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SCIENTIFIC INFORMATION REPORT

CHINESE SCIENCE

(29)

Summary No. 4862

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Prepared by

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C-O-N-F-I-D-E-N-T-I-A-L

SCIENTIFIC INFORMATION REPORT  
Chinese Science (29)

This is a serialized report consisting of unevaluated information prepared as abstracts, summaries, and translations from recent publications of the Sino-Soviet Bloc countries. Individual items are unclassified unless otherwise indicated.

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REVIEW OF 1962 ACCOMPLISHMENTS

CHINESE COMMUNIST ACTIVITIES IN THE NATURAL SCIENCES SURVEYED -- Kewloon,  
Tsu-kuo Chou-k'an (China Weekly), Vol 24, No 9, Mar 63, pp 200-206

[The following is a full translation of an article,  
"1962 Activities of the Chinese Communists in the Natural  
Sciences," by Wu Leng (0702/0397).]

In a speech made in January 1962, Chinese Communist Vice-Premier Ch'en I said: "In order to realize, solidify, fulfill, and promote our policies, the fruitful experiences of the last few years in science and technology and in culture and education have recently been consolidated ...in order to establish concrete policies and procedures for all items ..., and many good patterns have been established. In the future, further progress and improvements must be made and better management attained." Ch'en I also requires of those in the field of science and technology that they "produce results and produce personnel" (Chung-kuo Ch'ing-nien [China Youth], No 2, 1962). This year, the scientific work of everyone on the mainland, from central to local levels, is uniformly following the path indicated by Ch'en I.

During the latter part of September 1962, an announcement by the Tenth Plenum of the CCP (Chinese Communist Party) insisted that "research in science and technology must be strengthened, particularly research in the agricultural sciences; personnel in this field must be greatly strengthened." Accordingly, the State Scientific and Technological Commission and the Ministry of Agriculture held a conference in early October, in Peiping, of representative agricultural scientists to discuss strengthening of research work in the agricultural sciences and the problems of agrotechnical units. The Chinese Communist Premier Chou En-lai indicated that "the agrotechnical revolution is the essential link in the present development of agriculture." Under this miasma, the movement to develop and support the agrotechnical revolution spread throughout all scientific units by the end of 1962.

The emphasis placed by the Chinese Communists on science and technology was raised to a new level at the conclusion of 1962 and during the early part of 1963. In addition to the expression of various forms of eulogies of scientists (for example, receptions held by the Chinese Communist leaders during holidays for scientists and their families; the Chinese Communist leaders held long and "intimate" conversations with scientists, etc.), the Chinese Communists, following the speech made by Chou En-lai in Shanghai at the end of January 1963, emphasized the crucial interrelation of the modernization of agriculture, industry,

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national defense, and science and technology, giving first place to the modernization of science and technology (Jen-min Jih-pao, 31 January 1963). The following is a summary report of the scientific and technological tasks emphasized by the Chinese Communists in 1962:

A. Scientific and Technological Support for Construction

The authoritative organ of the CCP Central Committee, Hung Ch'i, No 11, 1962, carried an editorial requiring that scientific and technical personnel, while "showing results" in building the national economy, must also:

1. Participate in research and the solution of concrete scientific and technological problems.

2. Participate in research, observation, discussion, and the resolution of technical policies and important technological programs.

This editorial also listed 11 concrete problems in technological policies and technological programs that urgently required solution:

1. The determination and improvement of plowing systems for farmland.

2. The selection of improved varieties [of crops].

3. Selective cutting and newer methods of clearing forests.

4. Improvements in hydraulic engineering and [water conservancy] and its advantageous principles.

5. The selection and propagation of important new technologies and techniques.

6. The location of various kinds of industrial raw materials and plan completion [in this field].

7. Efficiencies of various fuels and power machinery.

8. Different levels of mechanization and automation of productive units.

9. Any plans for the rational employment of physical capital and physical conditions.

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10. Which products, grains, or economic crops should form the bases in which areas.

11. Which industries should be established in which areas.

Accordingly, an editorial in Kuang-ming Jih-pao, 9 September 1962, pointed out that the scientific and technical activities of the specialized natural science societies ought to be increased because these scientific and technological activities of these specialized societies would be particularly valuable for the research and discussions carried on by scientific and technical personnel. According to reported statistics, scientific and technological conferences of the natural sciences held during 1962 by the Chinese Communists showed an increase; not less than 55 were held (see listing below).

In comparison with the 32 "national scientific and technological conferences" held and the over 2,000 papers submitted in 1961 (Kuang-ming Jih-pao, 9 September 1962), it appears that the Chinese Communists have almost doubled the amount of this sort of activity.

In addition to these "national scientific conference" activities, the provincial and municipal branches of these societies have increased the frequency of their activities. There is some evidence that the Chinese Communists may possibly urge that independent forms of activities replace enforced forms in order to encourage participation on the part of the intelligentsia and thus achieve scientific progress and improved production.

In addition, the leading administrative units in some areas have held conferences soliciting the opinions of scientific and technical personnel on the requirements for local production. For example, the "Antidrought Problems Symposium" held in Peiping in mid-November 1962, and attended by specialists in water conservancy, irrigation, hydrography, meteorology, soils, and plant breeding, asked for their attention and suggestions on antidrought problems. Over 400 conferences were held by over 1,000 teachers and engineers in Tientsin during August, September, and October to discuss plans for the development of Tientsin's agricultural economy. Jen-min Jih-pao has also paid editorial attention to this matter, saying that this spirited leadership of scientific and technological personnel formed a model that ought to be emulated as an "important method of work" (Jen-min Jih-pao, 12 December 1962).

Besides these few exceptional cases, the various local scientific research activities are carried on within the framework of the local tasks of productive economic construction. For example, 20 items were listed in Hunan Province during July 1962 as the important research tasks of science and technology for that year; these covered four fields: (1) the important technical problems of agricultural production such

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as the selection of types of agricultural produce; (2) expansion in the use of effective agrochemicals, the employment of anthracite coal as a power fuel, and other important technological problems in support of agricultural production; (3) comprehensive use of Glauber salts, research on uncultivated fibers and chemical fibers, and other important technological problems in the use of resources; (4) research on radiochemistry and other important medical and technical problems for protecting labor. All of these problems are closely related to productive construction in that province (broadcast of the Hunan Jen-min Tien-t'ai [Hunan People's Radio Station] on 23 July).

1962 Chinese Communists Conferences in Natural Sciences

[In the following listing, the scientific field is followed by the number of conferences, in parentheses, and the number of papers submitted at the conferences.]

Astronomy, 2, over 80 papers  
Meteorology, 1, over 380 papers  
Mathematics, 1, 43 papers  
Mechanics, 1, 71 papers  
Physics, 4, over 470 papers  
Biology, 15, over 1,460 papers at 9 of the conferences  
Hydraulic geology, 6, 1,130 papers at 3 of the conferences  
Geography, 2  
Psychology, 1, over 100 papers  
Textile engineering, 1, 58 papers  
Metrology, 2, 77 papers  
Civil and architectural engineering, 3, 284 papers at 2 of the conferences  
Chemical engineering, 6, 65 papers at 5 of the conferences  
Mechanical engineering, 3, 185 papers at 2 of the conferences  
Marine engineering, 1  
Electrical engineering, 2, 58 papers at one of the conferences  
Metallurgical engineering, 1, 69 papers  
Automation, 1, 54 papers  
Pharmaceuticals, about 880 papers at 2 of the conferences  
TOTALS: 59, over 5,660 papers

b. Development of Scientific Manpower

To overcome the problems of a low level of scientific knowledge and the small number of scientific and technological personnel, the Chinese Communists have directed the slogan "study without respite, every man untiring" to their new and old scientists. Furthermore, completeness is sought for in the style of work, in contrast to the empty boasting of the "great leap forward" era. In mid-1962, the important newspapers

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and periodicals published many speeches by Chinese Communist leaders and prominent scientists encouraging youth to study science and, in doing scientific research, to "tread firmly," "concentrate one's whole will," "devote one's self entirely to one's occupation, sacrifice one's self to research."

The Chinese Communists have selected and cultivated scientific manpower; in 1962, at least according to what they say, the changes have been clearer and more obvious than before. These changes have been prominently set forth within an article, entitled "Concerning the Selection and Cultivation of Scientific Personnel," appearing in the No 17 Hung Ch'i. In the past, the Chinese Communists have repeatedly stressed the "omnipotence of the masses" and believed that no specialist, however brilliant, could surpass the majesty of the practical productive experiences of the "laboring peoples." Mao Tse-tung, in his work "Reforming the Style of Work of the Party," also mocks those intelligentsia who are products of academic training, saying that they, in reality, are the most ignorant (Selected Works of Mao Tse-tung, Volume 3, pages 817-818). The mainland policy that has prevailed the last few years of "sending-down to labor" was also determined by this point of view. But, in the above-mentioned Hung Ch'i article, it is particularly emphasized that: "What is really needed is that the work of a few outstanding scientists be made the foundation on which the laboring masses will construct history and that this work find a place in scientific history along with the greater and lesser accomplishments of general scientific personnel." "The scientific level of a particular generation ought also to be represented by a group of this sort of outstanding persons; this conforms to the pattern of historical development." This article also proposes that the experiences of the outstanding personnel in the conscientious research of modern science and study of the methods of the outstanding scientists of the Soviet Union, Germany, England, and the US be made the nucleus of scientific and technological research and form the scientific basis for "producing results, producing personnel." The nature of this article is almost an editorial reflecting the views and attitudes of the Chinese Communist leaders toward present problems.

A dispatch of the Hsin Hua She (New China News Agency) for 26 January 1963 regarding the definite level of scientific knowledge of the newly produced personnel states that, from 1955 to the present, the Chinese Academy of Sciences has already produced 99 researchers in the fields of physics, chemistry, mathematics, geophysics, radio electronics, geology, geography, metallurgy, machinery, civil engineering, biology, and paleontology. There are also over 400 researchers now studying in the Academy of Sciences whose research objectives fall within such new important fields of study as electromagnetic fluid mechanics, quantum electronics, cybernetics, geochemistry, atmospheric dynamics, low-temperature physics, nuclear physics, etc. As over 7 full years have elapsed since 1955, the average number of research students

recruited each year by the Chinese Academy of Sciences is about 70. According to the regulations established by the Chinese Communist Academy of Sciences for research students, there is a 4-year course of study for research students. Therefore, there ought to have been four graduating classes from 1959 to 1962. During these 4 years, the average number of graduates would then be 25 persons. It can be seen that the present 400 students could all graduate before 1966. The average number would then be about 100 per year. The Chinese Communists cannot at present rely on the support of Chinese scientists studying in the West; in addition, the opportunities are decreasing for sending students abroad to the Soviet Union and to Eastern Europe to study. For the next 10 to 12 years, the shortage of senior scientists will continue to be the Chinese Communists major obstacle to scientific progress.

### C. Publication of Scientific Work

Both the number and importance of Chinese materials published during 1962 have increased, even discounting the works about Chinese communism and those works translated from the Russians. For example, advertisements in the Jen-min Jih-pao on 25 May, 14 August, 25 October, and 27 December 1963 announcing new publications by the K'o-hueh Ch'u-pan She (Science Press) show a total of 83 volumes of new scientific publications. Among these, 33 volumes were written by Chinese specialists, 26 were translated from the Russian, 13 volumes were translated from other languages, and the status of another 11 volumes was unclear. When one considers the unadvertised and publicly printed materials of the Kuo-fang Ch'u-pan She (National Defense Press) and other organizations, this number can be seen to be even larger.

It is worthy of note that the Chinese Communists publish large-scale comprehensive works known as "records" in such fields as biology and geology. Of these the most prominent are:

Chung-kuo Chih-wu Chih (Chinese Botanical Records). Eighty-six volumes are planned, totaling 28 million [Chinese] characters; 12 volumes have been completed to date.

Chung-kuo Ching-chi Tung-wu Chih (Chinese Economic Animal Records). Seven volumes have been published of which one, Pei-lei-hsueh Kang-yao (A Summary of Conchology), is 500,000 characters long.

Chung-kuo Ching-chi K'un-ch'ung Chih (Chinese Economic Insect Records). Four volumes have been published.

