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AD NUMBER	
AD335021	
CLASSIFICATION CHANGES	
TO:	unclassified
FROM:	confidential
LIMITATION CHANGES	
TO:	Approved for public release, distribution unlimited
FROM:	Controlling Organization. Central Intelligence Agency, Office of Central Reference, 2430 E. Street, NW, Washington, DC 20505.
AUTHORITY	
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SCIENTIFIC INFORMATION REPORT
'CHINESE SCIENCE'
(21)

Summary No. 4377

8 March 1963

Prepared by

Foreign Documents Division
CENTRAL INTELLIGENCE AGENCY
2430 E St., N. W., Washington 25, D. C.

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SCIENTIFIC INFORMATION REPORTChinese Science (21)

This is a serialized report consisting of unevaluated information prepared as abstracts, summaries, and translations from recent publications of the Sino-Soviet Bloc countries. It is issued in seven series. Of these, four, Biology and Medicine, Electronics and Engineering, Chemistry and Metallurgy, and Physics and Mathematics, are issued monthly. The fifth series, Chinese Science, is issued twice monthly; The sixth series, Organization and Administration of Soviet Science, is issued monthly; and the seventh series, Outer Mongolia, is issued sporadically. Individual items are unclassified unless otherwise indicated.

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BIOLOGICAL SCIENCES

ZOOLOGICAL SOCIETY OF CHINA DISCUSSES ECOLOGY AND CLASSIFICATION --
 Peiping, Jen-min Jih-pao, 10 Jan 63, p 5

Recently, the Zoological Society of China convened a meeting of ecologists and classification specialists in Canton for scientific discussions. Attending the meeting were 48 delegates and 35 observers, from 45 units in 26 provinces, municipalities, and autonomous regions. Delegates submitted 311 papers, 90 of which were read at the conference.

Zoo-plankton, marine animals, parasites, fish, amphibians, birds, and animals were discussed. In the area of zoological ecology, with regard to fresh water fish, the crucial subject of foodstuffs from the point of view of aquatic biooogy was brought forth, attention was given to the complex nature of nutritional relations, and proposals were made on how to improve research methods on the productive forces of bodies of water. The South China Sea fish community was discussed, and it was proposed that different indices be used, meaning that the production unit can, according to the different indices, deduce the species composition of the catch at different times and different places. One report was a study of the size of the hairy shrimp (mao-hsia: 3029 4802). An analysis of the life cycle and environmental relations of the hairy shrimp disclosed a rather effective method to make predictions and forecasts about the shrimp. Experiments proved the accuracy rate of this method is high.

In the area of classification, it can be seen that the simple, formal descriptions of classification studies of recent years in China have developed along with ecology, reproduction, and life cycles to a research level equivalent to that of zoogeography. The important point discussed at the meeting was the scientific meaning of fauna and methods of animal zoning. Everyone believed that it is important to have a viewpoint in which historical development and ecology are adapted to production practices before a comparatively uniform body of knowledge concerning fauna and animal zoning can be had. Regarding the development and spread of the intermediate host of the Celebes nematode, it was submitted to the meeting that the principal intermediate host is the ant and not the cockroach as was formerly held to be the case. Research on the brown agate conch corrected past misconceptions about the animal. Finally, support for agriculture was discussed. The conference believed that zoological workers should do all that they could to develop research as follows: (1) under present conditions, rapidly develop production in the fish industry by advancing research on zoological problems related to fresh water, ocean, harbor, and shoal fish cultivation; (2) study how to protect and properly utilize zoological resources; on the basis of a clear understanding of the animal kingdom, carry out research on quantitative ecology and strengthen

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research on breeding, distribution, introduction and domestication; (3) concerning damage by birds and animals especially by rodents, to farms, forest, and cattle, carry out comprehensive investigations throughout the entire country, paying special attention to animal population and furnishing scientific evidence for rodent population forecast and control; (4) further develop preventive research on parasites that attack humans, and especially on important parasitic diseases, to guarantee the health of the people; concerning domestic animal, fowl, and cultivated-fish parasites, strengthen research and furnish materials to control them. In addition to this, the conference felt that it must urgently expedite research on plant nematodes, soil nematodes, and other soil animals to improve the soil and raise the output per unit of area and to furnish reference material in the field of zoology.

CANTON CONFERENCE DISCUSSES RESEARCH IN PSYCHOLOGY -- Peiping, Kuang-ming Jih-pao, 1 Feb 63, p 2

The first cooperative conference on research in psychology and education for the five provinces of South China was held recently in Canton. The conference was attended by more than 50 persons, and was participated in by more than 20 delegates from 12 high level teachers in schools and other units in the five provinces.

Besides reading papers, the conference also discussed problems in education and research in psychology. In their discussion of research methods, the delegates agreed that the controlled experiment, as well as observation, should be considered a primary method of psychological research. However, there was a difference of opinion on whether the laboratory experiment method or the natural experiment method should be considered best for controlled experiments. Those who advocated the laboratory experiment method argued that it makes possible for accurate observation and control, and is more convenient for the elimination of chance factors. Those who held the contrary opinion argued that the natural experiment is more like real life, and yet the individual factors can still be strictly controlled. Moreover, accurate results can be obtained through observation by various kinds of precision instruments. After a full discussion, most of the delegates agreed that the method of experiment is determined by the quality of the problem, and under present conditions, the natural experiment is the best method. The conference also discussed "the problem of inner contradiction in psychological development". Delegates from higher level teacher's schools and colleges exchanged experiences on teaching systems and teaching methods. They also exchanged ideas on unification of psychology educational materials in higher level teacher's schools and colleges in the five provinces.

Finally, the conference approved a cooperation plan for research in psychology and education in the five provinces. The cooperation plan includes three parts: (1) within the coming 5 years, research will be directed primarily at developmental psychology and educational psychology; (2) during the coming year, the whole area will cooperate in compiling a book to be used in psychology classes at all higher level teacher's schools and colleges; and (3) efforts to popularize psychology will be carried out by various methods.

