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Wang Laboratories to Commence Operation in Science-based Industrial Park in June

The first manufacturing plant of Wang Laboratories, Inc. of the United States in the Far East will become operational in Taiwan in June or July this year, Dr. Wang An, founder and chairman of the computer and electronic calculator producer, reported in Taipei last month.

Speaker at a press conference upon his arrival in Taipei on March 27, the Shanghai-born scientist reported that the plant, located at the Science-based Industrial Park in Hsinchu, will produce about 200 sets of mini-computers during the initial period of its operation. All the products will be sold in Taiwan.

The US\$2 million plant will employ 50 to 60 skilled workers this year. More workers will join the plant in

the future, Dr. Wang said.

Analyzing the prospects of the computer industry in the world, Dr. Wang said computers will be increasingly used in both the developed and developing countries in the years to come.

Wang's company rang up US\$450 million in sales revenues last year. Sales this year will increase to &SS600 million, he predicted.

To accommodate its rapid growth, Wang Laboratories recently relocated its administrative headquarters and research and development operations from Tewsbury to a new facility in Lowell, Mass. The size of the new facility, Dr. Wang said, almost doubles that of the old one.

In addition to the Hsinchu plant,

Wang Laboratories is planning to set up another plant in Ireland this year.

Wang Laboratories will also initiate a training program for masters in software engineering at its training school at Lowell, Mass., starting this September.

The company also cooperates with the Industrial and Technology Institute at Hsinchu for the training of local students in the computer science. By July this year, 30 Chinese students will complete their training course at the Wang Laboratories and will return to Taiwan to work at Wang's plant in Hsinchu.

During his week-long stay here, Dr. Wang will inspect the plant and visit local universities.

720 Experts Attend Food Seminar

An International Symposium on Recent Advances in Food and Technology was held in Taipei last January with 120 foreign scientists and 600 specialists taking part.

Addressing the three-day meeting, Premier Sun Yun-suan said the Republic of China is formulating long-range, medium-range, and short-range plans for scientific and technological development and added that "we hope that in carrying out these plans we can orchestrate the efforts of all academic research institutions and develop a cooperative approach which will capitalize on the division of labor made possible by the specialties of each."

Economics Minister Chang Kwang-shih, who also addressed the opening session, said the Republic of China is anxious to establish a modern food processing industry.

He said "Among many reasons, the following may be cited. First, as our people get more and more affluent, the demand for better and more nutritious food becomes stronger and stronger. Secondly, the changing eating habit of most people requires food in convenient form. Thirdly, it is of utmost importance economically to upgrade and improve agricultural products for better utilization as food or feed. Furthermore, to ensure the exportation of our farm produce, we have to offer products of the highest quality so as to earn the foreign exchange needed to import vast quantities of grains. Here, you may be interested to know that the Republic of China imports 516 million tons of grains annually as food and feed."

Robert Lee, chairman of the Council for Agricultural Planning & Develop-

ment, briefed the participants on the food-processing industry in the Republic of China.

The local food-processing industry consists of:

1) Rice-grinding, sugar-refining and flour-milling: In 1978, flour production totaled 480,000 M.T. and sugar and its products amounted to 1,060,000 M.T. in total output, most of which were exported to earn US\$74 million in foreign exchange.

2) Livestock and related products: Statistics of the 1978 Business and Industry Survey showed that livestock slaughtered was valued at US\$117 million, dairy products at US\$42 million, and feed at US\$680 million. Most of the products in this category are for the domestic market.

3) Canned and frozen foods and tea manufacture: With the largest labor force, assets and production value and

drawing all their raw materials from the agricultural sector, these industries have a vital bearing upon agricultural development and farm incomes. The exports account for about one-half of total agricultural exports.

Canned asparagus and mushrooms earned US\$113 million and US\$100 million, respectively, in foreign exchange in 1978. In the same year, processed vegetables and canned fruit sold for US\$270 million in the international market, processed fishery products for US\$87 million, and tea for US\$29 million.