Chung-kuo Ko-men-lei Hua-shih T'ung-hsu (A Compendium of Various Chinese Fossils). This work summarizes 120 years research and over 1,000 papers dealing with foreign and domestic fossils related to China. It is planned that the work, to be completed in 1963, will consist of 8 million characters.

Chung Kuo Fen-lei Yu-lei Chih (Records Of Chinese Fish Species). Eight volumes of a projected 50 volumes have been completed.

In addition, there is a work to be compiled by the various institutes of the Academy of Agricultural Sciences which will be a compendium on animal rearing; a great many works have already been published on cotton, mulberry trees, corn, vegetables, sugar cane, tobacco, peanuts, rice, wheat, and other plants. For example, the work Chung-kuo Shui-tao Tsai-p'ei-hsueh (Chinese Rice Culture) consists of some 800,000 characters. The majority of these works have the following three characteristics in common:

1. The contents are comprehensive, including all the branches of that field of study.
2. The material discussed in the work covers all areas of China.
3. Each volume is edited by the most outstanding specialist on the mainland in that field; during the writing, the greatest care is taken to assemble all of the relevant domestic and foreign research materials and results. From this, it can be seen that their technological and scientific value can be considerable.

Among some of the important works in other fields are: Wu-li Li-hsueh Chiang-i (Lectures on Physics and Mechanics), compiled by Ch'ien Hsueh-sen (6929/1331/2773), director, Institute of Mechanics; Shou-j'ung Je-ho Fan-ying (Controlled Thermonuclear Reactions), edited by Prof Hsu Kuo-pao (6079/0948/0202), of East China Normal University, and others; Hsien-tai Wei-fen Chi-ho-hsueh Kai-lun (The Concepts of Modern Differential Geometry), edited by Vice-President Su Pu-ch'ing (5685/2975/7230), Fudan University; and Shu-li Lo-chi Kai-lun (The Concepts of Mathematical Logic), edited by Wang Hao (3769/3185). (References to the above scientific material appear in 1962 issues of Jen-min Jih-pao, Kuang-ming Jih-pao, K'o-hsueh T'ung-pao, and other publications.)

As regards periodicals, according to present statistical material, the number of scientific and technical periodicals of national scope published by the editorial boards of the various specialized scientific societies under the State Scientific and Technological Commission has now grown to 64 titles. In addition, there are 6 being prepared for publication; furthermore, the China Institute of Scientific and Technological Information published 30 titles containing scientific and

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technical abstracts and indexes during 1962. These are published monthly and regularly report on world scientific literature published in Russian, English, German, Japanese, and other languages; 21 classes of scientific and technical abstracts comprising 64 titles are published monthly or semimonthly; scientific and technological "express bulletins" totaling 23 titles are published semimonthly or trimonthly; 21 titles of scientific and technological "collected translations" and "activities" are published monthly.

According to Jen-min Jih-pao for 14 December 1962, 31 January, 13 February, and 4 March 1963 and Kuang-ming Jih-pao of 10 May, 12 October 1962, and 5 February 1963, the names and periodicity of all of the currently published Chinese Communist periodicals are as follows:

Chung-kuo K'o-shueh (Scientia Sinica) (foreign language edition), monthly;

K'o-hsueh T'ung-pao (Scientia), monthly;

Tsung-ho K'o-chi Wen-hsien So-yin (Comprehensive Index of Scientific and Technological Literature), monthly;

T'ien-Wen Hsueh-pao (Acta Astronomica Sinica), semiannual;

T'ien-wen Hsueh-pao Fu-k'an (Acta Astronomica Sinica Supplement), semi-annual; and Ti-ch'iu Wu-li Hsueh-pao (Acta Geophysica Sinica), semi-annual;

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- Ti-ch'iu Wu-li'hsueh, T'ien-wen-hsueh Wen-hsien So-yin (Index to Geophysical and Astronomical Literature), monthly;
- Ti-ch'iu Wu-li K'an-t'an Wen-chai (Geophysical Prospecting Abstracts), monthly;
- Shu-hsueh Hsueh-pao (Acta Mathematica Sinica), quarterly;
- Shu-hsueh T'ung-pao (Mathematics Bulletin), monthly;
- Shu-hsueh Chin-chan (Progress in Mathematics), quarterly;
- Li-hsueh-pao (Acta Mechanica Sinica), quarterly;
- Shu-hsueh Wen-hsien So-yin (Index of Mathematical Literature), monthly;
- Li-hsueh Wen-hsien So-yin (Index of Literature on Mechanics), monthly;
- Li-hsueh Wen-chai' (Mechanics Abstracts), Series 1, 2, 3, all monthly;
- Shu-hsueh Wen-chai (Mathematics Abstracts), Series 1, 2, 3, all monthly;
- Wu-li Hsueh-pao (Acta Physica Sinica), monthly;
- Wu-li T'ung-pao (Physics Bulletin), bimonthly;
- Wu-li Wen-hsien So-yin (Index of Physics Literature), monthly;
- Wu-li Wen-chai (Physics Abstracts), series 1, 2, 3, all monthly;
- Pan-tao-t'i K'uai-pao (Express Bulletin on Semiconductors), semimonthly;
- Wu-li I-ts'ung (Collected Translations on Physics), monthly;
- Tien-tzu Hsueh-pao (Acta Electronica Sinica), (planned);
- Yuan-tzu-neng (Atomic Energy), monthly;
- Yuan-tzu-neng I-ts'ung (Collected Translations on Atomic Energy), monthly;
- Ho-tzu-neng Wen-hsien So-win (Index of Literature on Nuclear Energy), monthly;
- Yuan-tzu-neng K'uai-pao (Express Bulletin on Atomic Energy), semimonthly;
- Ch'i-hsiang Hsueh-pao (Acta Meteorologica Sinica), quarterly;
- Ti-chih Hsueh-pao (Acta Geologica Sinica), quarterly;

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- Ti-li Hsueh-pao (Acta Geographica Sinica), quarterly;
- Ts'e-hui Hsueh-pao (Acta Geodetica et Cartographica Sinica), quarterly;
- Hai-yang yu Hai-chao (Oceans and Lakes), quarterly;
- Ti-li (Geography), bimonthly;
- Ti-chih K'o-haueh (Geological Science), quarterly;
- Chung-kuo Ti-chih (Chinese Geology), monthly;
- Ti-chih Ti-li Wen-hsien So-yin (Index to Geological and Geographical Literature), monthly;
- Ts'e-hui Wen-hsien So-yin (Index to Literature on Geodetics and Cartography), monthly;
- Ti-chih Wen-chai (Geology Abstracts), Series 1, 2, both monthly;
- Ti-chih K'uai-pao (Express Bulletin on Geology), semimonthly;
- Ti-chih I-ts'ung (Collected Translations on Geology), monthly;
- Ts'e-hui I-ts'ung (Collected Translations on Geodetics and Cartography), monthly;
- Ku-shen-wu Hsueh-pao (Acta Paleontologica Sinica) quarterly;
- Ku-chi-hui Tung-wu yu Ku-jen-lei (Vertebrate Paleontology and Paleanthrology), quarterly;
- Sheng-wu-hsueh T'ung-pao (Biology Bulletin), bimonthly;
- Tung-wu Hsueh-pao, (Acta Zoologica Sinica), quarterly;
- Chih-wu Hsueh-pao (Acta Botanica Sinica), quarterly;
- Ku-un-ch'ung Hsueh-pao (Acta Entomologica Sinica), quarterly;
- Wei-sheng-wu Hsueh-pao (Acta Microbiologica Sinica), quarterly;
- Sheng-wu-hua-hsueh yu Sheng-wu-wu-li Hsueh-pao (Acta Biochimica et Biophysica Sinica), quarterly;
- Shih-yen Sheng-wu Hsueh-pao (Acta Biologica Experimentia Sinica), semi-annual;

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- Tso-wu Hsueh-pao (Journal of Crops), unknown periodicity;
- Chih-wu Pao-hu Hsueh-pao (Journal of Plant Protection), unknown periodicity;
- Yuan-i Hsueh-pao (Acta Horticultura Sinica), unknown periodicity;
- Sheng-wu-hsueh Wen-hsien So-yin (Index of Biological Literature), monthly;
- Sheng-wu-hsueh Wen-chai (Biological Abstracts); series 1, 2, 3, 4, all monthly;
- Sheng-wu K'o-shueh Tung-t'ai (Biological Science Activities), monthly;
- Sheng-wu-hua-hsueh Wen-chai (Biochemistry Abstracts), monthly;
- Sheng-li Hsueh-pao (Acta Physiologia Sinica), quarterly;
- Chieh-p'ou Hsueh-pao (Acta Anatomica Sinica), quarterly;
- Hsin-li Hsueh-pao (Acta Psychologica Sinica), quarterly;
- Sheng-li K'o-hsueh Chin-chan (Progress in Physiological Science), quarterly;
- T'u-jan Hsueh-pao (Acta Pedologica Sinica), quarterly;
- T'u-jang T'ung-pao (Soil Bulletin), bimonthly;
- Lin-yeh K'o-hsueh (Forestry Science), quarterly;
- Shui-li Hsueh-pao (Journal of Water Conservancy), bimonthly;
- Chung-kuo Nung-pao (Tiniest agriculture), unknown periodicity;
- Chung-kuo Lin-yeh (Chinese Forestry), unknown periodicity;
- Chung-kuo Nung-yeh K'o-hsueh (Chinese Agricultural And Forestry Sciences), unknown periodicity;
- Nung-yeh Chi-shu (Agricultural Technology), unknown periodicity;
- Chung-kuo Nung-yeh Chi-hsieh (Chinese Agricultural Machinery), monthly;
- Nung-yeh Chi-hsieh Hsueh-pao (Acta Agromechanica Sinica), quarterly;
- Nung-yeh Chi-hsieh Chi-shu (Agricultural Machinery Technology), monthly;

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- Hsu-mu Shou-I Hsueh-pao (Journal of Animal Husbandry and Veterinary Medicine), unknown periodicity;
- Chung-kuo Hsu-mu Shou-I (Chinese Animal Husbandry and Veterinary Medicine), unknown periodicity;
- Lin-yeh Wen-hsien So-yin (Index of Forestry Literature), monthly;
- Nung-yeh Wen-hsien So-yin (Index of Agricultural Literature), monthly;
- Shui-ch'an Wen-hsien So-yin (Index of Aquatic Products Literature), monthly;
- Shui-li Kung-ch'eng Wen-hsien So-yin (Index of Hydraulic Engineering Literature), monthly;
- Lin-yeh Wen-chai (Forestry Abstracts), bimonthly;
- Shui-ch'an Wen-chai (Aquatic Products Abstracts), bimonthly;
- Nung-yeh Wen-chai (Agriculture Abstracts), Series 1, 2, 3, 4, all monthly except Series 2, which is bimonthly;
- Nung-yeh Chi-hsieh K'uai-pao (Express Bulletin on Agriculture Machinery), semimonthly;
- Lin-yeh K'uai-pao (Express Bulletin on Forestry), semimonthly;
- Shui-li Kung-ch'eng K'uai-pao (Express Bulletin on Hydraulic Engineering), semimonthly;
- T'ao-la-chi K'uani-pao (Express Bulletin on Tractors), semimonthly;
- Nung-yeh I-ta'ung (Collected Translations on Agriculture), monthly;
- Chung-hua I-hsueh Tsa-chih (Chinese Medical Journal) (Foreign Language edition), monthly;
- Chung-hua I-hsueh Tsa-chih (Chinese Medical Journal), unknown periodicity;
- Chung-hua Wai-k'o Tsa-chih (Chinese Journal of Surgery), unknown periodicity;
- Chung-hua Nei-k'o Tsa-chih (Chinese Journal of Internal Medicine), unknown periodicity;
- Chung-hua Erh-k'o Tsa-chih (Chinese Journal of Pediatrics), unknown periodicity;