BOTANICAL SOCIETY OF CHINA CONVENES CONFERENCE IN PEIPING -- Peiping, Jen-min Jih-pao, 10 Jan 63, p 5

The Botanical Society of China recently convened a plant ecology and geobotany conference in Peiping. The delegates came from 22 provinces, municipalities, and autonomous regions, and their number included 53 famous scientists and young scientific workers. The conference transmitted the results of work done in these two fields during the 13 years since the liberation. It centered its attention on problems concerning plant classification in China and support for agriculture. The important problems discussed may be outlined as follows:

1. Concerning the principles and proof of vegetation classification, some comrades believe that classification should be developed from the dynamic point of view -- that is, they would place vegetation types in the highest rank of classification. Under this system of classification, certain dissimilar communities of constructive life forms that emerge in different stages of succession can be combined and made into a sere. Moreover, this system contains within it appropriate places for such items as plant network (ch'un-wang: 5028/4986) and plant formation. These comrades believe that the principle of this system of classification is especially applicable to the classification of vegetation in the subtropical and torrid zones of China with its complexity of types of vegetation and extensive secondary vegetation. Other comrades hold contradictory vies. They believe the comprehensive special features of the plant community itself should be considered as evidence for classification -- community composition, external features, structure, and ecological features. At the same time they would pay attention to the succession relation of dissimilar communities but would reject classification within the category of succession.

Concerning the problem of rank and concept of classification of vegetation, many comrades believe that vegetation types are the highest rank of classification because types are formed by developing under definite climatic conditions and because classification by types suitably embraces community composition, morphology of external features, and geographic zones. Other comrades believe that vegetation

type is not the highest rank of classification because under it there also should be a place for vegetation society (hsing-tsu 0992/4809). Regarding the evidence of vegetation types, many comrades proposed that the features of vegetation itself should be made the principal ones in classification. But they still have not reached agreement on the question of whether or not the special features of the geographic zone and habitat of vegetation types should be considered.

Concerning the problem of classification systems, some comrades proposed that at present attention should be directed toward three important ranks -- namely, plant type, plant formation, and plant association. Under conditions in which vegetation is rather complex, as in the southern part of China, research on vegetation types should be begun from top to bottom, but in the northern part it should be begun from the point of view of association. Other comrades propose a series of as many as five or six views.

Regarding the question of vegetation zoning, the conference discussed, for example, vegetation in the Ch'in-ling mountain range area. Some suggested that when it came time for demarcating, "area should be first, then zone," and others suggested the reverse. They discussed whether or not the principle of, and the evidence for, vegetation zoning should be similar to that of natural zoning and discussed how to handle the relationship between horizontal zones and vertical zones in the vegetation zoning of mountainous areas. They also discussed the problem of whether or not the boundaries of vegetation zones and flora should match. Some comrades believe that the important evidence for vegetation zoning is the special features of the vegetation, that "area first then zone" can preserve the Ch'in-ling area intact, that when demarcating zones, the vertical zones and horizontal zones can be separated, and that the boundaries of vegetation zones and flora should match to a certain degree. Other comrades believe that, according to the special features of the vertical zone table of the mountain area, the zones should be divided first and then subdivisions made within the zones.

2. Regarding support for agriculture, all those attending the meeting subscribed to the following tasks: to supply theoretical evidence for the proper utilization of agricultural, forest, and cattle land; to actively participate in water and soil conservation work and propose measures to protect and control erosion; to record the country's vegetation resources; to furnish planning data for production units; to actively participate in the renewal of natural forests and the proper utilization of pasture land, and improve research thereon; to do research on problems of the plant community such as mixed forest building, forest and grain catch crops, and the mixed sowing of pasture land; to do research on ecological and biological problems such as on the rules governing plant phenology and reproduction; to

furnish theoretical evidence for the introduction of medical crops and the proper cultivation of crops and pasture land; and to develop research on the community of agricultural crops and agricultural ecology.

CHINESE FORESTRY SOCIETY HOLDS FIRST ANNUAL CONFERENCE -- Peiping, Kuang-ming Jih-apo, 10 Jan 63, p 2

The Chinese Forestry Society held its first annual conference from 17 to 27 December 1962. More than 300 delegates from forestry production units, scientific organizations, and higher level schools attended the conference. They discussed such topics as rapid afforestation, recovery and development of oil-bearing forests, rational management of existing forests, and comprehensive utilization of timber.

The conference received a total of 203 papers, of which 94 were read at the conference. These papers are the results of the past 2 years of work by workers in forestry science and technology in all parts of the country, and they involved all the various branches of the forestry field.

In the discussions on rapid afforestation, delegates from the northern areas were relatively unanimous on the proper planting density for the major fast growing trees, and felt that the trees should be planted two to three meters apart. (160 to 170 trees per mou). Many of the delegates felt that there are advantages to planting a mixed forest of poplar, ash, and white elm.

Delegates from the southern areas discussed the establishment and management of bamboo and pine forests. With regard to afforestation of pine trees, they decided that there were advantages to both planting of seedlings and growing the trees from seed in location. The delegates also pointed out that the decadence of the soil in southern pine forest is still occurring, and the key problem in afforestation with fast growing pine is the improvement of soil fertility in pine forests, and the prevention of water and soil losses. The delegates agreed that the areas of China most suitable to the development of walnut forests are the loess plateau of Northwest China, the mountainous areas of the Yangtze River basin, and the Shih-chih Shan area of North China. In regard to planting density, it was pointed out by some delegates that the traditional allowance of six trees per mou on level land and 12 trees per mou in hilly areas was generally reasonable.

SINKIANG SOCIETY OF PEDOLOGY HOLDS CONFERENCE -- Peiping, Jen-min Jih-pao, 24 Jan 63, p 5

The Sinkiang Uighur Autonomous Region Society of Pedology held a conference recently in Urumchi to discuss the stabilization and improvement of soil fertility. The conference received 100 papers. The major topics discussed were standards of soil fertility, relationship between soil fertility and unit area production, means of improving soil fertility in the autonomous region, techniques for improving the soil, and agricultural chemical analysis methods.

With regard to the relationship between soil fertility and unit area production, most of the conferees felt that increases and decreases in unit area production are the result of multiple causes, and soil fertility is only one of these. High production certainly indicates a condition of high fertility, but high fertility alone does not assure high production. However, some felt that soil fertility is the decisive factor in unit area production, and when unit area production decreases, it indicates that soil fertility has also decreased.

