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SCIENCE BULLETIN

National Science Council
2 Canton Street
Taipei, Taiwan, Republic of China

ROC to Host Rice Productivity Symposium

An International Symposium on Rice Productivity will be held in Taipei March 21-27 under the joint sponsorship of the National Science Council of the Republic of China and the Interchange Association of Japan with the Institute of Botany, Academia Sinica as the cosponsor. Agricultural scientists from the two sponsoring countries and Korea will attend the week-long meeting. The following is a tentative schedule for the symposium:

March 21, Wednesday

Arriving Taipei for participants
(Check in Grand Hotel for foreign participants)

March 22, Thursday

0900—1200

Photosynthesis and Adaptation

Dr. Tsunoda, S.
Faculty of Agriculture
Tohoku University

Characteristic of photosynthesis and environmental adaptation of rice

Dr. Shih Yuh-jang
Institute of Botany
Academia Sinica

Comparative physiological studies on the growth of rice stands

Dr. Huang Chen-seng
Dept. of Agronomy
Taiwan Agricultural Research Institute

Environmental adaptation of rice varieties

1230—1400

Visit National Taiwan University

1400—1800

Rice Productivity

Dr. Murata, Y.
Faculty of Agriculture
The University of Tokyo

Climatic condition and rice productivity

Dr. Chen Ching-yih
Dept. of Botany
National Chung-Hsing University

Studies on the physiological characteristics of rice and the microclimate of paddy rice

Dr. Lin Peter Chue-san
Dept. of Atmospheric Science
National Taiwan University

Variations of radiation energy and CO_2—concentrations on the rice field of northern Taiwan

Dr. Lin An-chiao
Dept. of Agronomy
National Taiwan University

The causes of the low yielding of the second crop of rice: Northern region of Taiwan

March 23, Friday

0900—1200

Analysis and Modelling in Pest Management

Dr. Iwao, S.
Faculty of Agriculture
Kyoto University

Analysis spatial distribution patterns and density estimation in insect populations with particular reference to pests of the rice plants

Dr. Lin Tsan-long
Dept. of Agronomy
National Taiwan University

Spatial distribution of brown planthopper in Taiwan

Dr. Chen Chiou-nan
Division of Entomology
Taiwan Plant Protection Center

Effects of the brown planthopper injury on the growth and yield components of rice

1300—1430

Visit Academia Sinica

1500—1700

Visit National Palace Museum

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Recent Studies on the Mechanism of Lipid Lowering Effects of Acupuncture

By Chun-chung Wu
Associate Professor, Department of Medicine, National Taiwan University Hospital, Taipei, Taiwan, Republic of China

Introduction

The author has reported that needlings at a combination of specific points could reduce experimental hyperlipidemia in rabbits and hyperlipoproteinemic patients in the International conferences on atherosclerosis, and drugs affecting lipid metabolism since several years ago. Reductions of serum cholesterol 15 to 20 per cent and of serum triglycerides 40 to 50 per cent without diet control were observed in one year follow-up study after one month treatment of acupuncture in man and 40 percent reduction of serum cholesterol levels with a decrease of aortic atherosclerotic lesion in rabbits. How could acupuncture lower hyperlipidemia? If we could clarify the mechanism, it would not only create a new basic medicine but also bring a new safe clinical treatment for atherosclerotic patients. Atherosclerosis has become the human life killer recent years. Hyperlipidemia is one of the major risk factor of atherosclerotic heart disease. In treatment of this disease diet control and long term drug treatment is indicated. However, it accompanies side effects to the liver and a great expense. Acupuncture may resolve this problem.