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- Chung-hua Erh-k'o Tsa-chih (Chinese Journal of Pediatrics), unknown periodicity;
- Chung-hua Fu-k'o Tsa-chih (Chinese Journal of Gynecology), (planned);
- Yao-hsueh Hsueh-pao (Acta Pharmaceutica Sinica), monthly;
- I-hsueh Wen-hsien So-yin (Index of Medical Literature), monthly;
- Je-tai Fang-hu Wen-chai (Tropical Protection Abstracts);
- I-hsueh Wen-chai (Medical Abstracts), Series 1, 2, 3, 4, all monthly;
- Kuo-wai I-hsueh Tung-t'ai (Foreign Medical Activities), monthly;
- Chi-hsieh Kung-ch'eng Hsueh-pao (Journal of Mechanical Engineering), quarterly;
- Chi-hsieh Kung-yeh (Machine Industry), semimonthly;
- Tsu-tung-hua (Automation) (planned);
- Chi-liang Chi-shu yu I-ch'i Chih-tsao (Computing Techniques and Instrument Manufacturing), quarterly;
- Chung-kuo Tsao-ch'uan (Chinese Shipbuilding) (planned);
- Tsu-tung-hua yu T'ung-hsun Wen-hsien So-yin (Index of Automation and Communications Literature), monthly;
- Chi-liang Chi-shu Wen-hsien So-yin (Index of Computing Technique Literature), monthly;
- Chi-hsieh Chih-tsao Yuan-li yu Kung-i Wen-hsien So-yin (Index of Literature of Machine Building Principles and Techniques), monthly;
- Tien-chi Kung-ch'eng Wen-hsien So-yin, (Index of Electrical Engineering Literature), monthly;
- Tien-li Kung-ch'eng Wen-hsien So-yin (Index of Electrical Power Engineering Literature), monthly;
- Tien-kung Wen-chai (Electrical Engineering Abstracts), Series 1-6, all monthly;
- Chi-hsieh Chih-tsao Wen-chai (Machine Building Abstracts), Series 1-16, all monthly;

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- Liang-ts'e Chi-shu Wen-chai (Weights and Measures Technology Abstracts), monthly;
- Tien-ch'i-hua Tsu-tung-hua K'uai-pao (Express Bulletin on Electification and Automation), semimonthly;
- T'ung-yung Chi'hsieh K'uai-pao (Express Bulletin on General Machinery), semimonthly;
- Chung-hsing Chi'hsieh K'uai-pao (Express Bulletin on Heavy Machinery), semimonthly;
- Chi-liang Chi-shu yu I-ch'i Chih-tsao K'uai-pao (Express Bulletin on Computing Techniques and Instrument Manufacturing), semimonthly;
- Wu-hsien-tien K'uai-pao (Express Bulletin on Radio), semimonthly;
- Yu-tien K'uai-pao (Express Bulletin on Post and Telecommunications), semimonthly;
- Tien-kung K'uai-pao (Express Bulletin on Electrical Engineering), semimonthly;
- Chi-ch'uang I-ts'ung (Collected Translations on Lathes), monthly;
- Chi'hsieh I-ts'ung (Collected Translations on Machinery), monthly;
- Hua-hsueh Hsueh-pao (Acta Chimica Sinica), bimonthly;
- Hua-hsueh T'ung-pao (Chemistry Bulletin), monthly;
- Hsi-suan-yen Hsueh-pao (Journal of Silicates), quarterly;
- Hua-hsueh Kung-yeh (Chemical Industry), semimonthly;
- Hua-hsueh Hua-kung Wen-hsien So-yin (Index on Chemistry and Chemical Engineering Literature), monthly;
- Hua-hsueh Wen-chai (Chemistry Abstract), Series 1-5, all monthly;
- Kao-fen-tzu Ts'ai-liao K'uai-pao (Express Bulletin on Macromolecular Materials), semimonthly;
- Wu-chi-wu Kung'i Kuai-pao (Express Bulletin on Inorganic Techniques), semimonthly;
- Yu-chi Hua-hsueh Kung-yeh K'uai-pao (Express Bulletin on the Organic Chemistry Industry), semimonthly;

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- Chin-shu Hsueh-pao (Journal of Metals), (planned);
- K'uang-yeh Wen-hsien So-yin (Index of Mining Literature), monthly;
- Shih-yu Wen-hsien So-yin (Index of Petroleum Literature), monthly;
- Chih-chin Wen-hsien So-yin (Index of Metallurgical Literature),  
monthly;
- Shih-yu yu T'ien-jan-ch'ia Wen-chai (Petroleum and Natural Gas  
Abstracts), monthly;
- Chih-chin Wen-chai (Metallurgy Abstracts), Series 1-4, all monthly;
- K'uang-yeh Wen-chai (Ts'ai-k'uang Hsuan-k'uang), (Mining Abstracts  
[Ore Extraction and Dressing]), monthly;
- Ts'ai-k'uang K'uai-pao (Express Bulletin on Ore Extraction), semimonthly;
- Chih-chin K'uai-pao (Express Bulletin on Metallurgy), semimonthly;
- Shih-yu I-ts'ung--Yu-ch'ia Chia-kung (Collected Translations on Petroleum  
Oil and Gas Refining), monthly;
- Shih-yu I-ts'ung--K'an-t'an ho K'ai-fa (Collected Translations on Petro-  
leum -- Prospecting and Development), monthly;
- Chien-chu Hsueh-pao (Journal of Architecture), unknown periodicity;
- T'u-mu Kung-ch'eng Hsueh-pao (Journal of Civil Engineering), (planned);
- Chien-chu Chi-shu Wen-hsien So-yin (Index of Architectural Technology  
Literature), monthly;
- T'ieh-lu Yun-shu Wen-hsien So-yin (Index of Rail Transport Literature),  
monthly;
- Kung-lu Yun-shu Wen-hsien So-yin (Index of Road Transport Literature),  
monthly;
- Hang-k'ung Wen-hsien So-yin (Index of Aviation Literature), monthly;
- Shui-lu Yun-shu Wen-hsien So-yin (Index of Waterway Transport Literature),  
monthly;
- T'ieh-tao K'uai-pao (Express Bulletin on Railways), semimonthly;
- Chiao-t'ung Yun-shu K'uai-pao (Express Bulletin on Communications and  
Transport), semimonthly;

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Fang-chih Chi-shu (Textile Technology), unknown periodicity;

Fang-chih Wen-hsien So-yin (Index of Textile Literature), monthly;

Ch'ing Kung-yeh Wen-hsien So-yin (Index of Light Industry Literature), monthly;

Ch'ing Kung-yeh Wen'chai (Light Industry Abstracts), monthly;

Shih-p'in K'ung-yeh Wen-chai (Food Industry abstracts), monthly;

Fang-chih K'uai-pao (Express Bulletin on Textiles), semimonthly;

Hsin Neng-yuan K'uai-pao (Express Bulletin on New Energy Sources), semimonthly;

D. Scientific Survey Teams

Four "field survey teams" were organized in 1962 by the Academy of Sciences:

1. The Marine Products Resources Survey Team was organized 9 years ago by the Institute of Oceanography, Academy of Sciences. According to reports, this team had completed its survey of the continental Chinese seas by September 1962 and had accumulated several hundred thousand specimens. Of these, over 30 were new records of fishes; over 40 new species of mammals were also discovered. Reports also state that this team has already "basically completed their survey of the distribution of marine animal and plant resources in China" (Hsiang-kang Wen Hui Pao [Hong Kong Wen Hui Pao], 23 September 1962).

2. The Tsinghai-Tibetan Plateau Animal and Plant Resources Survey Team was organized by the Institute of Plateau Biology of the Northwest Branch of the Academy of Sciences in August 1962. This team consisted of more than 30 persons organized into 5 groups which included animal, plant, and pond-fish groups; the majority of these persons surveyed the Ch'i-lien Shan region. The goal of the animal group was to elucidate the animal resource situation in this area. In addition, the plant group hoped to make clear the flora, the patterns of distribution, the characteristics of botanical communities, and the ecological situation in this area. This group emphasized a definitive evaluation of such important plants as ferns and So-yang (3851/7122 [unidentified]). The aim of the pond fish team was to study the parasitic diseases of the lake and pond fishes in Tsinghai (Kuang-ming Jih-pao, 26 August 1962).

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3. The Tsinghai-Tibetan Plateau Permafrost Survey Team was formed by the Preparations Committee, Institute of Glaciers, Snow Accumulation, and Permafrost of the Academy of Sciences, and other research units and higher schools; the survey has been under way for 2 years. Not long ago, this survey team discovered a many-year-old layer of permafrost as thick as 100-150 meters, located just 1 1/2-2 meters below the surface (Hsin Hua She [NCNA] dispatch of 6 May 1962).

4. The Plateau Ice and Snow Utilization Research Team set out for the Ma-na-szu River valley in Sinkiang in May 1962 in order to achieve a preliminary understanding of the distribution, quantity, formative conditions, and utility of this regions glaciers, river water, lakes, and other hydraulic resources, as well as to collect scientific data in the fields of geology, geomorphology, and climate. During the winter, they intended to make a definitive study of snow accumulations in the plains, studying the conditions of accumulated snow and its uses in agriculture production (Hsin Hua She dispatch of 12 May 1962).

Four fairly important survey teams reported on their research during 1962:

1. The Wuhan Botanical Garden of the Academy of Sciences organized the research results of the Hupeh Wildlife and Plant Resources Survey Team. These results revealed that there are over 300 varieties of starchy and oil plants in the mountainous regions of this province. Ultimately this survey team will publish research reports entitled Hu-pei Sheng Yeh-sheng Yu-liao Chih-wu (The Uncultivated Oil Plants of Hupeh Province), Hu-pei Sheng Yeh-shen Tien-fen Chih-wu (The Uncultivated Starchy Plants of Hupeh Province), etc. (Hsin Hua She dispatch of 12 April 1962).

2. The Institute of Geography, Academy of Sciences, sponsored the T'ai Hu Resources Survey, whose work was completed in February 1962. During their survey, they studied geographic conditions, topography, and subsurface minerals, as well as the volume, water level, and water temperature of T'ai Hu; furthermore, they collected specimens of aquatic plants, lake insects, and floating plants (Chung-kuo Hsin-wen, 10 February 1962).

3. Work on the National Fruit Tree Resource Census was basically completed in July 1962. The area covered by the census stretched from Heilungkiang Province in the north to Hainan Island in the south, from Chekiang Province in the east to Sinkiang and the Tsinghai-Tibetan Plateau in the west. In the course of the census, many particularly valuable species of fruit trees and large quantities of unexploited or little-exploited wild fruit trees were discovered. A work based on the results of the census, Ch'uan-kuo Kuo-shu Ti-li Fen-pu Ch'u-hua (The National Geographical Distribution of Fruit Trees Areas, has already been published (Hsin Hua She dispatch on 19 July 1962).

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4. Over 8,000 personnel from geological units were selected in 1960-1962 to conduct an agriculture investigation of subsurface water resources in the area ranging from the Sungari-Liao plain in the north to the Liu-chow Peninsula in the south. The subsurface water conditions under an area of over 100,000 square kilometers had been surveyed by August 1962 (Kuang-ming Jih-pao, 23 August 1962).

Furthermore, the Academy of Sciences and related units have organized over the past few years the Heilungkiang Comprehensive Survey Team, the Sinkiang Comprehensive Survey Team, the Tsinghai-Kansu Comprehensive Survey Team, the Inner Mongolia-Ningsia Comprehensive Survey Team, the Western Regional South-North Water-Transfer Comprehensive Survey Team, the Tibet Comprehensive Survey Team, the Mid-yellow River Water and Soil Conservation Comprehensive Survey Team, the Yunnan Tropical Biological Resources Comprehensive Survey Team, the South China Tropical Biological Resources Comprehensive Survey Team, and the Sand Control Comprehensive Resource Survey Team. Parts or all of the Northeast, Inner Mongolia, Northwest, Southwest, and South China have been the subjects of full scientific investigative studies; the total area covered approaches 5.7 million square kilometers. At present, the majority of the survey teams have, based on the results of their surveys, offered valuable treatises and a large quantity of special reports and have published or are about to publish several tens of volumes of scientific notes, collected survey reports, and other papers dealing with the areas covered in their surveys. Additionally, several tens of volumes of map collections and large-scale specialized maps have been compiled. The most important result of their investigations is the discovery in the Northeast, Inner Mongolia, and western areas of several hundred million mou of uncultivated land, the majority of which is found in the temperate and warm regions and of which over half can be brought under cultivation without irrigation. In addition, 1,520,000,000 mou was found suitable for animal husbandry; this area is distributed in Sinkiang; Kan-tz'u and A-pa in Western Szechwan; Chiang-tz'u, Jih-k'a-ts'ue, and Na-ch'iu in Tibet; and Hsi-lin-kuo-lo League and Wu-lan in Inner Mongolia (Hsin Hua She dispatch of 16 April 1963).