With regard to the problem of improving soil fertility, some of the participants felt that under present conditions, efforts to stabilize and raise soil fertility should begin with improvement of the soil, based on regulation of water and nutrient content of the soil, and with crop rotation as the central method. Some of them stated that the short range aim should be the recovery and stabilization of soil fertility, and the long range aim should be to increase soil fertility. All agreed that the general methods of accomplishing this are: (1) improvement of the soil (particularly salinated soil); (2) extensive planting of clover, green fertilizers, and bean crops; (3) careful plowing, and improvement of soil conditioning through deep plowing, subsurface plowing and letting the land lie fallow; (4) carrying out a rational arrangement of crops, rotation of crops, and inter-planting; (5) increasing the use of fertilizer, particularly the rational utilization of organic fertilizer; (6) rational irrigation; and (7) carrying out water and soil conservation, and preventing erosion by wind and water.

The conference agreed that comprehensive measures should be adopted to prevent the secondary salination of soil: (1) control and lower the underground water level; (2) eliminate salt content of the soil; and (3) prevent salination and utilize salt-saturated ground, by strengthening surface cover, planting crops which are resistant to salination, and developing strains which are resistant to salination.

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The conference also discussed the fact that although there are a large number of domestic animals in Sinkiang, the rate of utilization of animal manure is very low. The following measures were suggested to remedy this: (1) Animals should be sent to farming areas to pass the winter; (2) the supply of fuels in semiagricultural, semianimal husbandry areas should be improved, to reduce the use of manure as fuel; (3) develop the raising of animals on the farm (develop the raising of hogs in the Han areas, and develop the raising of cattle in the minority areas); (4) improve manure collection methods; and (5) adopt compact storage methods and the addition of other constituents to the manure.

HOPEH COMPLETES SOIL SURVEY WORK -- Peiping, Kuang-ming Jih-pao, 1 Feb 63, p 1

Scientists and technicians have completed a survey of 180 million mou of cultivated land and a portion of the barren land in Hopeh province. For the past several years, scientific and technical workers of the Institute of Soils and Fertilizers, Hopeh Province Academy of Agricultural Sciences, and related units have visited a great many old experienced farmers, established more than 500 temporary soil chemistry laboratories in all parts of the province, and have tested more than 90,000 soil samples. With this work as a foundation, the Hopeh Province Academy of Agricultural Sciences and the Resources Utilization Bureau of the Department of Agriculture and Forestry have compiled the following : Ho-pei Sheng Nung-yeh Tu-jang Chi [Agricultural Soils of Hopeh Province], Ho-pei Sheng T'u-jang Fen-lei Kai-Kuang [A Hopeh Province Soil Types], Ho-pei Sheng T'u-jang Fen-pu T'u [Hopeh Province Soil Distribution Maps] and Ho-pei Sheng T'u-jang Fei-li T'u [Hopeh Province Soil Fertility Maps.]

The soil survey revealed that one fourth of the total cultivated area in the province is low quality, low production soil. Most of this is saline land. In addition to this, almost 30 percent of the total cultivated area is dry barren soil. It was also discovered that rain is the major source of soil moisture in the dry areas of the province. In areas of this type, they decided that it will be necessary to make full utilization of natural water supplies until such time as an irrigation system can be established.

MEDICINE AND PUBLIC HEALTH

CHUNG-SHAN MEDICAL COLLEGE FURNISHES REPORTS ON PARASITIC DISEASES -- Peiping, Kuang-ming Jih-pao, 17 Jan 63, p 2

[Following is a full translation of an article by Chung-shan Medical College Prof Ch'en Hsin-t'ao (7115/1800/7118).]

Since 1953, the Parasitology Teaching and Research Section of Chung-shan Medical College has been developing research work on controlling parasitic diseases and doing its utmost to wipe out serious parasitic diseases, especially those that are dangerous in the villages. During this period, the teaching and research section has applied its greatest efforts to research on schistosomiasis and has engaged in research on the mosquitoes which carry malaria, filariasis, and epidemic type B encephalitis, and on mites. Recently it has developed research on the lung fluke.

In China, the Anopheles mosquito carries malaria in flat areas; in other areas it also carries filariasis and epidemic type B encephalitis. In 1956 and 1957, we had hoped to understand the reproduction habits of the Chinese Anopheles mosquito and sought methods to exterminate it, resulting in our discovery of the close relationship between its breeding in southern areas and in rice paddy water. Our research employed such methods as the close planting of paddy rice, the cultivation of fish in rice paddies, and the draining of rice paddies to control mosquito breeding. Viewed in the light of experimental reference materials, if paddy rice cultivation methods are integrated as the circumstances permit, the result is effective. Many places throughout the country also carried out experiments and the results were the same as ours. We also made certain theoretical inquiries regarding the above methods. On the question of the vector of filariasis, we once engaged in investigations in such places as Hai-lu-feng, Huai-chi, and Hainan and proved that the Shou-lieh [literally, the hunting of game] Culex mosquito is the carrier of filariasis in Kwangtung Province. Regarding epidemic type B encephalitis, we ascertained that this species of Culex is the vector. Research in epidemiology showed that it also is the reservoir host and showed the relationships between its living habits and the spread of the disease. We proved its role in the spread of the disease by studying two important areas, seasonal waxing and waning and its desire for blood. Regarding the above-mentioned successful research, part of it was done with the cooperation of other units.

Mosquito research involved a large area and many kinds of disease carriers. In summarizing past work at the end of 1960, we decided to shorten the battle line and concentrate our efforts on the Chinese Anopheles mosquito. Moreover, in this work we concentrated on ecological habits, because a thorough understanding of this field has theoretical and practical significance regarding epidemic analysis and vector control. In the past year or two, we have been inquiring into changes in blood sucking activities, resting periods, seasonal waxing and waning, and seasonal time spans of the Anopheles.

Our research proved that of all the various activities of the Anopheles, the one in which the insect rests in ditches and puddles in open country is the most important one. (The various activities of the insect includes developing into adults after developing wings, resting in hidden places in the open country, swarming and mating, sucking blood after mating, sucking blood after laying eggs, digesting blood after ingesting it, and developing ovaries.) This reference material on the extermination of the insect is of definite value.

Concerning the blood sucking activity, we believe that in the first place it has a close relation with climatic factors. In general we can say, that the Chinese Anopheles begins blood sucking after sunset and is also affected by moisture and warmth at this time, advancing

the starting time in winter and prolonging it in summer. In addition, there is a relationship between moonlight and this activity. When there is a full moon, this activity is intensified, which is of a practical significance in the study of epidemics and for the individual in controlling insect biting.

