch'i. These are the major theoretical explanations which our traditional medicine has provided for a acupuncture-moxibustion treatment.

However, ancient doctors were limited by the historical times in which they lived, and did not possess the conditions for carrying on research or discovery of experimentally verified principles using modern scientific methods. This task naturally falls on the shoulders of our modern Chinese and Western medical workers. Below, we shall introduce under four sections the preliminary research work being done in this area.

1. From Acupuncture-Moxibustion Research Work on the Nervous System, Some Units Have Come to an Understanding of its Effects on the Cerebral Cortex From the Changes in Brain Waves:

For example, the Shenyang College of Medical Science (now the Shenyang Academy of Medicine) Neuropsychiatric Research Group has reported<sup>74</sup> that they conducted more than 120 acupunctures and determinations on 31 persons with normal brain waves. After acupuncture-moxibustion, it was found that in the majority of patients, there was a marked decrease (inhibition) in alpha wave intensity in the frontal lobe, temporal lobe, parietal lobe and occipital lobe of the cerebrum. In a minority, there was an elevation (stimulation) of alpha wave intensity. These changes were maintained for about ten seconds, although some were of longer duration. The Psychiatric Research Group of the Peiping Medical Academy has observed the effects of the mei-hua needle on the cerebral brain waves of patients suffering from neurasthenia, climactius melancholia, and schizophrenia.<sup>22</sup> Of seven cases observed, inhibition appeared in six of them from three to 30 minutes following treatment with a marked drop in alpha wave volume and index, and a fall in intensity with irregular wide waves appearing. This phenomenon lasted from ten to 15 minutes before returning to the original state.

The 56th Research Group of the Wuhan Medical Academy has engaged in the following experiment:<sup>75</sup> They anesthetized rabbits with sodium pentathol, and compared the natural revival time with that of animals given an anesthesia antagonizing drug (caffeine sodium benzoate). They also observed the effects on revival time of acupuncture and mei-hua needle on sites corresponding to those in humans. They used 20 rabbits as controls and performed the experiment 160 times. The average revival times for the groups are as follows: Control group (no treatment whatsoever following anesthesia) --  $22.70 \pm 1.75$  (11-36) minutes; Acupuncture group --  $17.80 \pm 1.27$  (3-30) minutes; Mei-hua needle group --  $13.70 \pm 0.82$  (9-23) minutes; Anti-anesthesia group:  $16.95 \pm 1.21$  (7-30) minutes. As compared with the control group, the T values for the acupuncture group was 2.30, the mei-hua needle

4.66 and the anti-anesthetic group 2.70, i.e., all above 2, which is sufficient to prove that either jen-chung acupuncture or mei-hua needle skin tap possess a greater anesthetic action on the cerebral cortex than sodium pentathol. The Electropuncture Research Laboratory of the Sian Hygiene School has also conducted similar experiments,<sup>76</sup> proving that acupuncture can cause earlier revival in animals (dogs and rabbits) anesthetized with ethyl ether, hydro-chlorides, and sodium pentathol.

The Department of Physiology, Experimental Medical Research Laboratory of the Chinese Academy of Medical Sciences, has observed the effects of acupuncture on peripheral nerve injury. Using surgery in rabbits, they removed the 6th lumbar nerve root on one side; thereby causing a partial loss of nervous control of the quadriceps femoris muscle on that side. Following this, we observed the recovery effect of acupuncture of the hsia-chih site on that side as shown by recording the action potential (using oscillograph) of the quadriceps femoris. Non-acupunctured rabbits were used as controls. The changes in the damaged side were as follows: within two to five days after the operation, the quadriceps femoris action potential fell rapidly, at most to 0 or to less than one millivolt. After this, it gradually rose. The control group, 50 days after the operation, had on the average recovered about 65% of their pre-surgical action potential. After more than four months, no marked increase was seen. The acupuncture group had recovered about 60% of the former action potential 20 days after the operation. 50 days after the operation, the average recovery was 103%, somewhat higher than the pre-surgical level. The changes seen on the uninjured side are as follows: in the control group action potential had fallen in the majority, ten days following the operation, and up until 55 days after surgery it had fallen to about 75% of its former level. After this, it gradually recovered. The acupuncture group (acupuncture of the injured side only), however, did not experience a drop in action potential following the operation, but on the contrary, saw a rise. While there was, in a minority of cases, a drop ten days following surgery, these were still higher than in the control group. On the basis of these results, they recognized that the ability of acupuncture to promote the recovery of partial loss of function in the quadriceps femoris is probably due to its stimulation of the growth of the remaining intact neurofibrils. At the same time, acupuncture of the injured side could prevent a drop in quadriceps femoris action potential on the healthy side.