In addition to these centrally organized, long-term, large-scale survey projects, local areas are constantly organizing short-term research projects. For example, the Scientific and Technological Committee and the Scientific and Technological Society of the Kwangsi Chuang Autonomous Region organized over 110 instructors and engineers to form the Agricultural Production Comprehensive Technological Survey Unit, which conducted a practical survey in this area for several months and, upon its return, submitted 22 reports totaling about 100,000 characters (Hsin Hua She dispatch of 30 November 1962).

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E. Foreign Scientific and Technological Cooperation

During 1962, the Chinese Communists signed 12 scientific and technological cooperation agreements with the "socialist countries" (including Cuba and Albania, excluding Yugoslavia). The provisions of these agreements call for annual meetings of joint commissions for scientific and technological cooperation and the signing of yearly scientific and technological cooperation agreements, cooperation plans, or implementation plans. It is worthy of note that, in the 1962-1963 cooperation plan signed with the Soviet Union, not only was there a reduction of the included and their concreteness relative to past agreements, but the cooperative relations were general in nature, e.g., surveys and mutual provision of technological materials in various noncrucial sectors. The Academy of Sciences' scientific cooperation agreements signed in 1962 with Poland, the Soviet Union, and Czechoslovakia were contingent upon the signing of cooperation or implementation plans later in the year.

Delegations dispatched by the Chinese Communist Academy of Sciences to participate in important foreign conferences attended: the seventh session of the World Federation of Scientific Workers and the International Conference on Problems in Higher Technology and Education, both held in Moscow during September; the Conference on Visual Observation of Artificial Satellites, held in Leningrad in late November; and the Conference of Albanian Studies, held in Tirana in December. In addition to the above, a medical delegation was dispatched to Sweden in early November (1962 issues of Jen-min Jih-pao and Kuang-ming Jih-pao). According to a report in the 29 January 1963 Jen-min Jih-pao, specialists from 34 countries were assisting the Chinese Communists in Peiping; the names of the countries supplying these specialists were not revealed (another report said that specialists from 37 countries were in Peiping [Peking review, No 1, 5 January 1962, p 4]).

Aside from the various scientists supplied to the Chinese Communists by agreements with Communist states, important foreign scientists visiting Communist China in the past year included: the Danish physicist Prof I. Bohr, his wife, and Assistant Professor Nielsen; two Italian professors of agrochemistry, Iodini and Margoli; Japanese physiologist Takushoku (2148/2784; reading unverified) Hidemitsu; and a delegation from the British Royal Society led by K'o-teng-sa-shih [phontic].

F. Problem of the Atomic Bomb

When will the Chinese Communists test an atomic bomb? This has recently become a topic of popular concern throughout the world. Setting aside the futile guesses contained in attention-getting rumors, fairly rational estimate may be made that there is no theoretical difficulty facing the Chinese Communists in exploding one of two experimental atomic bombs within a few years. The time is far distant, however, when they will be able to achieve usable atomic weapons and suitable delivery

systems. According to revelations by the Japanese, the Chinese Communist Premier Ch'en I has said that the Chinese Communists have a large organization carrying out research on atomic weapons (UPI, Tokyo, 20 September). The present author concludes, from a partial analysis of the situation, that Ch'en I's statement is true. It is widely known that the Chinese Communist have a fairly large number of top-flight atomic physicists.

Other evidence reveals that the Chinese Communists are engaged in prospecting for radioactive mineral resources used in atomic fission. According to reports, a type of niobium aeschynite containing 2.15 percent thorium oxide has been found in North China (Scientia Sinica [English edition], Vol. III, No 7, 1962). Research is also being conducted on another kind of thorium-bre stone (K'o-hsueh T'ung-pao, No 10, 1962). In addition, as mentioned above, Hunan Province announced in July 1962 that emphasis would be placed, in provincial research, by all branches of science, on: "radiochemistry and related labor-saving and important medical technology problems." In general, regional science devotes itself to local production tasks; according to reports, however, Hunan Province has had, in the past, no scientific research units related to atomic energy radiation. It implies that the problem of protection from radiation for a large number of persons exists for it to be made the number one task for all sciences in the province; does this not suggest that, before long, the production of atomic materials, will be begun in Hunan Province? This is the only logical explanation that can be offered.

### Conclusion

Although 1962 ought to be the last year of the Chinese Communists' Second Five-Year Plan, in truth it should be considered the end of the "great leap forward" and the second year of the government's retrenchment. The characteristics of the 1962 Chinese Communist scientists' work have been: a revival of the majority of scientific periodicals whose publication was stopped in 1960, a continuous increase in the scientific materials and texts written by Chinese Communist scientists, about a 100-percent increase over 1961 in the number of national scientific conferences and scientific papers presented, and an unprecedented rise in local scientific conferences and activities. This reflects that the Chinese Communists' investment in this area is 1 1/2 to 2 times as large as last year [see parenthetical note at conclusion of article]. There has been, however, no improvement over 1961 in the matters of international scientific and technological cooperation, the training of scientific personnel, and survey team work.

In 1962, the Chinese Communist expended great efforts in calling upon scientists to support industry and agriculture, especially agriculture. But, up to now, except for propaganda slogans, government directives, technological programs at conferences, and governmental discussions, not many results are in evidence.

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After the development of the "Sino-Soviet rift," the Chinese Communists realized that they could not rely on outside support and must advance by their own efforts. It is problematical whether or not this method is feasible. The Soviet Union's construction [i.e., economic development] relied upon Western aid until around 1930, particularly the support of scientific personnel and technicians from the US and Germany. The Chinese Communists have, up to now, built their industry with the support of the Soviet Union over the past few years. Because the Chinese Communists have, for over 10 years, neglected the training of scientific personnel and attacked the intelligentsia, they have blocked their scientific development; now they suddenly wish to "advance by one's own efforts." It is clear that it is very difficult to establish a high-level core of scientific research work and to train large numbers of sufficiently competent scientific leaders overnight.

A historical evaluation shows that the Chinese Communist Party has been clumsy and stupid and that government policy has shown little historical policy to "advance by one's efforts." Although, under the present circumstances, it is possible to rely entirely upon one's self to achieve scientific modernization of industry, agriculture, and national defense, its realization appears to be too far in the future. The passage of time will reveal the shortcomings of the government's policy; after this, what will the Chinese Communist do then? Let us rule over eyes and watch!

[Parenthetical note:] The Chinese Communists yearly expenditures on culture and education, according to Ten Great Years, published in February 1960, were 1950, 750 million yuan; 1951, 1,340,000,000 yuan; 1952, 2,280,000,000 yuan; 1953, 3,360,000,000 yuan; 1954, 3,460,000,000 yuan; 1955, 3,190,000,000 yuan; 1956, 4.6 billion yuan; 1957, 4,640,000,000 yuan; and 1958, 4,350,000,000 yuan. According to a report in the 1 April 1960 issue of Jen-min Jih-pao, the expenditures for 1959 were 5,860,000,000 yuan; for 1960, they were planned as 8,620,000 yuan; no later report has been seen. The present author estimates that, in 1961, they were between 3 and 4 billion yuan; and in 1962, about 5-6 billion yuan. This was due to the fact that the Chinese economic situation was particularly bad during these 2 years, and this was about all they could afford, which is why they have not reported it. The above outlays possibly include investment in the natural sciences.

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BIOLOGICAL AND MEDICAL SCIENCES

PHARMACOLOGICAL EFFECTS OF GUANETHIDINE STUDIED -- Peiping, Chung-hua I-hsueh Tsa-chih (National Medical Journal of China), Vol 49, No 2, Feb 63, pp 137-140

[The following is an abstract of a paper, "Pharmacology of Guanethidine--Antihypertensive Drug," by Ho Kao-pin (0149/7559/2430), Pharmacology Teaching and Research Section, Anhwei Medical College information on the drug in this paper is based on 41 foreign references published 1957-1962. The author acknowledges the assistance of Prof Hsing Wen-heng (6717/2429-9513) in reviewing his manuscript.]

The article presents a survey of the pharmacological effects of Guanethidine, which the author describes as the most ideal hypotensive drug now known. It is stated that the new drug is in clinical trial in China and that China can manufacture it. [FOR OFFICIAL USE ONLY]

HYPOTENSIVE ACTION OF GUANETHIDINE SYNTHESIZED BY CHINESE -- Peiping, Sheng-h Hsueh-pao (Acta Physiologica Sinica), Vol 25, No 4, Dec 62, pp 255-262

[The following is an abstract of paper, "Hemodynamic Effects of Guanethidine," by Li Hsiao-yo (2621/2556/3768), Chu Ch'iao-chen (2612/-1564/6297), and Ting Kuang-sheng (0002/0342/3932), all of the Institute of Materia Medica, Chinese Academy of Medical Sciences, Shanghai; this paper was presented at the 26 May 1962 annual meeting of the Shanghai Physiological Society and was received for publication in June 1962.]

In this paper, details are presented on the experiments undertaken to study the hemodynamic effects of Guanethidine, or, [2-(octahydro-1-azocinyl)-ethyl]-guanidine sulfate, in experimental dogs and rats. The new hypotensive drug was synthesized by Ch'en Chih-hao (7115/1807/6275) of the authors' institute. Analyzed by the institute's subsidiary pharmaceutical plant, its boiling point was determined at 269-272°C, as compared with the range of 276-281°C reported by R. P. Mull et al. in the Journal of Organic Chemistry, 25: 1953-1960.

CHINESE PATHOLOGISTS LISTED IN ARCHIVES -- Moscow, Arkhiv Patologii, Vol 25, No 6, 14 May 63, pp 93-94

Four Chinese pathologists are listed among those whose dissertations appear in the publication Arkhiv Patologii for the years 1935-1962. They are as follows: Wu I-ting, Wang Hung-hsiu, and Fang Ch'ang-chun (1957, No 8, p 32) and Chang Yueh-ming (1961, No 5, p 64).

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INDUSTRIAL AND AGRICULTURAL MICROBIOLOGY STRESSED IN JOURNAL -- Peiping, Wei-sheng-wu Hsueh-pao (Acta Microbiologica Sinica), Vol 8, No 4, Dec 62

The entire issue of the above source is devoted to research topics in the fields of industrial and agricultural microbiology; information on the authors and articles appearing in this issue can be found in the biographic section of this SIR. /FOR OFFICIAL USE ONLY/

NEW MEDICAL PERIODICALS -- Peiping, Chung-hua Wai-k'o Tsa-chih (Chinese Journal of Surgery), Vol 11, No 1, 1963, p 9

T'ien-chin I-yao Tsa-chih (Tientsin Medical Journal) is a comprehensive medical journal that publishes articles on various aspects of clinical medicine, basic medicine, Chinese traditional medicine, and pharmaceuticals. To meet the needs of the medical profession, the journal will initiate three supplements in 1963. A supplement on osteology will be published the first month of each quarter; a supplement on blood transfusion and hematology, the second month of each quarter; and a supplement on oncology, the third month of each quarter. Distributed by the Tientsin Post Office and sold at post offices throughout the country, T'ien-chin I-yao Tsa-chih is 0.50 yuan per copy; its supplements will be 0.40 yuan per copy.

BOOK ON TRADITIONAL CHINESE MEDICINE -- Peiping, Kuang-ming Jih-pao, 4 May 63, p 2

The Shanghai Science and Technological Printing House has recently published a book entitled Chin-tai- Chung-I liu-p'ai Ching-yen Ch'ien-chi (Collected Experience in the School of Modern Traditional Chinese Medicine), compiled and edited by the Shanghai Traditional Chinese Medical College.