From the point of view of the mosquito's ecological habits, the insect's seasonal waxing and waning, and the duration of its life span at different seasons are, in addition to its blood sucking activity, important factors in the spread of epidemics. Our experimental stations in on-the-spot observations reckoned the life span of the female at different seasons by observing changes in the number of ovipositions in the ovary structure. We believe that in Kwangtung the Chinese Anophles mosquito has two high production periods, one in spring and the other before and after fall. Because the first one is short, it does not have noteworthy significance in the spread of disease, but in the second period the life span of the insect is prolonged, which is suitable to the development and reproduction of pathogens within its body. And owing to the prolonged life span, the number of blood-sucking times is increased and the chance for the disease to spread is increased accordingly.

Regarding research on the blood fluke, our teaching and research section, with the help of other units, has carried out a series of projects in such fields as investigation of epidemic areas, water snail ecology, methods of exterminating the water snail, diagnostic methods, control by the individual, and epidemiology. Between 1950 and 1951, we investigated epidemic areas in Kwangtung Province. Having ascertained the scope of the epidemic area and the number of people suffering from the disease, we made many reaction experiments, such as antigenic precipitating reactions, active metacercaria reactions, active cercaria percutaneous reactions, and intracutaneous reactions. We believe that intracutaneous reaction is probably the most suitable over-all reconnaissance method and have submitted a set of important examination points and clearly defined standards for it, which we then used on a large scale with equally good results. Research on water snail ecology included many fields such as species, life history, environment, habits, food habits, and seasonal distribution. Reference materials which prescribe changing environment, or methods to change environment to destroy the water snail, are correct. Research on the reproduction of the water snail in epidemic areas and on seasonal variations in infested water shows that the best time to cut down grass to destroy snail eggs is before the water rises, and also proves that cattle play a role in the study of epidemics. In doing research on methods to destroy the snail, we experimented with ditches and drains, and the burning off of grass. Having done research on the infectious condition of the snail and various kinds of infested water,

we suggested the safe season for reclaiming grassy ponds in epidemic areas. Having performed various kinds of experiments for the protection of the individual, we proposed that turpentine is an effective remedy to protect the skin of the legs against penetration by the cercaria.

From 1957 to the present, we have, with the help of concerned units, studied ways to destroy the snail by using reservoir water to drown it, especially in Ying-te and San-shui. The best method was to build reservoirs with small embankments according to the geographical features and cause the area infested with snails to be flooded to a specific degree. Each winter the water was drained off and the condition of the dead snails examined. The experiment proved that in some reservoirs there were no traces of snails, in others the snail density annually descended to assigned indications or lower. The experiments proved that these methods not only can destroy water snails and halt the spread of schistosomiasis but is also of important significance to agriculture. It is important because the areas flooded originally were not suitable for agriculture: their topography was complex, their surface not level, and they were covered with thorny thickets. After one season of being flooded, the vegetation beneath the water line began to rot, most of the grass died out, and the thorny thickets decayed. After two seasons of being flooded, the bottom had already become rich mud. It goes without saying that this dead vegetation makes it possible to increase the area of cultivatable land. Also the stored water can expell the fear of drought because it can be used for irrigation purposes. The peasants, furthermore, can use the reservoirs to grow fish, thus increasing subsidiary production.

The preliminary results of drowning snails is in general very good, but how it happens and what the basic theory is, is worthy of our further research. Thus our experimental stations are currently engaged in a detailed study of the snail's living habits and biochemistry to understand its vitality and weaknesses, to improve methods of destroying it, and to consolidate the results thereof.

Tsutsugamushi, a mite which causes an acutely contagious disease along the rivers and streams of China and in certain areas of south China. Especially in sparsely populated areas throughout the world, this disease is a serious threat to man and has hindered the development of these areas. Regarding research on the tsutsugamushi vector, theoretically it was important to define the epidemic distribution of the disease in Kwangtung and the vector mite and its relationship to natural conditions; in the area of practice, we had to inquire into various methods to destroy the mite or prevent its causing injury. Concerning various species of mite throughout the province, first the tsutsugamushi and then other important vector species, we already understood their

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classification, life cycles, and ecology, especially the laws governing their reproduction and activity. We had furnished one place with preliminary reference material on predicting the number of vector larvae and the spread of the disease. In addition to this, we were well informed about certain typical epidemic areas in Kwangtung Province or where the threat of it lay hidden, and the type and characteristics of the epidemic as well as the rules governing the mite's reproduction and area distribution. Formerly, we had experimented with several kinds of chemicals to study the poisonous effect on the mites. Of these, one appeared to have a remarkable action in that it subjugated the activity of the larvae within a very short time. Simultaneously, we employed radioactive isotopes, such as cobalt 60, and studied their short and long range effects. The reference material thus obtained, aside from raising some theoretical questions, can be employed in practical work. Thus from the angle of developing further support for agriculture, we must continue to handle more scientific materials to produce more reliable and correct estimates of the threat and the spread of tsutsugamushi and to furnish reference material to concerned units to formulate and plan work. Moreover, we must theoretically solve vector questions related to the spread of tsutsugamushi to make predictions about control work and to present a passive situation when new conditions suddenly arise.

Flukes of the *Paragonimus* genus usually lead to serious illnesses. They not only destroy the tissue of the lungs and brain but also cause death. Since the National Lung fluke disease Conference in Hangchow in 1954, various places have begun scientific research and control work of lung fluke disease. Our teaching and research section, in view of the importance of this work and the good conditions prepared by Kwangtung Province regarding pathogen research, began to make inquiries into this area in 1961, hoping that we could gradually solve the following problems: (1) to determine the species of lung fluke pathogens throughout the country as well as in Kwangtung Province; (2) to determine whether or not Kwangtung Province is a lung fluke epidemic area; and (3) to control lung fluke disease. With the strong support of our hospital party committee, this work has already gotten off to a good start.