## 2. Acupuncture-Moxibustion Has Begun to be Studied from Observations of its Effect on Internal Organ Functional Activity:

The Physiological Research Group of the Shenyang Academy of Medicine has investigated the effects of acupuncture on action current of the heart in dogs,<sup>77</sup> They used eight dogs, utilizing long term complementary experiments and constant control groups. The results follow: When they punctured a site corresponding to the human tsu-san-li site, there was an immediate effect on the dogs' hearts, causing an immediate increase in heart rate. The P-R period was shortened, and the height of the R wave lowered. The T wave dropped, disappeared, or was negatively inverted. After removing the needle, the effects were maintained for a comparatively long period. If acupuncture were applied the same day, an even greater

reaction could be obtained. In order to investigate its mechanism they gave lumbar anesthesia, cut the vagus nerve at the cervical level, used atropine sulfate injections to block the vagus nerve, or morphine anesthesia. Under such conditions, there was no immediate heart reaction following acupuncture.

In order to come to a clear understanding of the acupuncture effects of the different sites on heart action, the Physiology Department of the Chinese Academy of Medical Sciences' Experimental Medicine Research Laboratory and the Acupuncture-Moxibustion Research Laboratory of the Research Institutes of Chinese Traditional Medicine are currently working together on various types of research. They gave intravenous adrenalin injections to rabbits in order to slow down their heart-rates, and then observed the reactions to acupuncture of various sites. Preliminary results indicate that the action of adrenalin can be markedly weakened in the majority of cases by acupuncture of sites corresponding to the human pericardial channel (hsin-pao ching nei-kuan site in coordination with the gastric channel (wei-ching) tsu-san-li site. This causes the heart to be quickly stimulated back to its normal rate. However, these effects are not manifested by acupuncture of the bile channel (tan ching) kuang-ming site and the wei-pa tse-mien fei-hsueh point. These experiments are still in progress.

Different intensities of acupuncture have different effects on vasomotor function. These are observations of the Department of Physiology Research Group of the Lanchow Academy of Medicine.<sup>78</sup> They made 53 observations on 39 people, measurements made using the arm chi-ch'u (integral curve ?) as an indicator. Using the light stab technique (ch'ing tz'u ch'e-chen'fa) in 30 experimental tries, vasoconstriction and lowering of vessel pressure resulted. Vasoconstriction was even more pronounced when the suan, ma, yin, and chang reactions (obtaining of ch'i) occurred following acupuncture. The heavy stab technique was used in 23 tries, inducing vasodilation in 14 instances.

Some units have also been observing the effects of acupuncture on experimental shock. Rabbits blood was injected into the femoral veins of dogs in order to produce a state of transfusion shock. Acupuncture of a site corresponding to the human jen-chuang site can remedy this, bringing about an early return of normal blood pressure, respiration, and heart rate.<sup>79</sup> Acupuncture of the jen-chung site (the shih-hsuan and ho-ku may be added) has definite remedial action in wound shock in rabbits. After acupuncture, blood pressure firmly rises, and respiration also becomes deeper and more rapid.<sup>80</sup>