BOOKS ON TRADITIONAL CHINESE MEDICINE -- Peiping, Kuang-ming Jih-pao, 20 May 63, p 2

Recently some ten old and prominent Chinese doctors of traditional medicine in the Wuhan area have jointly published through the Hupeh Publishing House two books, Chung-yao Shih-yung Kuei'-fan, (Standard Application of Traditional Chinese Medicine) and Chung-yao Cheng-fang Shih-yung-chi (A Collection of Usages for Chinese Drug Preparations).

The book on standard application of traditional Chinese medicine is divided into three sections. The first section gives an introduction to the production and availability of Chinese medicine in the Wuhan area and also describes the experiences and methods of analyzing, decocting,

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preparing, shipping, and storing the drugs. The second section contains descriptions of drugs, the normal function and special characteristics of the drugs and the method of brewing and handling them. The final section provides information on capability, limitation, toxicity control, and basic knowledge of proper methods of decocting Chinese medicine. The other book, on usages for Chinese drug preparations, contains selections of more than 580 different types of successful Chinese medicines, giving their source of supply, main effectiveness, method of administering the drug, proper dosages, and precautions to be taken. This book also describes in detail the method of decocting medicine and the steps to be taken in the preparation of the drugs.

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TECHNICAL SCIENCES

CHINESE APPLYING SONIC SOURCES IN INDUSTRY -- Moscow, Bulletin' Tekhniko-Ekonomicheskoy Informatsii, No 5, May 63, pp 76-79

The People's Republic of China has manufactured a universal ultrasonic machine tool with a 1.5-kw generator and 22 kilocycle operating frequency. Dimensions of the tool are 350 x 145 mm.

Peiping Textile Plant is engaging in emulsification of dyes and intensification of the process of dyeing 70-cm cotton fabrics. Sonic sources are applied. Twenty-four hydrodynamic radiators are lined up along the width of the material.

Shanghai Institute of Materials and the Central Metallurgical Laboratory have conducted investigations on the irradiation of molten steel by ultrasonics, with the aid of a magnetostricted transformer and a 50-kw generator.

This information appears in the Russian-language article, "Application of Ultrasonics in Machine Building in Countries of the People's Democracies," written by A. I. Markov, Candidate of Technical Sciences.

CHINESE TRANSLATIONS OF FOREIGN PETROLEUM RESEARCH -- Peiping, Shih Yu I Ts'ung (Collection of Translations on Petroleum), No 20, 17 Oct 62.

[The following eight articles from Russian, American, and Canadian publications have been translated into Chinese and published in the above source.]

1. "The Problem of Control in the Development of Oil Fields," by M. L. Su-erh-ku-chieh-fu, originally appearing in the Soviet magazine Geologiya i Razrabotka Neftnyakh Mestorozhdenis (Geology and Development of Petroleum Deposits), published by "Gostoptekhizdat" (State Scientific and Technological Publishing House of the Petroleum and Mineral-Fuel Industry), 1962 issue, abstracted and translated by Wang Po (3769/3134).

2. "How To Increase the Rate of Recovery From Anisotropic Oil-Bearing Reservoirs," by S. I. Chi-wei-chin et al., originally appearing in the Soviet magazine Petroleum and Natural Gases, No 12, 1962, abstracted and translated by Ho Ming-ching (6320/2494/7234).

3. "Method of Forecasting the Production Capacity of Oil-Bearing Strata," by G. W. Tu-po-erh et al., originally from the US magazine Petroleum Technology, No 1, 1962, translated by T'ei Wei (0160/7279).

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4. "Utilization of Oil-Bearing Mud," by R. W. Ssu-tu-a-te, originally appearing in the US magazine Petroleum and Gases, Volume 45, No 3, 1946, and translated by Lu Wen-K'ai (0712/2429/2818).

5. Test of Oil Extraction in Raw Paraffin," by U. M. Pa-chih-no-fu et al., originally appearing in the Soviet magazine New Technological Information on Petroleum and Natural Gases--Refining and Petroleum Chemistry Series, No 1, 1962, translated by Hung Po-ning (3163/-0130/1380).

6. "Use of Active Surface Flux to Recover Waste Lubricating Oil," by A. I. Pa-erh-k'an et al., originally appearing in the Soviet magazine Chemistry and Technology of Fuel and Lubricants, No 4, 1962, and translated by Tang Ch'ang-t'ao (7825/7022/3447).

7. "PM. -- 250 Model Installation for the Recovery of Lubricating Oil," by L. I. Sa-shih-chin et al., originally appearing in the Soviet magazine New Technological Information on Petroleum and Natural Gases--Oil Refining and Petroleum Chemistry Series, No 2, 1962, and translated by Yang Hsin (2799/0207).

8. "Science and Technology on Petroleum"

Following are eight short articles appearing under the above heading on the subject of petroleum:

a. "Study of Prospective Oil Reservoirs in Rock Waste and Rock Core," originally appearing in the Soviet magazine Collections of Abstracts--Petroleum Industries Series, No 6, 1962, published by the Soviet Information Research Office and translated by Wu Wei (0702/0251).

b. "Study of Sources of Sound Waves in the detection of Oceanic Earthquakes" and abstract translation by Sun Chi-yun (1327/-3444/0337) from an article appearing originally in the US magazine World Petroleum, Volume 33, No 3, 1962, pages 44-46,

c. "Electrical Measurements of Well-Drilling Bit," abstract translation by Sun Chi-yun (1327/3444/0337), from an article appearing originally in the Canadian magazine Canadian Petroleum, Volume 14, No 17, 1962, page 25.

d. "New Kind of Slurries for Drilling Into Earth Strata of High Temperature and Pressure," an abstract translation originally from the Soviet magazine Express Information on Science and Technology--Petroleum Industries Series, No 10, 1962, translated by Huang Hsi-tao (7806/1585/7118).

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e. "New Type of Automobile Engine Using Gasoline, Diesel Oil, or Kerosene for Fuel," originally appearing in the US magazine Petroleum and Gas, Volume 60, No 17, 1962, pages 102-105, and translated by Ch'en Ch'ing-hing (7115/1987/1380).

f. "Controlled-typed of oven for Removal of Coke by Heat," originally appearing in the US magazine Petroleum and Gas Volume 60, No 26, 1962, page 118, and translated Ch'en Ch'ing-ning (7115/1987/1380).

g. "Methods of Transporting Paraffin-Base Oil-Bearing Water Mixture," originally appearing in Soviet magazine Express Information on Science and Technology--Series on Storage and Transportation of Petroleum and Gas, No 8, 1962, page 1, and translated by Wang Cheng-kuo (3769/2973/0948).

h. "New Industrialized Method of Producing Paraffin," originally appearing in the Soviet magazine New Technological Information on Petroleum and Natural Gas--Oil Refining and Petroleum Chemistry Series, No 6, 1962, pages 46-47, and translated by Lung Wei-ho (7893/1983/7729). CONFIDENTIAL

CHINESE TRANSLATIONS OF FOREIGN MINING RESEARCH -- Peiping, Tsai-kuang Kuai-pao (Express Bulletin on Mining), No 13, 4 Jul 62

[The following nine articles from English, Czechoslovak, and Russian publications have been translated into Chinese and published in the above source.]

1. "Excavation of Mine Tunnels by Means of Chemical Solution," originally appearing in the Coal Age, No 9, 1961, pages 72-73, translated by P'ang Wei-chen (7894/4850/6297) under the direction of Hsieh Chih-hsi (6200/0037/3556).

2. "Rapid Excavation of Spiral and Nonspiral Tunnels at the Malinikov No 7 Mine," originally from the Soviet magazine Shakhtnoye Stroitel'stvo (Mining Construction), Volume 3, 1962, pages 23-24, translated by Wang Yao-lin (3769/5069/2651) under the direction of Hsieh Chih-hsi (6200/0037/3556).

3. "Mechanization of Poland's Coal Mining Machines," originally appearing in the Czechoslovak publication Uhlí (Coal), No 2, 1962, page 66, translated by Chou Mei-ju (0719/5019/9172) under the direction of Hsieh Chih-hsi (6200/0037/3556).

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4. "Use of the ZPM-1 Model Mine Excavator for Inclined-Cut Stopping," originally appearing in the Russian magazine Ugol Ukrainy (Coal of the Ukraine), No 1, 1962, pages 31-33, and translated into Chinese by Tsai Hsiu-ying (5591/4423/5391) under the direction of Hsieh Chih-hsi (6200/0037/3556).

5. "New Type of Steel Girder Supports for Recently Constructed Mine Tunnels," originally appearing in the Colliery Guardian, Volume 202, No 5228, pages 766-767, translated by Sun Ch'i-kuei (1327/26386/6311) under the direction of Hsieh Chih-hsi (6200/0037/3556).

6. "Automatic Control of Water Pumps Gauges," originally appearing in the Soviet magazine Gornyy Churnal (Mining Journal), No 1, 1962, page 72, abstracted and translated by Huang Shou-ming (7806/1343/2494) under the direction of Chin Tse-yung (6855/0463/7167).

7. "Use of Wear-Resisting Materials for the Manufacturing of Coal-Processing Machines," an abstract translation by Chang Yu-hun (1728/5148/0553) under the direction of Hsieh Wen-hsi (6200/2429/3556). This article was translated from the Soviet magazine Ugol' Ukrainy (Coal of the Ukraine), No 1, 1962, pages 33-34.

8. "Experiences of Drilling To Extract Gases in the Preparation of Mine Tunnels," originally appearing in the Soviet magazine Ugol, No 1, 1962, pages 55-57, translated by Tung En-jui (0157/1869/3843) under the direction of Chin Tse-yung (6855/0463/7167).

9. "Portable Mine Gas Detectors," originally appearing in the English magazine Colliery Guardian, Volume 204, No 5263, 1962, page 268, translated into Chinese by Tsai Wu-chiang (5591/2976/17300) under the direction of Hsieh Chih-hsi (6200/0037/3556). /FOR OFFICIAL USE ONLY/

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CHINESE TRANSLATIONS OF FOREIGN MINING RESEARCH -- Peiping, Tsai-kuang-kuai-pao (Express Bulletin on Mining), No 15-16, 19 Aug 62

[The following six articles from the English and Russian publications have been translated into Chinese and published in the above source.]

1. "Speed Record of Mine Excavation in Great Britain," originally appearing in the Colliery Guardian, Volume 204, No 5260, page 169, translated by Ch'en Chun-fang (7115/0193/5364).

2. "Excavation of Mine Shafts in Poland," originally reported in Byulleten' Tekhniko Ekonomicheskoy Informatsii [Bulletin on Technological Economics Information], No 2, 52, pages 87-89, translated by Wang Jen-shan (3769/0086/1472).

3. "Precautions Against Sudden Danger at Different Mine Levels and various aspects of mine work," originally appearing in Bezopasnost' Truda v Promyshlennosti, [Work Safety in Industries], No 2, pages 26-28, translated by T'ung En-jui (0157/1869/3843) under the direction of Chin Tse-yung (6855/0463/7167).

4. "Water Level Mark Indicator," originally appearing in the Ugol [Coal], No 3, 1962, page 59, translated by Sun Ch'i-kuei (1327/6386/6311) under the direction of Hsieh Chih-hsi (6200/0037/3556).

5. "Serious Consideration of Essential Technical System, Planned Operations and Control of Coal Preparation Plant," originally appearing in the Ugol, No 3, 1962, pages 34-38, and translated by Chang Yu-hua (1728/5148/0553) under the direction of Hsieh Chih-hsi.

6. "The Barker Mill" [a new ore-processing machine tested in Australia for the grinding of minerals in a milling plant], originally appearing in the Mining and Chemical Engineering Review, Volume 54, No 4, 1962, pages 34-35, translated by Cheng Fei (6774/7378). [For Official Use Only]

NEW PUBLICATIONS ON INDUSTRIAL TECHNOLOGY -- Peiping, Jen-min Jih-pao, 30 May 63, p 6

An advertisement announces a number of new books on chemical engineering, metallurgy, and geology:

Fixed Nitrogen Technology and Synthetic Ammonia, by P. E. Pu-la-hsia-ke [Russian] et al., translated by Chao Hsiu-jen (6392/0208/0088) and P'an Ta-jen (3382/1129/0117).