In 1959, we reported a new species of *Paragonimus* which we discovered in the body of an animal and named it Szu-shih (2448/3044) *Paragonimus*. In 1960, we called attention to the many contradictory views in publications and to the fact that *westermani* *Paragonimus* is not the only pathogen of lung fluke disease. This view was confirmed in 1961. About this time, we identified a *Paragonimus* fluke taken from the body of a man by the Szechuan Parasitic Disease Control Office as a *szu-shih* *Paragonimus*. A specimen from Kweichow was identical with the *szu-shih*, which makes it clear that at least 2 species of *Paragonimus* flukes found in the bodies of men in China have been confirmed, namely the *westermani* and the *szu-shih*.

Since the beginning of 1961, we have on the one hand studied the life cycle of the szu-shih Paragonimus and on the other have continued to investigate the species of Paragonimus in Kwangtung Province as well as inquiring into their existence in nonepidemic areas. In less than two years, we not only obtained definite information about the life cycle of the szu-shih Paragonimus but also discovered two new species and named them the chu-i (1565/4203) and the san-t'ing-cheng (0005/1627/2973). Recently, we discovered for the first time the cystiocercus of the westermani in the body of a man, which is extraordinary and a discovery of great significance. The four species mentioned above plus another two discovered heretofore, namely the iloktsuenensis and the ta-p'ing (1129/1629) constitute the Paragonimus composition of Kwangtung Province, two of which have been confirmed as parasites of man. What is important to remember in research on Paragonimus species is that the control methods selected for different pathogens are definitely not the same, yet the species with which we are familiar constitute an important starting point for effective control of the others.

At the present rate, we will continue to gradually broaden our research and solve at an early date the epidemic problem in Kwangtung Province. Research on the distribution of this disease throughout the country, as well as in Kwangtung, and research in immunology and pathogen ecology, are also gradually developing. The lung fluke spreads in the villages, thus injury suffered by the peasants is extremely serious. It is hoped that our research will become a theoretical basis for even more effective controls.

KIANGSI PROVINCE DEVELOPS WORK IN PREVENTION OF SCHISTOSOMIASIS -- Peiping, Kuang-ming Jih-pao, 11 Jan 63, p 2

At the present time it is the season for fishing, hunting and the harvesting of lacustrine plants in the P'o-yang Hu [lake] area in Kiangsi Province. Since the beginning of winter, health workers in more than ten hsiens along the lake shore area, have brought large quantities of preventive drugs and equipment to the lake shore areas where schistosomiasis infections are prevalent to aid the communal workers in their prevention work.

As a result of proper land control, the health workers in many instances were able to obtain good results in their preventive work. In Shuan-hsiang, Lo-ting, and Lien-hu of Po-yang Hsien, the communal workers had to pass through the infected area when they went to the lake to work in production. Along the route, the sanitary workers posted themselves along the schistosomiasis-infected ditches, lake shores, wooden piers, and ferry boats to discourage and make it difficult for the communal workers to wade into the water, thus creating in them a sense of disease prevention. Moreover, more than 30 safe routes were established.

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At the fishing inlet of Yu-kan, Tu-ch'ang and Nan-ch'ang hsien, preventive stations were established. On a certain day the fishermen were given preventive drugs, and were supplied with high rubber boots and rubber trousers. On each return from a fishing trip, each fisherman must have his stool examined.

HEALTH MOVEMENT INAUGURATED ALONG MASS LINES -- Peiping, Kuang-ming Jih-pao, 15 Jan 63, p 1

To uphold its record of being a model healthy hsien for the villages in all of China for the past five years, Chi-shan Hsien of Shansi Province is presently conducting a patriotic health campaign along the mass line with emphasis on cleanliness and the prevention of communicable diseases during the winter. Prior to and immediately after the New Year, a reporter went to this hsien to conduct a tour of 14 production brigades of 5 people's communes. In his observation, he saw clean surroundings, healthy old men and youngsters, and abundance of domestic animals. The communal members of the well-known model health village -- Tai-yang Tsun, braved the cold weather every day at dawn to sweep the outside of their houses clean and fresh. In this locality, a new habit has been adopted by the people in which "everybody awoke 10 minutes earlier than usual, and every household talks about health." According to the cadres of the hsien health bureau, out of 174 production brigades in the entire hsien, 139 have adopted the habit of cleaning house daily or at an interval of a few days.

After the winter crop of wheat has been planted, members of all the communes in the entire hsien immediately went into the streets and alleys, courtyards, animal enclosures, grinding mill yards, and latrines to clean out hidden corners with their shovels and baskets. The accumulations of dung, rubbish, dirty soil, and weeds since last summer and fall were removed, and the rubbish that had been collected by the communal members was turned into fertilizer. According to incomplete statistics, in two months' period more than 40,000 carts of fertilizer were produced by this hsien as a result of the clean-up campaign. Moreover, all the communes were accumulating fertilizer, putting into good condition the toilets, pig and goat pens, and the household fertilizer compost ditches and preventing the loss and scattering of human excreta.

In the prevention of an epidemic of colds and whooping cough and other contagious diseases during the winter, the medical workers, who were assigned to health station in all the communal medical clinics and production brigades of Chi-shan Hsien, started their work in protective inoculation. At the present time a number of persons have received their vaccine injection or taken preventive medicine orally.

In addition, medical personnel disseminated information on the subject of health and prevention of sickness. On the walls along the streets of over ten production brigades, the reporter noticed many propaganda health notices written on blackboards. The production brigades, which firmly supported schools for the people this winter, all have scheduled health courses in their schools and have engaged medical personnel to teach them.

Winter time is the period for storing grains. All the commune workers in Chi-shan Hsien used various successful methods of trapping and poisoning rats, and filling up rat holes in order to eliminate the rats and protect the grain. In many of the production teams in Tai-yang and Ti-tien communes, rats commonly found in homes were rarely seen, due largely to the resolute support for several years of the regular and necessary campaign of "Eliminating the four pestilences." At present they are waging a broad campaign of destroying field rats. In the homes of the communal members, they are still using the spraying and fumigating methods to eliminate the mosquitoes or flies that had survived the winter weather.

Included in the patriotic health campaign this winter for Chi-shan Hsien was also the work of providing good fodder and protecting their domestic animals for the winter. This reporter has inspected several tens of feeding grounds and seen these animal enclosures well swept and cleaned, and the area for feeding restricted. To prevent contamination of fodder, a screen made of grass is placed over the feeding bins.