Many places have investigated the effects of acupuncture on digestive tract function. The Chinese Academy of Medical Sciences' Tumor Hospital, using X-ray (barium meal roentgenography), has seen that acupuncture of the t'ien-t'u, shan-chung, ho-ku, and ch'en-ch'ueh sites can bring about an increase in the intensity of esophageal peristalsis and widening of the lumen. The Acupuncture-Moxibustion Research Laboratory of the Research Institutes of Chinese Traditional Medicine using X-ray has seen that acupuncture of the tsu-san-li site produces a slowing of gastric peristalsis, while acupuncture of the shou-san-li site makes gastric

peristalsis more rapid. As seen from the changes in depth of the peristaltic waves, when the stomach is relaxed, constriction is intensified following acupuncture. When the stomach is tense, it is relaxed following acupuncture. Acupuncture can also bring about relief in pylorospasm.<sup>81</sup> The Radiology Department of the Sian City First Hospital has also seen that acupuncture of the tsu-san-li, yu-men, and chung-kuan sites can bring about a slowing of gastric peristalsis, while acupuncture of the shou-san-li, shou-shang-lien, and the shou-hsia-lien, and the wei-yu can bring about an acceleration of gastric peristalsis.<sup>82</sup> In the above two experiments, four cases resulted in needle-sickness, and at that time the stomach was relaxed and peristalsis ceased. The Department of Radiology of the Kiangsi Medical Academy First Hospital has discovered that acupuncture of the wei-yu and tsu-san-li sites can in the majority of cases bring about an increased intensity of peristalsis and an increase in gastric secretion.<sup>83</sup> In animal experiments, observations were carried on using the gastric contraction curve of dogs with Pa-so-fu [Bassof ?] gastric fistulae as an indicator. The Physiology Research Group of the Kiangsi Medical Academy injected dogs with 0.25% novocaine at a site comparable to the human tsu-san-li site. They found that there occurred a stimulation of the stomach's periodic movement, which was expressed as an intensification in contraction, a heightening of tension, and increase in the rate of frequency, an extension of the activity period, and a shortening of the resting period.<sup>84</sup> The Physiology Research Group of the Lanchow Medical Academy used electro-puncture at the meeting point of the lumbar and sacral vertebrae in dogs (pai-hui site, but differing from the human pai-hui site), and found, in the majority of cases that this induced an increased intensity of gastric activity.<sup>85</sup> The Shenyang Medical Academy has experimentally given rabbits Mao-kuo-yun-hsiang-chien injections to stimulate gastric peristalsis. Acupuncture of a site corresponding to the human tsu-san-li site weakened the stimulating effect, and the effects were even more marked with acupuncture of the chung-kuan site.<sup>86</sup> The Neuropsychiatric Research Group of the Shenyang College of Chinese Medical Science, investigated bile secretion following removal of gall cysts. Using a fistula connected to the outside of the body, they observed the effects of acupuncture-moxibustion upon the volume of bile secretion. They found that with acupuncture of the hsia-chih-ko site there was a marked increase in the quantity of bile flow. With acupuncture of the shang-chih and pei-shang-pu sites, there was a rapid decrease in the volume of bile secretion. Moxibustion of ch'uan-shen-ko site caused a marked increase in bile volume. Aside from this, they also made 107 observations on the changes in urine quantity following acupuncture of 78 persons with undiseased urinary systems. They found that there was an increase in urine quantity 20-40 minutes following acupuncture. After this, it returned to normal. In all sites of the body, the hsien-yu and ch'i-hai-yu reactions were the greatest.

As seen from the above data, acupuncture-moxibustion has a definite effect upon internal organ activity, its efficacy being intimately related to the nature of the technique, the acupuncture sites, and the condition of the internal organs at the time of treatment.

### 3. Acupuncture-Moxibustion Research in Body Fluids and Biochemistry:

In the endocrinological aspects, the Physiology Research Group of the Shenyang Medical Academy<sup>87</sup> has proved that acupuncture of rabbits at sites corresponding to the human tsu-san-li, kan-yu, and tan-yu sites can produce an intensification in pituitary-adrenal activity. There is an increase in the weight of the adrenal gland, and a thickening of its cortex. The Physiology Research Institute of the Chinese Academy of Sciences has observed from experiments on acupuncture-moxibustion stimulation of lactation that after acupuncture-moxibustion there appeared an increase in lactogenic hormone which greatly paralleled its clinical efficacy in the blood of milk deficient women.