Research Procedure and Results

While acupuncture has been known a pain killer in this several years. it has showed many clinical applications since three thousands years ago in China. The principle of acupuncture treatment is to keep homeostasis in living body. The author had an idea following this principle, that acupuncture may have potential to correct hyperlipidemia in balanced state. The first task for the mechanism of lipid lowering effects of acupuncture was to find the specific point which show the potential of lipid lowering effects. The author succeeded to find a specific point which showed better effects than others in a series of experiments after making four year efforts in animal and clinical experiments. Following the Chinese Meridian theory the author selected a series of points belonging to meridians of bladder, kidney, large intestine, triple warm, liver and gall bladder etc. Of these points selected, only the point of liver meridian showed prominent significant cholesterol lowering effects.

The second step was how needle this specific point could lower hypercholesterolemia. After making one year effort the author found the increases of bile acids excretion and neutral fat excretion in 24 hour feces occuring in hypercholesterolemic rabbits received the needling than those of control group. Beta lipoprotein content of the liver and serum free fatty acid levels were also significantly decreased while serum insulin levels were contrarily increased. These data were reported in the VIth International Symposium on atherosclerosis 1976. Based those data available the author suggested an accelerated lipoprotein catabolism, like as nicotinic acid or thyroid hormone action, might be the major mechanism of cholesterol lowering effects although multiple factors would be involved for the mechanism of acupuncture.

The third step was by what pathway the needling at the point transmitted the impulses to accelerate lipid catabolism. Is that so called meridian to transmit "Chi"? The answer was the peripheral nerve, "the deep peroneal nerve" with sensory receptors in the point. When sensory nerve receptors in the point Liver Meridian 3 (Liv 3) was blocked by 1 percent novocain injection or dissection of the deep peroneal nerve at the central side of the nerve trunk needling the point lost hypocholesterolemic effects. This was reported in the Sixth International Symposium on Drugs Affecting Lipid Metabolism in 1977.

The IVth step is by what substances released after stimulating the sensory nerve of the deep peroneal nerve at the point to accelerate lipid catabolism. The author speculates some neurohumoral factors released from the pituitary gland into plasma to stimulate lipid catabolism may be the mechanism. Recently, the author makes plans to confirm the effect of the plasma obtained from rabbits needled at the point to lower serum cholesterol. Furthermore, we are going to analyze the neurohumoral factors from the plasma obtained from rabbits needled. The author expects cooperation with foreign scholars to analyze the neurohumoral factors.

Three Seminars Held under NSC-NSF Auspices in 1977-78

Joint seminars are a major cooperative activity under the ROC-U.S. Cooperative Science Program. They are convened for the purpose of exchanging information and ideas between specialists and identifying topics appropriate for consideration for cooperative research projects.

Three seminars were held between Oct. 1, 1977 and Sept. 30, 1978 with 34 Americans and 37 Chinese attending. The titles, locations, dates, coordinates, and approximate number of attendees are given below.

1. Mycolasma in Plants
   Sessions: Taipei and Tainan, Taiwan
   March 27-31, 1978
   U.S.: Randolph E. McCoy, University of Floida and 10 others
   R.O.C.: Hung-ji Su, National Taiwan University and 19 others
   Representatives from Japan and Korea were invited to attend.
2. Fermentation Engineering
   Sessions: Philadelphia, Pennsylvania
   May 30—June 1, 1978
   U.S.: Arthur E. Humphrey, University of Pennsylvania and 12 others
   R.O.C.: C.Y. Huang. National Taiwan University and 8 others
3. Marine Algae
   Sessions: Philadelphia, Pennsylvania
   Guam, June 5-7, 1978
   U.S.: Maxwell S. Poty, University of Hawaii and Roy T. Tsuday University of Guam and 8 others
   R.O.C.: Young-meng Chiang, National Taiwan University and 7 others

Representatives from Saipan, Korea, Philippines, and the Trust territory of the Pacific Islands were invited to attend the meeting.

NSC-Supported Research Projects

(Continued from last issue)

Biological, Agricultural and Medical Sciences.

Tung-bin Lo & Fore-lien Huang

NSC-68B-0203-03(06)

Chemical characterization of plasminogen activator of carp follicular fluid.