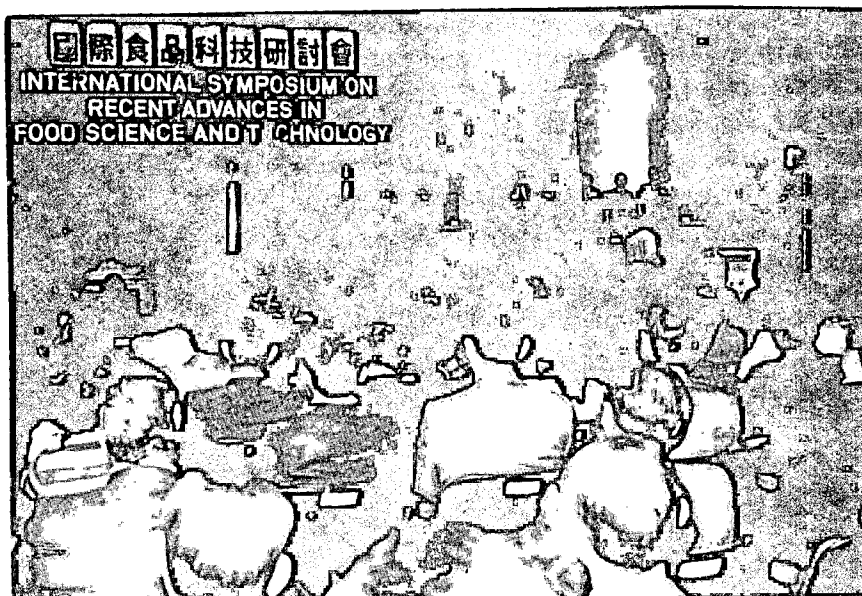
4) Edible oils, condiments and biscuits based on imported grain: Massive grain imports and modernization of equipment has led to a fast pace of growth in these industries. Soybean oil, for instance, rose in 1977 to 100,000 M.T. in out-put, an increase of over three times.

5) Fruit juices, beverages and cigarettes: Demand for these products surges as a consequence of rising national income; it is expected to maintain the same trend.

In a special report on the changing pattern of agricultural production in Taiwan, Minister Without Portfolio K.T. Li said the fast growth of Taiwan's economy and the increase in its national income have brought about not only the demand for higher standard of nutrient intake, but also changes in the structure of food consumption.

"Our people no longer worry about the quantity of food supply; they are more and more concerned about its quality in terms of nutrition and taste," he said.

Because of this change in consumption pattern, livestock production has expanded considerably, while the production of crop fell off substan-



Premier Sun (on rostrum) speaks at opening ceremony of International Symposium on Recent Advances in Food Science and Technology held in Taipei.

tially. And large quantities of cereals and grain have been imported every year since 1965, with the import volume rising from 60,000 metric tons in 1965 to 3.88 million metric tons in 1978, he said.

Li said Taiwan's livestock production grew at a tempo of 7.3 percent a year between 1953 and 1978. In 1953 it accounted for only 18 percent of the total value of farm produce and livestock, but in 1978 the proportion rose to 40 percent.

On the other hand, the total value of crop production decreased from 82 percent in 1953 to 60 percent in 1978, with rice being the major item affected.

Rice output dropped from 50 percent to 25 percent of the total value of agricultural produce and livestock. Other items affected included

common crops such as sweet potatoes.

Vegetable and fruit production accounted for only 2 percent and 3 percent, respectively, of the total value of agricultural produce and livestock in 1953. But in 1978 they accounted for 7.5 percent and 13.8 percent, respectively, Li said.

To keep up with the changing pattern of agricultural production, the Republic of China has been making efforts in such areas as grading, storage, processing, packaging, and waste utilization, he said. Li also disclosed that the Food Industry Research and Development Institute in Taiwan has developed a new packaging and storage method for large scale preservation of refined rice. The method involves the use of plastic bags filled with carbon dioxide or nitrogen.