Training in animal feeding and nutrition in relation to veterinary medicine is being taught widely throughout the hsien. In all the production brigades of the Ti-tien Commune, the veterinarians and those who have experience in feeding animals are being organized. Animal clinics are being established purposely for the prevention and treatment of animal diseases and for sanitation work. While in the midst of their work, some production brigades still are deeply concerned with new changes in health organization which are intended to form the foundation for the patriotic health movement for next spring.

RAPID DEVELOPMENT OF MEDICAL THERAPY AND PREVENTIVE MEDICINE -- Canton, Chung-kuo Hsin-wen, 30 Jan 63, p 10

In the field of medical therapy and preventive medicine, rapid development has been made on the island of Hai-nan, Kwangtung Province. At the present time in the city of Hai-k'ou, medical clinics have been founded everywhere throughout the city. Since the liberation, Hai-k'ou City has set up, one after another, 6 public polyclinics and specialized clinics. The city has also both women's and children's health centers, mental hospitals, and Chinese traditional medicine clinics. A total of 72 hospitals, health centers, health clinics and medical care clinics were established in industrial factories and enterprises, and in the urban and suburban communes. In comparison, the number of hospital beds and medical workers in the hospitals and health clinics were 7 to 8 times more than during the early part of the liberation. The standard of medical techniques was also elevated remarkably. For example, facilities are available for performing major surgical operations such as cardiosurgery and pulmonectomy. In addition, the city of Hai-k'ou has established 3 specialized preventive medicine centers and a research center from parasitic diseases.

The development of medical therapy and preventive medicine in Hai-k'ou had succeeded in protecting the health of the inhabitants of the entire city. Before the liberation, frequent appearances of highly contagious and epidemic diseases such as small pox, cholera and plague had already been eliminated. The number of cases in other prevalent infectious diseases such as, malaria, measles, typhoid fever, and pertussis were also lowered year after year. The malaria rate has dropped from 6 per cent prior to the liberation to the low rate of 0.24 per cent.

CHUNG-SHAN MEDICAL COLLEGE AIDS CONTROL OF COMMUNICABLE DISEASES -- Peiping, Jen-min Jih-pao, 10 Jan 63, p 2

A large number of professors, instructors, doctors, and upper class students of the Chung-shan Medical College in Canton recently went to the villages in two groups to aid the work of controlling communicable diseases in the winter time and also to conduct a patriotic health campaign. The first group of 500 men was organized into four medical teams. During the latter part of December 1962, these teams were sent up to Chung-shan, Yang-chiang, Kai-p'ing, Chung-hua, and Hua-hsien. For 4 weeks, they were able to help the local health departments to carry on their work.

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

Upon reaching Chung-shan Hsien, the health team began to initiate inspection and preventive work in the local areas for communicable diseases during the winter season. In addition to inoculation work for the prevention of communicable diseases during the winter season, prevention of difficult childbirth and women's diseases, and training of midwives in the local areas of Yang-chiang Hsien, the medical teams also went to the fishing areas to give medical treatment; the professors in the teaching and research section of ophthalmology conducted a study of the local fishermen who were going blind from eye diseases. This study would facilitate future work in the treatment of these diseases by the medical men of the second group when they arrive in the village. The medical team going to Kai-p'ing Hsien is assisting the local hsien to set up five medical clinics in the local areas.

KWANGSI MEDICAL COLLEGE ORGANIZES LECTURE GROUP -- Peiping, Kuang-ming Jih-pao, 22 Jan 63, p 2

A lecture group composed of physiology prof Li Chih-shang (2621/1807/1424) of Kwangsi Medical College and various doctors experienced in internal medicine, surgery, pediatrics, radiation and ophthalmology from the hospital attached to the college is presently delivering lectures in I-shan Hsien, Liu-chou special district, to doctors sent from various neighboring hsien to attend the lectures. Their objective is to raise the theoretical and technical levels of medical personnel and to help the hsien hospitals to cure diseases which are difficult to diagnose, as well as to carry out difficult surgical operations. Over the past several years, lecture groups like this have established close liaison with the hsien hospitals, and when the hsien hospital encounter a difficult disease or a technical problem, they write a letter to the medical college for help.

CHINESE OPHTHALMOLOGISTS DISCUSS PREVENTION AND TREATMENT OF TRACHOMA AND GLAUCOMA -- Peiping, Jen-min Jih-pao, 10 Jan 63, p 2

Not long ago, more than 100 ophthalmologists from all over China gathered at Cheng-chou, Honan Province to discuss the problems of prevention and treatment of trachoma and glaucoma.

Trachoma, a highly infectious eye disease which causes blindness, is one type of contagious eye disease caused by a virus infection. Since 1956 when Chinese ophthalmologists for the first time were able to isolate this type of virus, numerous successes were attained everywhere in the field of prevention and treatment of trachoma. Recently workers in the field of ophthalmology in Honan Province have selected

eight kinds of drugs capable of killing these viruses and 98 kinds of medicine capable of controlling the virus. In Hunan, Chekiang and Kiangsi Provinces, the workers in the field of ophthalmology have made actual observation of results of a certain amount of Chinese and western drug therapy and have taken advantage of the experiences offered by the departments in the treatment of eye diseases with medicine and optical devices.

The general opinion now in the work of preventing trachoma is that hereafter, the work must be heavily stressed in the villages. The experts have hoped that the brilliant ophthalmologists of the state and municipal medical clinics will be able to go deeply into the hsiens and the communes to offer short term training as a means to further the education of the ophthalmologists in certain sepecific and allied subjects. They have also decided that all the medical workers in the field of ophthalmology when going to the villages must first carry out measures to help those with trachoma to regain their eyesight again quickly.

In the field of glaucoma therapy, the participants at this symposium also discussed this subject very seriously. This type of eye disease which causes blindness is one which has only been discovered recently and its rate of incidence is only second to trachoma. At the present time, the cause of this disease is still uncertain. When discussing this particular topic at the conference, special points were brought out on the problem of how difficult it is to detect glaucoma after the onset of the disease, how easy it is to lose the eyesight in both eyes, and also how important it is to conduct a study of early diagnosis and early treatment. After these topics were discussed thoroughly at this meeting, it was suggested that not only scientific discussion on these subjects be conducted by those interested in ophthalmology throughout the country but also a definite standard be established on the method of early diagnosis of glaucoma.