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The Fabrication and Heat Control of Heavy Steel Rollers, by F. L. P'a-nei-hsien-k'e [Russian] and translated by Chu Chung-hai (2612/0022/3189).

Collection of Articles on the Preparation of Essential Materials for Blast Furnaces, translated from Russian by Ch'en Ta-shou (7115/1129/0649) and Yang Yung-i (2799/4057/1355).

T'ung-nieh-lu-yen Chi-ch'e Ho-chin-te Kuang-pin Fan-hsi (An Analytical Treatise on Copper, Nickel, Aluminum, Silver, and their Alloys), by Ts'ung Chi-feng (0654/0679/5364), Ch'en Yao-ming (3088/1031/2494), and T'u Shih-hsin (1458/2508/0207).

Ferrous Metallurgy in the Capitalist Countries, Volume II, with subtitle The Handling of Mineral Ores in Refining and Production of Metals by Blast Furnaces [Russian], by B. C. K'o-pu-la-mo-fu et al. and translated by Sun Chi-wen (1327/0366/2429).

Treatise on a Quantitative Survey of Rare and Dispersed Elements [Russian], by A. K. Lu-sa-no-fu et al. and translated by Yuan Hsuan-hui (5913/3763/2547).

Hsi-t'u K'uang-wu Hua-hsueh (Rare Earths Chemistry), by Kuo Ch'eng-chi (6753/2110/1015)

Tan-sn Kang-ho-ta Ho-chin Kang Kuan-tzn-te Ch'i-han Han-chieh chan-hsing chi-shu Kuei-cheng (Temporary Gas Torch Welding Techniques for Welding Carbon Steel and Low-Alloy Steel Tubings [anonymous]).

CHEMISTRY AND CHEMICAL TECHNOLOGY

COMPARATIVE RESEARCH ON RING POLYMERS -- Peiping, K'o-hsueh T'ung-pao, No 5, May 63, pp 53-55

[The following is a descriptive summary of an article, "Research on Ring Polymers-4-substituted Heptadine-1, 6," by Feng Hsin-te (7458/2450/1795), Chang Hung-chih (1728/7703/1807), Ts'ao Wei-hsiao (2580/4850/1321), Ch'en P'eng (3088/7720), Hsi Fu (5045/1788), Han Chin-chih (7281/6930/5347), and Chi Hsueh-ch'iao (4764/7185/2890), all of the chemistry department, Peking University. Additional data contained in the source are given below.]

The authors conducted experiments similar to those of C. S. Marvel (Journal of Polymer Science, No 48, 1960, p 101) D. Mikulosová (Chem. Zvesti, No 11, 1957, p 708), and others. They conducted research on

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the polymerization of seven compounds, such as dipropylene (di)ethyl malonate and dipropylene methyl malonate, using benzoic peroxide as an initiator. They made comparative studies of their research with those contained in the reference materials used, such as the boiling point, refractive index, transformation rate, cyclic rates, and molecular weight. Polymerization data were obtained after 2 days and again after 7 days.

Part of the content of this article was read at the fourth high polymer technical reports conference of the Chinese Academy of Sciences, in November 1962. The authors used 17 references, all English language except one Russian and one Czechoslovak, dated 1937-1961.

RESEARCH ON ANION POLYMERIZATION OF ETHYLENE KETONE EXPANDED -- Peiping, K'o-shueh T'ung-pao, May 63, pp 51-52

[The following is a summary of a note, "Research on Anion Polymerization of Ethylene Nonomers -- the Polymerization of 3-Butyl Ethyl Ketone," by Feng Hsin-te (7458/2450/1795), Ch'iu Nan-fei (6726/0509/7378), and Chiang Te-chang (5592/1795/1757) of the Chemistry Department, Peiping University. Additional data contained in the source are also given below.]

Since very few literary contributions have been made to research on the anion polymerization of ethylene ketone, the authors decided to research in this field. Their experiments were similar to Overberger's (C. C. Overberger, A. M. Schiller; Polymer Science Journal, No 54, 1961), and they enlarged upon research in the initiator systems and solvents. Their experiments showed that when free radical initiators were used in various solvents, unstable polymers were obtained. For example, the use of alkali metal or organic compounds of alkali metal as an initiator had a very great effect upon the solvent. Heteropolymerization resulted in crystalline polymers. Homo-polymerization resulted in unstable polymers. The authors state that this does not rule out the possibility of obtaining crystalline polymers from homopolymerization under other conditions. They compared the infrared spectra of polymers and felt that further research is needed in this field.

In addition to the reference mentioned above, the authors referred to two patents, one British and one Austrian, dated 1960-1961. They expressed thanks to Liu Hung-tu (0491/1738/1653) for his assistance with infrared spectra.

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NEW BOOKS AND REPRINTS ADVERTISED -- Peiping, Jen-min Jih-pao, 22 Jun 63,  
p 6

An advertisement by the Hsin-hua Book Store announcing new publications and reprints, which will be available in September and October of this year, includes one, entitled Rubber Synthesis, by N. I. Smirnov and translated by Li Jeng-yuan (2621/0095/0337).

MATHEMATICAL AND PHYSICAL SCIENCES

PERIODICAL RESUMES PUBLICATION -- Peiping, Jen-min Jih-pao, 1 Jun 63, p 6

The periodical T'ien-wen Ai-hao-che (Astronomy Enthusiasts) will resume publication in Peiping, on 8 July 1963, as a monthly instead of a bimonthly.

This publication is the only popular astronomical journal in China, and it is directed primarily toward astronomy hobbyists, workers, peasants, soldiers, cadres, and students who have had a secondary school level of education.

The periodical essentially presents information on basic astronomy, on new developments and extensions in the scope of astronomy, and on the relation between astronomy and economic construction. It reports Chinese achievements in the sciences, the activities of Chinese astronomical circles, and up-to-date news on astronomy both at home and abroad. The publication will also recommend materials for hobbyists and provide them with the opportunity to share their experiences.

The periodical will be published by K'o-hsueh P'u-chi Ch'u-pan-she (Science Popularization Press), [Peiping], and will be distributed by the Peiping Post Office. The price per copy is 0.15 yuan. Local post offices are now taking subscriptions for the third quarter.

IMBEDDING CLASSES AND COHOMOLOGY OPERATIONS EXAMINED -- Peiping, Scientia Sinica, Vol 12, No 2, Feb 63, pp 163-172

[The following is an abstract of an article, "Imbedding Classes and Cohomology Operations," by Yueh Ching-chung (1417/2529/0022), Institute of Mathematics, Chinese Academy of Science]

This paper proposes to show that the cohomology operations of a complex can be determined completely by its imbedding classes with the determination given by an explicit formula (with the aid of some auxiliary operations). The author argues that these imbedding classes may be of a more fundamental character than the classical invariants.

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NUCLEAR CHEMISTRY AND ITS FUTURE PROSPECTS -- Peiping, K'o-hsueh T'ung-pao, No 6, Jun 63, pp 23-28

[The following is a descriptive abstract of an article by Wang Jung-shu (3769/2827/2885) of Tientsin University.]

This article reviews early research in nuclear physics through the production of the various radioisotopes and the production of the artificial elements No 93-103. The article further speculates on the probable characteristics of elements which have not yet been created and estimates that, at most, only another six elements can be created.

The article also discusses the operation of breeder piles and the problem of disposal of radioactive wastes and states that the problem of how to utilize the radioisotopes and powerful beta and gamma radiation produced is the common task of radiation chemistry and nuclear chemistry. Finally, the article discusses the need for a more complete and dependable nuclear theory and the creation of rules of nuclear periodicity. It suggests a periodic structure of eight periods based on the nuclei of helium, oxygen, calcium, zirconium, tin, lanthanum, and lead.

MISCELLANEOUS

SOVIET DELEGATION ARRIVES IN PEIPING -- Peiping, Jen-min Jih-pao, 10 Jun 63, p 3

The Soviet delegation led by F. Ya Kholostov, acting chairman of the Soviet section of the Sino-Soviet Committee for Scientific and Technological Cooperation and vice-chairman of the National Economic Council of the Council of Ministers of the USSR, arrived in Peiping by plane on 9 June to attend the 13th session of the committee.

Meeting the delegation at the airport were Wu Heng (2976/5899), vice-chairman of the State Scientific and Technological Commission of China and chairman of the Chinese section of the Committee; and Ch'ien Hsin-chung (6929/0207/1813), vice-minister of the Ministry of Health and member of the Chinese section of the Committee. Shcherbakov, attache of the Soviet Embassy [in Peiping], was also present.

CHINA AND RUMANIA SIGN A NEW SCIENTIFIC AND TECHNOLOGICAL COOPERATION AGREEMENT -- Peiping, Jen-min Jih-pao, 11 Jun 63, p 1

The government of the People's Republic of China and the government of the People's Republic of Rumania, on the afternoon of 8 June, in Peiping, signed a new Sino-Rumanian scientific and technological agreement to further consolidate and develop the two countries' scientific and technological cooperation and to strengthen the friendship between the two countries. On the basis of this agreement, the two countries will continue to promote scientific and technological cooperation in accordance with the principles of equal benefit and a comradely mutual aid, which will lead to the achievement on both sides of better utilization of the newest science and technology.

Nieh Jung-chen (5119/2837/5271), Vice-Premier of the State Council, participated in the signing ceremony. Representing China at the signing of the agreement was Han Kuang (7281/0342), delegate plenipotentiary and Vice-Chairman of the State Scientific and Technological Commission of the Peoples Republic of China. Representing Rumania at the signing was Dumitru Gheorghiu, delegate plenipotentiary and Rumanian Ambassador to China. Attending the agreement-signing ceremony were: Vice-Chairman Wu Heng (2976/5899) of the State Scientific and Technological Commission; Chou Wen-lung (0719/2429/7893), Vice-Minister of the Ministry of Petroleum Industry and Chairman of the Chinese section of the Sino-Rumanian Scientific and Technological Cooperation Committee; Deputy Director Ch'en Po-ch'ing (7115/0130/3237) of the Soviet Union and East European Affairs Department of the Ministry of Foreign Affairs; all Chinese members of the Sino-Rumanian Scientific and Technological Cooperation Committee; all the personnel of the Rumanian Embassy in China; and all the Rumanian members of the Sino-Rumanian Scientific and Technological Cooperation Committee.

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And, at the same time, both countries signed a protocol on the eighth session of the Sino-Rumanian Scientific and Technological Cooperation Committee. Chairman Chou Wen-lung of the Chinese section and Chairman Dumitru Gheorghiu of the Rumanian section signed the resolution. At this session, all measures pertaining to scientific and technological cooperation were discussed. On the basis of the specifications of the protocol, all concerned departments of both countries will supply each other with scientific and technological materials, will exchange specialists, and will look into production experiences and advanced achievements pertaining to the field of national economies.

CHINA AND NORTH KOREA SIGN A SCIENTIFIC COOPERATION PLAN -- Peiping, Jen-min Jih-pao, 11 Jun 63, p 1

The Chinese Academy of Sciences and the North Korean Academy of Sciences signed the 1963 implementation plan for their scientific and technological agreement at Pyongyang on the evening of 10 June 1963.

Chang Chin-fu (1728/0513/1133), Vice-President of the Chinese Academy of Sciences, and Kim Tu-hwan, Vice-President of the North Korean Academy of Sciences, represented their countries in the signing.

VIETNAMESE MEDICAL DELEGATION IN SOUTH CHINA -- Peiping, Chin-jih Hsin-wen, 8 May 63, p 2

A medical delegation from Vietnam left Peiping by train 7 June 1963, after 8 days in the capital, to visit Shanghai, Hangchow, and elsewhere. The delegation, led by Vietnamese Minister of Health Pham Ngoc Thach, will be accompanied by China's Vice-Minister of Public Health, Ho Piao-p'ei (6320/1753/7111). China's Minister of Public Health Li Te-ch'uan (2621/1795/0356), Vice-Ministers Shu Yen-pei (1776/6663/0554) and Ts'ui I-t'ien (1508/5030/3944), the Director of the Chinese Academy of Medical Sciences Huang Chia-szu (7806/1367/7475), the Director of the Research Academy of Traditional Medicine Lu Chih-chun (7627/0037/0193), and others saw the delegation off at the station, as did the Vietnamese charge d'affaires in China, Le Tan. The delegation was given a farewell banquet on the eve of its departure by Li Te-ch'uan.