NSC-Supported Research Projects

Engineering and Applied Sciences

Wu-nan Wen

NSC-69B-0412-02(04)

DNA repair and sister chromatid exchange

Wen-kuo Ting

NSC-69B-0412-15(02)

Estimating the level of high density lipoprotein cholesterol in the serum of normal Chinese

Ping-chin Fan

NSC-69B-0412-19(03)

1. Comparative studies on prevalence,

of common intestinal parasites in tap-water and non-tap-water supported areas on Taiwan

2. Determination of efficacy of the minimum effective dose of new broad anthelmintics against the common intestinal parasites

Chun-hsiung Chen

NSC-69E-0201-02(20)

A variational principle for electromagnetic fields and its application

Wei-tzen Yang

NSC-69E-0201-02(21)

A study on optimum control of Taipower system

Ching-yuan Wu

NSC-69E-0201-04(14)

Correlations of chemical vapor deposition and plasma etching techniques and their applications in integrated circuit fabrications

Kuan-kin Chen

NSC-69E-0201-04(15)

Microprocessor controlled TDM switching system

Cheng Chen

NSC-69E-0201-04(16)

The design and implementation of small laboratory automation system

Chi-fu Teng
NSC-69E-0201-04(17)
Waveguide cavity stabilized impatt oscillator

Ching-yuan Wu
NSC-69E-0201-04(18)
Silicon-on-sapphire (SOS) techniques and their integrated circuit applications

Kuang-sen Meng
NSC-69E-0201-04(19)
Manufacture of surface acoustic wave pulse compressor

Che-ho Wei
NSC-69E-0201-04(20)
Noise cancelling by adaptive filters

Kuang-chih Huang
NSC-69E-0201-04(21)
Design and fabrication of a proto-type laser machine

C. Y. Chang
NSC-69E-020105(30)
The study and fabrication of resistive gate MIS varactors

Tien-shou Wu
NSC-69E-0201-05(31)
High efficiency high radiance LED for fiber and display App.

Natural Sciences and Mathematics

Der-shin Chang
NSC-69M-0204-03(06)
The order determination and Kalman filter approach to time series

C. J. Tung
NSC-69M-0204-03(07)
Penetration of electrons in condensed media (II)

Fu-shong Kuo
NSC-69M-0204-06(04)
Study of the fluctuation of cosmic ray nuclei composition and energy spectra during quiet time

Anh Tran
NSC-69M-0202-01(04)
Study on the statistical characteristics of lightnings in Taipei

W. H. Tsai
NSC-69M-0202-06(05)
A study of troposphere-ionosphere relationship (I) The structure of ionosphere over Taipei and the influence caused

Wen-shuo Kuo
NSC-69M-0202-08(01)
A research of typhoon precipitation forecasting in Tan-Shui River watershed

Chun Fu Su
NSC-69M-0204-17(02)
The application of 3j symbols to the treatment of the relative intensities of the rotational spectrum

Lai-chen Chien
NSC-69M-0202-02(04)
On primitive equations model over the East Asia

Teh-chang Chou
NSC-69M-0204-24(01)
Effect of cyclobutane ring in solvolysis reactions

Biological, Agricultural, and Medical Sciences

Yee-hsiung Chen
NSC-69B-0203-03(03)
Biochemical studies of cobra cardiotoxin, α - and β -bungarotoxin and their activities on the cell membranes

Der-fang Jan
NSC-69B-0409-04(12)
Utilization of acidulated soapstock as a replace substance of Tallow for poultry feeds

Roger F. Hou & Alain G. J. Liaw
NSC-69B-0409-04(15)
NSC-69B-0409-08(03)
Artificial rearing of the silkworm, *Bombyx mori* L. - Part 1: Development of the basal diet and rearing techniques

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NSC-69B-0412-02(15)
Immuno-serological studies on patients in early stage of NPC

Shiu-hsiung Chao
NSC-69B-0412-06(08)
Descriptive study of CVA mortality rate in Taiwan area

L. C. Tsai
NSC-69B-0412-15(05)
Factors contributing to the induction and expression of T suppressor cells

K. T. Wang
NSC-69B-0203-03(04)
Synthesis of snake venom cardiotoxin, a) Synthesis of active site peptides; b) Enzymic synthesis of Met-Phe-Met, (Met)₄