Kuang-yang Due

NSC-68B-0204-05(01)

The evaluation on the potential development of Wu-ku and Lu-chou swamps.

Yeou-der Kang

NSC-68B-0409-02(10)

Study on the indigenous tree fruits of *Actinidia* spp. in Taiwan.

P.Y. Chi

NSC-68B-0409-02(11)

Effects of ACTH (corticotropin) on gonadotropin releasing hormone of rats.

P.J. Wang & C.Y. Hu

Plant tissue culture of economic plants.
1. Clonal propagation of *Sasafras randaiense.*
2. Bulb formation of garlic *in virto.*

Chih-ning Sun

NSC-68B-0409-04(10)

Effect of the alternate use of insecticides on the development of resistance in diamond-back moth.

Wen-shyong Li

NSC-68B-0409-06(02)

Comparative studies of the active components of the leaves between *Michelia compressa* (Maxim) Sargent and *Magnolia kachirachirai* Dandy.

Yi-shiong Hang

NSC-68B-0412-02(11)
NSC-68B-0412-15(02)
NSC-68B-0412-14(03)

Survey of fracture incidence and frequency of arthopedics implants usage in Taiwan.

Tong-ming Lin

NSC-68B-0412-02(12)

An epidemiological study of twin.

Shou-hsian Mao &
Been-yuan Chen

NSC-68B-0412-06(08)

Fingerprint correspondence of hemoglobins and the relationships turtles.

Shu-yu Wang

NSC-68B-0412-20(01)

Identification of diagnostic pulse wave patterns in Orthodox Chinese medicine and verification by modern science.

Y.H. Chen

NSC-68B-0204-03(01)

Cell membrane and snake venom proteins.

Yung-chi Lee

NSC-68B-0409-02(12)

Studies on Fowl coccidiosis vaccines.

Nean Lee

NSC-68B-0409-02(14)

Studies on environmental factors on growth and flowering of *Pleione formosana* Hayata.

Cheng Chen

NSC-68B-0409-02(15)

Studies on cytogenetics plant breeding and physiology in Triticale.

Chih-chao Hsu

NSC-68B-0409-04(13)

On the study of post-harvest physiology of white asparagus stalk under different storage time and environments.

Hung-chao Lee

NSC-68B-0412-04(01)

Studies on dextrom, production from sucrose.

Fa-chun Chen

NSC-68B-0412-15(01)

The project of the research and manufacture of boneplate and screw.

Kiang F. Tam & Wei-fu Chen

NSC-68B-0409-02(19)

Comparative studies on immune response of Newcastle disease vaccines in chicken against the isolated strains from Taiwan.

Shih-chung Wang

NSC-68B-0409-04(14)

Study on soil humic substances.

T.P. Lin

NSC-68B-0409-09(04)

Cultivation of woody medicine plants (II).

S.M. Tu

NSC-68B-0412-02(18)

Study on IgG and IgA antibodies against EB virus in serum and saliva of nasopharyngeal cancer patients.

Wen-hsiung Liu

NSC-68B-0204-02(03)

Production and application of a clinical enzyme, cholesterol oxidase, from micro-organisms.

Jong-ching Su

NSC-68B-0409-02(16)

A comparative biochemical study on sucrose-polysaccharide transforming systems.

Jen-kun Lin

NSC-68B-0412-02(09)

Studies on the biochemical detection of genetic diseases. II. The relationship of polyamines with hepatocarcinogenesis.

Rong-chi Chen

NSC-68B-0412-02(16)

Effect of acupuncture on experimental epilepsy.

Shu-chen Chen

NSC-68B-0412-19(04)

Sex differences in AFB 1, reductase levels in rodent livers.

Luke L.H. Chu

NSC-68B-0412-19(05)
Radioimmunoassay. II.

Wei T. Hsieh

NSC-68B-0204-02(04)
Isolation of *E. coli* mutants defective in the synthesis of DNA-like polymers.