PEIPING UNIVERSITY ENDS SCIENCE FORUM -- Kuang-ming Jih-pao, 2 Jun 63, p 3

The annual "May 4th" Science Forum of Peiping University has ended. More than 110 papers were presented. Some of them dealt with important problems relating to teaching or to the writing of textbooks; others further expounded on current controversial issues among scientific circles.

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Some were reviews of scientific research effort over the past several years or statements of achievements made in the past year. Some by veteran professors were of a relatively high level, such as Prof Chou P'ei-yuan's (0719/1014/3293) "Homogeneous Isotropic Turbulence Under High Turbulent Fluxions" and Prof WANG Chia-yin's (3769/0857/5593) "On Stress Minerals." All papers were well received by the audience. There were also a number of young instructors who, under the guidance and leadership of veteran instructors, wrote high-level scientific papers. For example, FU K'o-chuang (0265/0344/1641), a young instructor in the Geophysics Department, reported the results of several years' research in her paper, "Wave Changes in a Symmetrically Heated Rotating Disk," which won the acclaim of many specialists.

Units from the Departments of Mathematics and Mechanics, Physics, Radio-Electronics, Geophysics, etc. reported on high-level scientific research achievements attained over the past year and on the direction that research will take.

The Physics Department began its preparations for the Forum last summer. This time it submitted 16 important scientific reports in the fields of theoretical physics, semiconductors, optics, magnetism, and metals. Some units made critical reviews of Chinese and foreign research in certain fields and, through discussion, clarified the direction of future work. The Animal Physiology Teaching and Research Section summarized the achievements of Chinese and foreign research on the relations between the central nervous system and low body temperatures.

NANKING UNIVERSITY SCIENTIFIC REPORT CONFERENCE -- Peiping, Kuang-ming Jih-pao, 12 Jun 63, p 2

At the Nanking University Scientific Report Conference that was held not long ago, the instructors at that school submitted a total of more than 320 papers.

Prof Tai An-pang (2071/1344/6721) of the Chemistry Department, who has done research for a long time on silicates, brought up many important points for discussion regarding the process and characteristics of the congealing function of silicates. Assistant Professor Kao Hung (7559/7703) and Lecturer Chang Tsu-hsun (1728/4371/6064) of the Chemistry Department also submitted papers on "Square Wave Polarographic Catalytic Current Theory" and "Square Wave Polarographic Power Current (lead reaction) Theory" and other papers. In the area of single-sweep linear displacement oscillographs they submitted a paper, "The Oscillograph Polarographic Catalytic Current Theory." Prof Hsu K'o-ch'in (1776/0344/0530) of the Geology Department submitted a report, "Research on Geological Characteristics of ore Deposits in the Ning Wu Depression".

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This report examines the different layers of the region's volcanic rocks in detail; it examines special geologic conditions for the formation of iron ore and iron pyrites; moreover, it suggests the future direction for further expansion in the search for ores, and it has been of great value in guiding production. Prof Kuo Ling-chih (6753/0109/2535) of the Geology Department and others submitted a paper on "The Initial Analysis of the South China Chia-li Eastern Geosyncline Structure." This paper was the result of the collective work of the teachers and students of the Paleontology and Regional Geology Teaching and Research Sections of the Geology Department. The architectonic characteristics of South China have been in dispute, in geologic circles, for a long time. On the basis of materials obtained in actual work, they submitted some scientific proof of the South China Chia-li eastern geosyncline, and they determined major characteristics of Pacific Ocean-type structures in order to distinguish them from Atlantic Ocean-type structures of the West. This paper possessed a certain amount of theoretical value. -- Wang Wei-chung (3769/4850/0022)

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BIOGRAPHIC INFORMATION

[The following biographic information on selected Chinese Communist scientific and technical personnel was taken from sources cited in parentheses]

CHANG Hsien-wu (1728/2009/2976)

HAN Ching-she (7281/7234/3195)

CHU Feng-lin (2612/7685/3829)

All of the Institute of Forestry and Soils, Chinese Academy of Sciences; all are coauthors of two articles, "Studies on Fat-Synthesizing Microorganisms I. Effects of Cultural Conditions on Fat Production by Rhizopus" and "Studies on Fat-Synthesizing Microorganisms II. Experiments on Conditions for Synthesis of Fat by Rhodotorula." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 337-348 and 349-358) (FOR OFFICIAL USE ONLY)

CHANG Shu-cheng (1728/2885/2398)

YANG Lien-wan (2799/1670/1238)

WANG Hui-lien (3769/1920/5571)

All of the Institute of Microbiology, Chinese Academy of Sciences; coauthors of an article, "Studies on the Production of Glycerol and Arabitol by Osmophilic Yeasts I. Isolation and Screening of Cultures." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 369-376) (FOR OFFICIAL USE ONLY)

CHAO Chih-kung, Moscow Agricultural Academy imeni K. A. Timiryazev; author of dissertation for the scientific degree of Candidate of Agricultural Sciences, "Dynamics of the Content of Microelements (Manganese, Copper, Cobalt, Zinc) in Food Plants in the Moscow Area, As Related to the Stage of Soil Development and Meteorological Conditions," in Russian. (Moscow, Vechernyaya Moskva, 5 Jun 63, p 4)

CHAO Tse-san, Moscow State University; author of article, "The Adsorption Films Influencing Charge and Polarity of Mineral Particles," in Russian; received for publication on 14 September 1962. (Moscow, Vestnik Moskovskogo Universiteta, Seriya 4, Geologiya, No 3, May Jun 63, pp 68-70)

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CH'EN Kuo-hsing (7115/0948/5281)

LI Shou-k'ang (2621/1108/1660)

HSU Kuo-ying (1776/1613/5391)

FAN Te-lung (5400/1795/7127)

KAO Mei-shu (7559/5019/2579)

CHIAO Yu-ying (3542/3768/5391)

CHOU Yuan-i (0719/0337/1837)

CHIN P'ei-sung (6855/1014/2646)

All of the Peking Light Industry College (Pei-ching Ch'ing Kung-yeh Hsueh-yuan; 0554/0079/6535/1562/2814/1331/7108); coauthors of an article, "Studies on Citric Acid Fermentation Utilizing Crude Sweet Potato Starch." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 359-363) (FOR OFFICIAL USE ONLY)

CH'EN Shang-chin (7115/1424/6210)

KOU Yu-te (6753/3022/1795)

LIANG Te-yin (2733/1795/0603)

CHANG Yu-chung (1728/3022/6988)

CH'EN Yu-huan (7115/3768/3562)

Coauthors of articles, "Investigation on the Effect of Phosphate Fertilizer Application on Calcareous Soil" The authors acknowledge the assistance of Ma Fu-hsiang (7456/1788/4382), Chang Ch'i-chao (1728/0796/2507), Chen Yung-an (7115/3057/1344), Chen Fu-hsing (7115/4395/5281), Tu Fang-lin (2629/5364/2651), Ho Wei-hsien (6320/1792/0103); Ning Shou-ming (1380/1343/6900) of Tientsin Rice Institute; and Liu T'ien-chun (0491/1131/0971) of Lu-t'ai State Farm. (Peiping, Chung-Kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 34-38)

CH'ENG Te-ling, Institute of Mechanics, Academy of Sciences USSR; author of dissertation for the scientific degree of Candidate of Technical Sciences, "Spectra of Natural Oscillations of Continuous Elastic Plates," in Russian. (Moscow, Vechernyaya Moskva, 4 Jun 63, p 4)

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- CH'I T'ien-mao, Department of Pediatrics, Central Institute for the Advancement of Physicians, and Institute of Virology, Academy of Medical Sciences USSR; coauthor with M. Ye. Sukhareva, L. Ya. Zakstel'skaya, L. A. Berzina, R. S. Dreyzin, Ye. A. Linyayeva, V. V. Ritova, and N. L. Trivus of article, "On Intestinal Disturbances Connected With Some Viral Infections," in Russian. (Moscow, Voprosy Okharany Materinstva i Detstva, Vol 8, No 6, Jun 63, pp 59-63)
- CH'LEN Lin-chao (6929/5259/3564), vice-chairman of the Technical Physics Department, China Scientific and Technological University; author of an article titled "On Experiment." (Peiping, Kuang-ming Jih-pao, 30 Jun 63, p 4)
- CH'LEN Ts'un-jou (6929/1317/2677)
- HUANG I-hsiu (7806/0308/4423)
- LIN Chih-lan (2651/4460/5695)
- CH'EN Te-yuan (7115/1795/0337)  
All of the Microbiology Laboratory, Biology Department, Tsinghua University; coauthors of an article, "The Isolation and Screening of Bacteria for Glutamic Acid Fermentation." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 386-390) (FOR OFFICIAL USE ONLY)
- CH'ING Chin-shang, engineer; coauthor with F. Ye. Temnikov of article, "Reliability of Informational Networks," in Russian. (Moscow, Priborostroyeniye, No 6, Jun 63, pp 28-31)
- HO Ch'eng-wu, Mathematics Institute imeni V. A. Steklov, Academy of Sciences USSR; author of dissertation for the scientific degree of Candidate of Physicomathematical Sciences, "On Completely Reversible Turing Machines," in Russian. (Moscow, Vechernyaya Moskva, 4 Jun 63, p 4)
- HO Yang-tsan, coauthor with V. A. Venikov of article, "Calculation of the Established Nonsynchronous Regime of a Synchronous Generator," in Russian; received for publication on 4 March 1963. (Moscow, Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 3, May Jun 63, pp 266-275)
- HO Yen-tsan, Candidate of Technical Sciences, Moscow Power Engineering Institute; author of article, "On the Question of Resultant Stability of Electrical Systems," in Russian; received 8 June 1962. (Moscow, Elektrichestvo, No 6, Jun 63, p 91)

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- HSIUNG Ta-ho, Department of Petrography, Moscow State University; coauthor with Ye. A. Kuznetsov of Article, "Synthetic Pyroxenes and Their Birefringence Dispersion in Connection With Their Composition," in Russian; received 12 December 1961. (Moscow, Vestnik Moskovskogo Universiteta, Seriya 4, Geologiya, No 3, May/June 53, pp 31-38)
- HSU Jen-sheng, All-Union Institute of Medicinal and Aromatic Plants, USSR; coauthor with A. D. Kuzovkov of article, "On Alkaloids of Leontice Ewersmanii BGE: 5. Investigation of the Structure of Leontidyne," in Russian; received for publication 2 April 1962. (Moscow, Akademiya Nauk SSSR, Zhurnal Obshchey Khimii, Vol 33, No 6, June 63, pp 2067-2071)
- HU Han-wen (5170/3352/2429); author of article, "The Effect of Gibberellin on the Growing of Jute and Increasing Its Output." The author acknowledges the assistance of Chang Wen-ming (1728/2429/2494) and Jen Chang-erh (5117/331/0348), both of Chekiang Agricultural University. (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 49-50)
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- HUANG Ping-yu (7806/3521/3768); author of article, "The Effect of the Application of Fused Calcium-Magnesium-Phosphate Fertilizer in Increasing Yields." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 39-42)
- HUANG Wen-ch'eng (7806/2429/6134)
- CH'EN Shih-pi (7115/0013/1084)
- WANG Shu-te (3769/2885/1795)
- LI Lung-chen (2621 7893/3791)
- HSIEH Tai-kuei (6200/0108/4097)  
Coauthors of article, "The Relation of the Production of Royal Jelly by Bee Swarms to Honey-Collection and Bee Culture." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 45-46)

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HUANG Wen-ch'eng (7806/2429/6134)

YANG Kuan-huang (2799/0385/3552)

CH'EN Shih-pi (7115/0013/1084)

Coauthors of article, "Preliminary Studies on the Biological Characteristics of the Chinese Bee." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 43-44)

KUAN Ya-hsien, Institute of Crystallography, Academy of Sciences USSR; author of dissertation for the scientific degree of Candidate of Geological-Mineralogical Sciences, "Crystalline Structure of Bafertsite," in Russian. (Moscow, Vechernyaya Moskva, 3 Jun 63, p 4)

LI Yu, Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR; coauthor with O. P. Peterson of article, "Preparation of Interferon From Chicken Fibroblast Cultures Treated With Inactivated Vaccinia Virus," in Russian; received for publication on 25 November 1962. (Moscow, Voprosy Virusologii, No 3, May/June 63, pp 279-281)

LIU Men-yin, Irkutsk State University and Irkutsk Institute of Organic Chemistry, Siberian Department, Academy of Sciences USSR; coauthor with A. V. Kalabina and N. N. Pugacheva of article, "Synthesis of Some O,O - Dialkyl - S(  $\alpha$ -aryloxy)-ethylidithiophosphates," in Russian; received on 19 December 1961. (Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Khimicheskikh Nauk, No 3, Issue 1, 17 Apr 63, pp 141 - 146)

LO Kuo-kuang (5012/0948/0342)

CHENG Pi-ju (6774/4310/1172)

Coauthors of article, "The Effect of Gibberellin Treatment on Seedless White Grapes." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 47-48)

LO Yu-jung (5012/3768/2837); author of article, "Analysis of the Reasons for Increasing Yields of Winter Wheat and Pea Intercropping in Huai-pei Region of Kiangsu Province." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 14-19)

SHEN Chen-min, coauthor with N. N. Zakhavayeva of article, "On Determining the Durability of Coke Along a Unit Surface of Coal," in Russian. (Moscow, Koks i Khimiya, No 6, Jun 63, pp 13-15)

TANG T'u, Department of Normal Physiology, II Moscow Medical Institute imeni N. N. Pirogov; author of article, "On Localization of the Large Cerebral Hemispheres Cortex Functions in Rats: Report 2.