Chi Sun
NSC-69B-0204-17(04)
Comparative studies of CHO and OVCA cells after ionizing radiation and hyperthermia combined treatments

Nean Lee
NSC-69B-0409-02(08)
Studies on light intensity, nutrients

and plant hormones on yield and flowering of *Pleione formosana*

Yaw-huei Lin
NSC-69B-0409-03(01)
Studies on the relationship between proteinase inhibitor activities and month of harvest (2nd year)

Kuang-yang Lue
NSC-69B-0409-05(02)
The evaluation on the potential development of Wu-Ku and Lu-Chow Swamp (2)

Shieh-ching Yang
NSC-69B-0412-02(16)
Fine surface structure of common lung cancer cell - A study by scanning electron microscope

M. T. Lin & M. T. Tsai
NSC-69B-0412-06(09)
Effects of Beta-endorphin and morphine on thermoregulatory function

Ching-yih Chen
NSC-69B-0409-04(18)
Studies on photosynthesis capacity and photorespiration of crops

Ching-huan Cheng
NSC-69B-0409-08(05)
Determination of the economic injury levels of the rice green leafhopper on rice

Ti-sheng Lu
NSC-69B-0409-17(01)
The effect of γ -irradiation on the germination and seedling growth of rice seeds with high water content

S. W. Huang & H. S. Lo
NSC-69B-0412-06(21)
Determination of testosterone in *Ascaris* by radioimmunoassay

Shin-chieh Shen
NSC-69B-0204-02(05)
Study on marine fish-fauna of Taiwan (III-I)

Tzo-chuan Juang
NSC-69B-0409-04(19)
Studies on ammonium adsorptive nature and nitrogen supplying capacity of paddy soils, II. Desorption of adsorbed ammonium, and III. Effects of micronutrients on the mineralization rate of soil nitrogen.

Mao-hsiung Yen
NSC-69B-0412-06(18)
The effect of Lithium on electrolyte transport by the insitu isolated choroid plexus of the cat

Subsurface Water Exploration in the Taoyuan-Chungli Area, Northern Taiwan

Chieh-Hou Yang, Associate Professor
of Geophysics
Graduate School of Geophysics
National Central University
Ted Ta-Hsiang Yao, Senior Research
Associate
National Science Council

During the period of 1977-1979, an extensive geoelectrical investigation in the Chungli-Taoyuan area ($121^{\circ}3'18''\text{E}$, $24^{\circ}59'25''\text{N}$) was carried out by the National Central University under the subsidization of National Science Council. The aims of the first year (1977-1978) were the following:

- (1) development of a general picture of the subsurface and a relatively detailed resistivity model for shallow features.
- (2) evaluation of the usefulness of electrical resistivity measurements in hydrological exploration work in a gravel covered area.
- (3) detection of potable ground water distribution in the coastal plain and the fresh/salt water conditions along the coastline.

The objectives of the second year (1978-1979) were:

- (1) to search for and delineate water-bearing, relatively permeable, loose sediments in the gravel covered area.
- (2) to provide a geophysical interpretation.
- (3) to compile a map of the ground water flow pattern based on resistivity data obtained during the 1977-1979 interval.

At the present time, with an increasing number of new and proposed facilities and developments (e.g., Nei-hai industrial district, Chiang Kai-Shek International Airport, and Taoyuan industrial district, etc.), the growing population, and the expansion in agriculture, the demand for reliable supplies of potable and industrial water is rapidly increasing in the studied area. The Shihmen reservoir, due to rich precipitation within the October/March and May/June intervals, has provided sufficient water for this area prior to these developments. But these new developments and

facilities bring up an increasing need of additional water supplies. Thus an intensive survey of the Taoyuan terrace deposits, heretofore, considered ground water poor, was proposed. Employing new vertical electrical sounding techniques, (VES), a geophysical interpretation was made and applied. The major results of this project are that the geoelectrical method VES can be successful in a thick gravel covered region and that possible aquifers have been detected in the Taoyuan terrace.