Shih-yow Huang

NSC-68B-0409-02(17)
Economic evaluation of methone production from hog manure in large scale units.

An-chung Lin

NSC-68B-0409-02(18)
Non-surgical transfer of goat embryos.

Chia-chin Lin

NSC-68B-0412-02(17)
Epidemiological study on cause of death among childbearing age women in Taiwan.

Engineering and Applied Sciences

Li-ching Chen

NSC-68E-0201-02(20)
The study and fabrication of double drift-field heterojunction solar cells.

NSC-Supported Research Projects

(*Continued from Page* 3)

Tsay Jong-chuang

NSC-68E-0201-04(04)

Multi-user Chinese data entry system.

Min-wen Du

NSC-68E-0201-04(05)

The design and implementation of a multi-terminal automatic Chinese information organization and retrienal system.

Jenn-hann Liou

NSC-68E-0201-04(06)

Implementation of an applicational data base management system base on the relational model.

S.M. Wu

NSC-68E-0201-04(07)

Microprocessor-based terminal control unit.

Chi-fu Teng

NSC-68E-0201-04(08)

Development on mm-wave components using image line.

C.Y. Chang

NSC-68E-0201-05(23)

Study of junction field in Pn and MS semiconductors.

Shen-li Fu

NSC-68E-0201-05(24)

Fabrications of audio amplifiers by experimentally prepared cermet pastes.

Zen Chen

NSC-68E-0201-04(09)

Misrocomputer-based image scanner and processor.

C.Y. Chang

NSC-68E-0201-05(25)

A study of high efficiency, high speed, low noise laser and optical detector.

Cheng-yi Lii & Shuh-ming Chang

NSC-68E-0402-01(01)

The applications of cross-linked starches and startch derivatives in industries.

Cheng-ching Chen

NSC-68E-0402-02(04)

Studies of decreasing packing volume of rice husk by size reduction.

H.L. Hwang

NSC-68E-0404-03(03)

Follow on project on "The research and development of CuInS2 solar cells".

Sheh-shen Chou

NSC-68E-0405-05(02)

A study of dephosphorization of hot metal by using BOF slag and Fe2O3 powder as dephosphorizing reagent.

Sin-min Tsai

NSC-68E-0404-13(01)

Design and real time of operating system for a microprocessor Z-80.

Lai-chen Chien

NSC-68E-0401-01(01)

Time dependent of the viscous flow about an impulsively started cylinder.

Kang-nang Wang

NSC-68E-0401-02(02)

Development of small type sorting machine for citrus fruits.

Ting-chia Huang

NSC-68E-0402-05(01)

Studies on the removal of inorganic ions from cane juice. Part II. Determination of limiting current densities and permselectivity coefficient.

Cheng-hsiung Lin

NSC-68E-0405-03(02)

A study for the extraction of alumina from Yangmingshan bauxite.

(*To be continued*)

ROC to Host Rice Productivity Symposium

(*Continued from Page* 1)

1800—1840	Leave for Kaohsiung by CAL
RON	Kaohsiung City
March 24, Saturday	
0830—1200	Visit Kaohsiung District Agricultural Improvement Station
1200—	Leave for Ken-Ting
1400—1600	Visit Ken-Ting Tropical Forest Park
1600—	Leave for Kaohsiung
RON	Kaohsiung City
March 25, Sunday	
0800—	Leave for Chiayi
1000—1200	Visit Chiayi Agricultural Experiment Station (TARI)
1300—	Leave for Taichung
1430—	Free
RON	Taichung City
March 26, Monday	
0830—1000	Visit National Chung-Hsing University
1030—1100	Visit Taiwan Plant Protection Center
1100—1200	Visit Taiwan Agricultural Research Institute (TARI)
1300—1500	Discussion Section (at TARI)
1500—1800	Leave for Taipei
RON	Taipei City
March 27, Tuesday	
1115—	Leave Taipei for Japan or Korea

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中華郵政台字第二七六五號執照登記爲雜誌交寄