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TSENG Sheng (2582/4164); author of article, "Investigation on Tachina Fly of Oak Eggarmoth in Liaoning Province and Its Control." The author relied on the nomenclature used in an earlier work by Chao Chien-ming (6392/1696/6900) of the Institute of Zoology, Chinese Academy of Sciences. (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 31-33)

TS'UI Ch'en-yao, author of article, "Neanderthal Find in Ma-pa, Kwangtung Province, China," in Russian; first published in Voprosy Antropologii, No 13, 1963, pages 151-155. (Moscow, Letopis' Zhurnal'nykh Statey, 8 Jun 63, p 66)

TUNG T'i-ch'en, Docent at Shanghai University; author of article, "Morphological Features of Skeletal Remains and Teeth of Gigantopithecus in Connection With His Position in the System of Primates," in Russian; first published in Voprosy Antropologii, No 13, 1963, pages 3-32. (Moscow, Letopis' Zhurnal'nykh Statey, 8 Jun 63, p 66)

WANG Sheng-wang, Mathematics Faculty, Nanking University, Nanking, China; author of article, "Some Notes on the Solutions of Certain Nonlinear Differential Equations," in Russian; received for publication on 3 February 1963. (Moscow, Doklady Akademii Nauk SSSR, Vol 150, No 5, 11 Jun 63, pp 967-970)

WANG Shu-sheng (3769/2885/5116)

WANG Mei-ping (3769/2734/0393)

TSOU Han-ch'u (6760/5060/0443)

CHIN Chi-liang (6855/3444/5328)

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CHOU Yuan-i (0719/0337/1837)

CHIN P'ei-sung (6855/1014/2646)  
All of Peking Light Industry College; coauthors of an article, "Studies on Glycerol Fermentation Utilizing Crude Sweet Potato Starch." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 364-368) (FOR OFFICIAL USE ONLY)

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- WANG Szu-chin, Moscow Geological-Prospecting Institute imeni S. Ordzhonikidze; author of article, "On the Question of the Formation of Engineering-Geological Properties of Intrusive Rock," in Russian. (Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geologiya i Razvedka, No 5, May 63, pp 52-62)
- WU Hung-yuan (0702/7703/0337)
- WANG Szu-jui (3769/1835/4213)  
Coauthors of article, "Studies on the Ecological and Economic Characteristics of Rice Varieties of Northeast China." (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 8-13)
- WU Yen-lung (0702/3508/7893); author of article, "Black Root Phenomenon of Rice and the Causes of Its Occurrence." The work was done in 1959-1962 under the direction of professors Ting Ying (0002/7336) and Wu Cho-nien (0702/3504/1628), both of South China Agricultural College. (Peiping, Chung-Kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 1-7)
- YANG Shih, author of article, "On the Spectrum of Spin Waves," in Russian. (Moscow, Doklady Akademii Nauk SSSR, Vol 36, No 5, May 63, p 163)
- YEH Ch'ao-hui (5509/2600/6540), Radio Electronics Department, Peking University, author of an article, "A Short Talk on Summarizing Studies." (Peiping, Kuang-ming Jih-pao, 13 Jun 63, p 2)
- YEH Tzu-hsin (5509/5261/2450); author of article, "Observations on the Development of Radish and Its Hollow Heart Appearance." The author acknowledges the assistance of Prof Li Shu-hsuan (2621/2562/6513). (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No 1, Jan 63, pp 24-30)
- YEN Hsun-ch'u (7051/6676/0443)
- LU Yun-yu (4151/6663/3768)
- CHENG Yu-hsiu (6774/0948/0251)
- CHANG Kuo-wei (9738/0948/0251)  
All of the Institute of Microbiology, Chinese Academy of Sciences; coauthors of an article, "Studies on the Classification of Actinomyces I. Determination of Actinomyces ahygroscopicus Group." (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 391-401)  
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YEN Hsi-hsun (6768/6932/0534)

CHLANG Wen-ko (1203/2429/7041)

TUAN Wei-sheng (3008/4850/3932)

Coauthors of article, "Studies on the Utilization of Cytoplasmic 'Male-Sterile' in the Production of Hybrid Sorghum." The authors acknowledge the assistance of Li Wen-feng (2621/2429/7685), Shao Shu-ch'un (6730/3219/2504), and Hsu Shu-chen (6079/3219/3791). (Peiping, Chung-kuo Nung-yeh K'o-hsueh, No., Jan 63, pp 20-23)

YUEN Hua-ai (2867/5478/1947), Institute of Microbiology, Chinese Academy of Sciences; author of an article, "Studies on Rhizopus II. Studies on the Production of Fumaric Acid by Rhizopus." The author acknowledges the assistance of Fang Hsin-fang (2455/1800/5364). (Peiping, Wei-sheng-wu Hsueh-pao, Vol 8, No 4, Dec 62, pp 377-385)

\* \* \*

Web page: CIA-1000

7 September 2004

Ms. Roberta Schoen  
Deputy Director for Operations  
Defense Technical Information Center  
7725 John J. Kingman Road  
Suite 0944  
Ft. Belvoir, VA 22060

Dear Ms. Schoen:


In February of this year, DTIC provided the CIA Declassification Center with a referral list of CIA documents held in the DTIC library. This referral was a follow on to the list of National Intelligence Surveys provided earlier in the year.

We have completed a declassification review of the "Non-NIS" referral list and include the results of that review as Enclosure 1. Of the 220 documents identified in our declassification database, only three are classified. These three are in the Release in Part category and may be released to the public once specified portions of the documents are removed. Sanitization instructions for these documents are included with Enclosure 1.

In addition to the documents addressed in Enclosure 1, 14 other documents were unable to be identified. DTIC then provided the CDC with hard copies of these documents in April 2004 for declassification review. The results of this review are provided as Enclosure 2.

We at CIA greatly appreciate your cooperation in this matter. Should you have any questions concerning this letter and for coordination of any further developments, please contact Donald Black of this office at (703) 613-1415.

Sincerely,



Sergio N. Alcivar  
Chief, CIA Declassification Center,  
Declassification Review and Referral  
Branch

Enclosures:

1. Declassification Review of CIA Documents at DTIC (with sanitization instructions for 3 documents)
2. Declassification Status of CIA Documents (hard copy) Referred by DTIC (with review processing sheets for each document)



## Processing of OGA-Held CIA Documents

The following CIA documents located at DTIC were reviewed by CIA and declassification guidance has been provided.

OGA Doc ID	Job Num	Box	Fldr	Doc	Doc ID	Document Title	Pub Date	Pages	Decision	Proc Date
AD0335308	78-03117A	194	1	23	4363	Scientific Information Report Chemistry And Metallurgy (26)	3/7/1963	71	Approved For Release	3/25/2004
AD0335625	78-03117A	197	1	3	4460	Scientific Information Report Chemistry And Metallurgy (27)	4/4/1963	51	Approved For Release	3/25/2004
AD0336825	78-03117A	199	1	26	4562	Scientific Information Report Chemistry And Metallurgy (28)	5/9/1963	70	Approved For Release	3/25/2004
AD0332150	78-03117A	183	1	5	3916	Scientific Information Report Chinese Science (11)	10/4/1962	52	Approved For Release	3/29/2004
AD0332434	78-03117A	183	1	40	3951	Scientific Information Report Chinese Science (12)	10/19/1962	59	Approved For Release	3/29/2004
AD0332795	78-03117A	184	1	37	3988	Scientific Information Report Chinese Science (13)	11/5/1962	48	Approved For Release	3/29/2004
AD0333069	78-03117A	186	1	7	4028	Scientific Information Report Chinese Science (14)	11/16/1962	30	Approved For Release	3/29/2004
AD0333148	78-03117A	187	1	19	4078	Scientific Information Report Chinese Science (15)	11/29/1962	44	Approved For Release	3/29/2004
AD0333835	78-03117A	189	1	6	4144	Scientific Information Report Chinese Science (16)	12/21/1962	65	Approved For Release	3/29/2004
AD0334108	78-03117A	190	1	2	4179	Scientific Information Report Chinese Science (17)	1/10/1963	56	Approved For Release	3/29/2004
AD0334105	78-03117A	191	1	12	4230	Scientific Information Report Chinese Science (18)	1/18/1963	25	Approved For Release	3/29/2004
AD0334378	78-03117A	192	1	21	4277	Scientific Information Report Chinese Science (19)	2/1/1963	27	Approved For Release	3/29/2004
AD0334433	78-03117A	193	1	22	4322	Scientific Information Report Chinese Science (20)	2/15/1963	28	Approved For Release	3/29/2004
AD0335021	78-03117A	194	1	37	4377	Scientific Information Report Chinese Science (21)	3/8/1963	59	Approved For Release	3/29/2004
AD0335847	78-03117A	198	1	33	4526	Scientific Information Report Chinese Science (22)	4/18/1963	61	Approved For Release	3/29/2004
AD0336327	78-03117A	200	1	3	4578	Scientific Information Report Chinese Science (23)	5/2/1963	68	Approved For Release	3/29/2004
AD0337167	78-03117A	201	1	26	4643	Scientific Information Report Chinese Science (24)	5/23/1963	95	Approved For Release	3/29/2004
AD0337777	78-03117A	202	1	27	4687	Scientific Information Report Chinese Science (25)	6/6/1963	52	Approved For Release	3/29/2004
AD0338474	78-03117A	203	1	27	4727	Scientific Information Report Chinese Science (26)	6/20/1963	83	Approved For Release	3/29/2004
AD0338687	78-03117A	204	1	32	4772	Scientific Information Report Chinese Science (27)	7/5/1963	80	Approved For Release	3/29/2004
AD0339386	78-03117A	206	1	4	4820	Scientific Information Report Chinese Science (28)	7/17/1963	32	Approved For Release	3/29/2004
AD0339147	78-03117A	207	1	11	4862	Scientific Information Report Chinese Science (29)	7/30/1963	48	Approved For Release	3/29/2004
AD0340927	78-03117A	208	1	35	4924	Scientific Information Report Chinese Science (30)	8/21/1963	53	Approved For Release	3/29/2004
AD0341855	78-03117A	209	1	43	4974	Scientific Information Report Chinese Science (31)	9/5/1963	46	Approved For Release	3/29/2004
AD0342464	78-03117A	210	1	38	5013	Scientific Information Report Chinese Science (32)	9/16/1963	43	Approved For Release	3/29/2004
AD0342608	78-03117A	211	1	36	5054	Scientific Information Report Chinese Science (33)	9/27/1963	41	Approved For Release	3/29/2004