Observations made by resistive-profile mapping methods revealed the more favorable regions containing major aquifers and related aquifers. Although in areas where the gravel deposits are the thickest, the resistivity maps reveal but few indications of aquifers. The best major and related aquifers are sand beds within sand-clay (S-C1) alternation units underlain the gravel beds. The lithological sections obtained from the VES and wells suggest a layered model as shown in Fig. I and II.

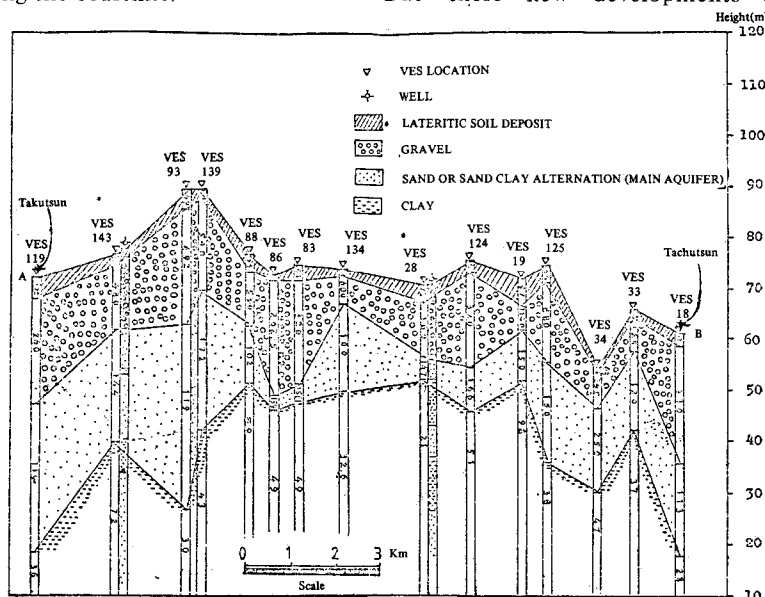


Fig. I. Stratigraphic Section AB; N 80° E from Takutsun to Tachutsun.

A low resistivity (40-110 $\Omega\text{-m}$) lateritic soil with a thickness less than 10 m overlies high resistivity (300-1,200 $\Omega\text{-m}$) beds. There is a close correlation between the interpreted position of the water table based on geoelectrical methods and the actual depth to water found in some wells. In the surveyed area, most of the wells are of shallow depth (less than 8 m)

while a few deep wells are concentrated in Taoyuan and Neihai districts only. These circumstances deeply influenced the precision for the estimation of the volume of aquifers at depth deeper than 70 m. Numerical simulation through modelling will improve the resolution of VES and a new project has been approved by the National Science Council for that purpose.

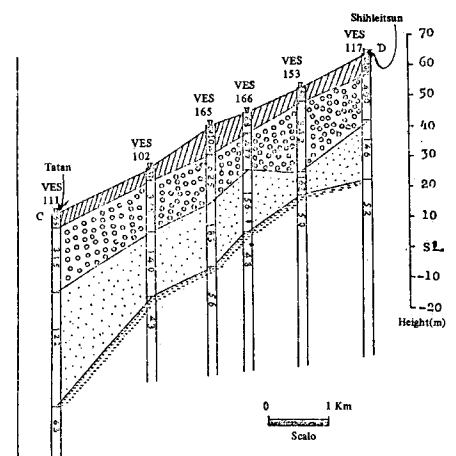
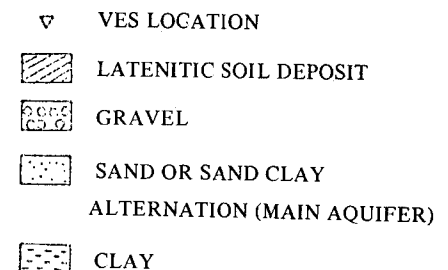


Fig. II. Stratigraphic Section CD from Tatan to Shihleitsun. (SL: Sea Level)