OUTSTANDING WORK IN TREATMENT OF EYE DISEASES -- Canton, Chung-kuo Hsin-wen, 14 Jan 63, p 6

Outstanding achievements have been made in the treatment of eye diseases in the suburbs of Shanghai. Since 1958, both senior and medical personnel of the Shanghai Central Trachoma Clinic have been going out to their communes in the various hsiens in the outlying districts of Shanghai to administer treatment to various types of eye diseases among the farmers. They have treated more than 6,800 cases, applying various techniques; more than 200 persons with cataracts have regained their eyesight. In the meantime, research and treatment of trachoma is being continued.

For example, a 40-year-old farmer of Niu-p-eng Chen of Tsung-ming Hsien, Kiangsu Province had a serious eye disease for over 30 years. He had lost most of his vision. However, after undergoing treatment his vision quickly improved and he was able to participate in production work again. Ch'en Mao-kou [7115/3029/3699] of the San-hsing commune in Tsung-ming Hsien had lost his eye sight for over 10 years but was able to regain his sight after treatment.

In the 72 health centers of 10 hsien in the suburb of Shanghai, the Shanghai Central Trachoma Clinic has established a section specializing in ophthalmology and staffed it with junior-grade eye technicians.

AN ADVERTISEMENT OF A NEW ANTIBIOTIC DRUG -- Peiping, Jen-min Jih-pao, 2 Feb 63, p 6

The Chin-an [0036 1344] Pharmaceutical Factory of Wu-han, Hupeh Province, has recently advertised in this newspaper the manufacture of a new antibiotic drug under the trade name of "FUPADANTINUM" (Fu-nan-tan-ting, 0656/1133+0809+0656/2481+0656/1353).

The manufacturer claimed that this drug is a new and strong antibiotic which is effective in treating diseases of the urinary system such as, pyelonephritis, nephritis, penitis, cystitis, and linea glutitis anterior.

ADDITIONS TO INDEX OF CHINESE MEDICAL DOCUMENTS -- Peiping, Kuang-ming Jih-pao, 29 Jan 63, p 2

The quarterly publication, Chung-kuo I-hsueh Ch'i-k'an Wen-hsien So-yin [Index of Chinese Medical Periodical Documents], edited and published by the Library of Nanking Medical College, has begun in 1963 to include indexing of documentary material other than that published periodically. Moreover, its name has been changed to Chung-kuo I-hsueh Wen-hsien So-yin [Index of Chinese Medical Documents], and it will be published four times per year.

This library has been working on the editing of document indexes since 1953, and the 1949-1956 portion of Chung-kuo I-hsueh Wen-hsien So-yin has already been published by the People's Health Publishers. The 1957-1959 portion has been organized in a card file, and is being prepared for printing and publishing. In 1960, they also completed a file of work in the medical sciences in the 10 years since the founding of the nation.

TECHNICAL SCIENCES

PEIPING MINING COLLEGE BUILDS NEW TYPE ELECTRIC DRILL -- Peiping, Kuang-ming Jih-pao, 3 Feb 63, p 2

The Peiping Mining College, with the cooperation of the Electric Machinery Plant at Fu-shun Coal Mines, has designed and successfully constructed a new type, portable, 1.2 kilowatt electric drill which will not cause explosions. This new model SD-12 electric drill is lighter, runs cooler, is more powerful, and can take a greater overload than former domestically produced electric drills. Use in the mines has proved its capabilities. It is presently being produced in quantity at the factory attached to Peiping Mining College, and at factories in Fu-shun and Shanghai, for supply to coal mines.

The portable, explosion-proof electric drill is simple to operate and safe to use, and is one of the most important productive tools in use in coal mines at present. In accordance with the production requirements of coal mines, the Peiping Mining College began in 1956 to carry out research on the experimental construction of an aluminum alloy shell for an antiexplosion electric drill. In 1959, they began formal small-scale production. At that time there was a shortage of technical data, and many production problems did not find rational solutions, so the drills produced were not of good quality. As a result, the factory attached to the college, the General Electrical Engineering Teaching and Research Section, the Machine Building Teaching and Research Section, and the Coal Mine Machinery Designing and Research Institute began separately to carry out research on the unstable characteristics of the drill, its overheating, and its unstable characteristics of the drill, its overheating, and its tendency to burn out.

A technician at the factory attached to the college, instructors of the Machine Building Teaching and Research Section, and some of the advanced students carried out many experiments with the use of a metal-casting mold for the outer shell of the drill, and achieved a higher production rate and better part quality than with the former sand-casting mold. Instructors of the General Electrical Engineering Teaching and Research Section and technicians from the plant attached to the college visited mines and carried out detailed investigations of the conditions of use and remaining problems. They solicited ideas for improvement of the drill from a great many coal miners, and they collected samples of foreign and domestically produced electric drills and subjected them to analysis and a series of laboratory experiments. In 1960, under the direct guidance of the Machine Building Bureau of the Ministry of Coal Industry, the Peiping Mining College, on the foundation

provided by its productive and research experience, cooperated with related units and finally designed this drill which is particularly suitable to coal seams and coal quality conditions in China.

MINING COLLEGE GRADUATES A GROUP OF TECHNICIANS -- Peiping, Kuang-ming Jih-pao, 1 Feb 63, p 2

The first group of mining engineers and technicians to be trained by the Chiao-tso Mining College (Chiao-tso K'urng-yeh Hsueh-yurn; 3542/0155/4349/2814/1331/7108), jobs in Honan, Hupeh, Hunan, Kwangtung, Anhwei, Kweichow, Kansu, Tsinghai, Inner Mongolia, and other areas. There were a total of 493 graduates in this class. They studied such specialties as underground exploitation of coal seams, mining electricity, and geological surveying, as well as special courses on mining electrical engineering, ventilation and safety, and labor and wages. Of these graduates, one half or more are members of the Communist Party or the Communist youth corps, and 70 percent of them come from worker or peasant families.

These graduates have basically completed a university curriculum for their specialities. The chief engineer for the South Central Coal Control Bureau and the chief engineer for the Chiao-tso Mining Bureau, who participated in the oral examination of graduate designs, stated that this class of graduates is of relatively high quality.