Acupuncture-moxibustion also affects the production of blood constituents and immune bodies. According to experiments of the 4th Military Medical College Physiology Research Laboratory,<sup>89</sup> acupuncture of rabbits at a site corresponding to the human tsu-san-li site, increases the leucocyte count during the period of acupuncture 50% over the previous count. A differential count shows that the greatest increase is in neutrophils. These changes reach their peak from two to three hours after the commencement of acupuncture. On the average they are about 70% higher than before treatment. After 24 hours there is a drop, but the count is still 30-40% higher than pre-treatment. There is no such marked effect as this with acupuncture of fei-hsueh region of the buttocks. These changes in the leucocytes did not occur or did not occur markedly when the tsu-san-li site was punctured together with a novocaine block of the ischial nerve, or general anesthesia with sodium pentathol and amino-methyl-acetate of rabbits. The Sian Hygiene School has observed that by acupuncture-moxibustion of the nei-kuan, and tsu-san-li sites, there can be brought about an increase of leucocyte phagocytosis of staphylococcus aureus, the phagocytic index increasing an average of 1.5 times and after acupuncture, and 0.5 times after moxibustion.<sup>90</sup> In various phases of electropuncture experimentation, it has been found that electropuncture has similar effects on leucocyte count, differential count, and phagocytosis.<sup>91,92,93,94</sup> According to a report by the Sian Hygiene School Electropuncture Therapy Research Laboratory, electropuncture can cause a marked increase in the formation of hemolysin when sheep blood is introduced.<sup>95</sup> Electropuncture or hao-chen was given after inoculating rabbits with Hemophilus pertussis, and the antibody content also increased markedly.<sup>96</sup>

The Physiology Research Group of the Shenyang Medical Academy, in studying the antibody defense reaction, proved that the SH content of the serum temporarily fell (returned to normal after eight hours) following acupuncture of sites in the dog comparable to the human tsu-san-li and ch'u-ch'ih sites. However, there was a marked increase in SH content of the cerebral cortex, liver, kidney, and striated muscle tissues in rabbits following acupuncture.<sup>97</sup> In regard to succinic acid dehydrogenase [сукциндегидрогеназа] in the tissues, it was found that after five punctures of sites corresponding to the human feng-fu, tan-yu, shen-yu, and tsu-san-li sites, there appeared a marked increase in enzyme activity in the cerebral cortex, the liver, and striated muscle. With seven punctures, there was a marked intensification of enzyme activity in the subcortical

cerebral area, and in the kidney.<sup>98</sup>

Acupuncture-moxibustion leads to many body fluid and biochemical changes, such as increase in leucocyte count and intensification of phagocytosis, increase in antibodies, increase of tissue SH, intensification of succinic acid dehydrogenase activity and pituitary-adrenal activity. This explains the way in which acupuncture-moxibustion elevates the antibody defense powers and regulates cell metabolism.

#### 4. Acupuncture-Moxibustion Has Been Studied From the Standpoint of Skin Electric Reaction:

A large number of units have studied electric reactions of the capillaries (ching-lo) and sites using measurements of skin potential and skin conduction as indicators. Although a few principles have already been discovered, the data published to date are not numerous and conclusions are difficult to draw.

Aside from this, in July of this year, the Ministry of Health held a national conference on Chinese Acupuncture-moxibustion. There were more than 300 papers presented at the meeting. These included investigations on the theory of capillaries, clinical research, and experimental research, which presented considerable data concerning the mechanism of acupuncture-moxibustion. Due to limitations of time, we have not been able to summarize the data from the meeting in this article.

We have, however, outlined above the accomplishments of acupuncture-moxibustion therapy since the establishment of the New China. These include rich and varied techniques, the accomplishments of acupuncture-moxibustion in various clinical fields, and the present state of theoretical research. From these accomplishments comes active proof of the value of our traditional medicine and the correctness of the Party policy on traditional Chinese medicine.

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