KWEICHOW TRAINS INITIAL GROUP OF ENGINEERING AND SCIENTIFIC STUDENTS -- Peiping, Kuang-ming Jih-pao, 1 Feb 63, p 2

After a strict examination of graduate designs, about 60 percent of the initial class of graduates from Kweichow Engineering College received ratings of excellent or good and will be assigned to jobs. This group of graduates totals 596 in number, and are graduating in seven departments, including metallurgy, mining, machinery, electrical equipment, civil engineering and architecture, geology, and chemical engineering. Their nationality backgrounds are Han, Miao, Pu-i, Moslem, T'ung, Pai, and T'u-chia. More than 25 percent of them were originally workers or came from worker or peasant families.

In four years, these graduates have completed all of the courses prescribed by the curriculum. Following this, the college extended their course to include practical work and a graduate design, to give them better basic training as engineers. Not only did the whole class pass the graduate design, but 50 percent of them received ratings of excellent or good. Some of the graduate designs can still be provided to production departments for consideration.

ARCHITECTURAL SOCIETY HOLDS CONFERENCE -- Peiping, Kuang-ming Jih-pao,
22 Jan 63, p 2

The Architectural Society of China held its second conference on architectural physics in Peiping recently. The main object of the conference was to improve architectural quality and utilitarian functionalism, and to improve working and living conditions. Their discussions stressed sound insulation in construction, standards of illumination, and measures to cool structures in hot areas.

Structural sound insulation is particularly important in residential construction, and is one of the problems which must be improved in architectural design. The conference served to exchange a great deal of actual experience and results of experiments in this area, and provided design and construction units with a great deal of data on sound insulation qualities of floors and partitions, as well as measures of achieving sound insulation.

The rational specification of illumination standards is very important to improving the labor productivity and the quality of products, and to insuring the visual health of the broad masses of the people. Everyone agreed that the specification of various types of the lighting standards should be aimed primarily at preserving visual health. With regard to research in this area, there should be increased cooperation between medical science workers, labor protection departments, and workers in architectural physics.

With regard to the heat insulation and cooling problems in the southern areas, concerned units have carried out a great deal of experiment and investigation over the past few years. At the conference, they suggested a great many effective measures to obtain shade, heat insulation in walls, and natural ventilation. The conference also carried out an exchange of ideas on the future development of architectural physics, and the problem of how to aid agriculture.

CHINESE ARCHITECTS ARRIVE IN HAVANA -- Peiping, Kuang-ming Jih-pao,
30 Jan 63, p 3

A delegation of Chinese architects, headed by Yang T'ing-pao (2799/1694/1405), arrived in Havana by plane on 28 January. The delegation is visiting Cuba to participate in the Cuban National Congress of Architects, at the invitation of the Cuban Association of Architects. The delegation was welcomed at the airport by various leaders of the Cuban Association of Architects.

EARTH SCIENCES

STUDY ON NEW SILICATE MINERAL -- Peiping, Scientia Sinica, Vol 12,
No 1, Jan 63, pp 101-119

[The following is a resume of the Russian-language article, "Crystal Structure of Baotite," written by P'eng Chih-chung (1756/1807/1813) and Chang Kuang-jung (1728/0342/2837), both affiliated with Peiping Geological college. The article was read at a scientific conference held at this college on 25 April 1961.]

The crystal structure of baotite, a new silicate mineral containing titanium and niobium, was established on the basis of the minimum function of several Patterson values $P(u,v)$. The crystallochemical formula $Ba_4(Ti, Nb, Fe)_8O_{16}[Si_4O_{12}/Cl]$ and the experimental formula $Ba(Ti, Nb)_2SiO_7$ were derived. Two types of new structural elements were discovered the tetragonal-ring prism of titanium-oxygen octahedron $[Ti_4O_{12}]^{8-}$.

According to Ye. I. Semenov, baotite is a product of hydrothermal processes, and has the following crystal, physical, and chemical properties: uniaxial crystal, optics positive; $N_g = 2.16$, $N_p = 1.94$; $N_g - N_p = 0.22$; pleochroism strong. N_g has a black-brown color; N_p is brownish to colorless; absorption formula: $N_g > N_p$. Chemical analysis of the baotite crystal, as made by T. A. Kabindonovaya, is set forth in Table 1.

Main problem in structural analysis concerns the distribution of atoms in the crystal and laws regulating the combination of these atoms. Results of this analysis indicate that the properties more closely connected with the crystal structure are those manifested in anisotropy, e.g., cleavage, optical orientation, birefringence, pleochroism, the absorption formula, morphological characteristics, etc.

The chemical composition of baotite is $BaTi_2SiO_7$. Whereas the coordinate form of titanium and silicon was established, that of barium was undetermined. Thus, the distribution of oxygen anions depends primarily on the distribution of Ti and Si. Since the number of Ti atoms is larger than that of Si, the Ti cation must be considered as the center in explaining the structure of baotite, particularly in the distribution of the O^{2-} atoms.

The authors make their selection of coordinates and application of the space groups, then proceed with the Patterson synthesis. The Patterson function for baotite $P(u,v)$ obtained on the magnitude F_{hko}^2 is shown in Figure 2. Figure 3 demonstrates the relation between the atomic coordinates and the Patterson peaks.

In order to obtain more positions for the atoms, the authors applied the folding method proposed by M. J. Buerger and B. K. Weinstein. They established that, in distributing the oxygen atoms in baotite, the Ti atom must be considered first, then the Si, and finally, the Ba, since the titanium-oxygen octahedron is the main part of the structure. Figure 7 demonstrates the shift of oxygen ions surrounding the titanium ions. Thus, the authors demonstrate that the Ti-O octahedra in baotite are bonded in the form of tetragonal ring prisms, whose composition is $Ti_4O_{12}/8n^-$.

Chlorine ions are introduced in the lattice, since the chemical analysis in Table 1 notes up to 2.01 percent of chlorine content in baotite.

After determining the x,y, and z coordinates of all the atoms in the baotite structure, the authors proceed to verify the proposed structure. The functions of the distribution of electron density (x,y) were computed on the basis of this model. The results completely corroborate the accuracy of the proposed structure. Credit is given to N. V. Belov for the nomography which aided in computing the structural factor. The tested functions of the distribution of electron density (x,y) and the corresponding projection of the structure are shown in Figure 8. The baotite cell contains 180 atoms. The parameter which determines the position of the atoms is 33.

The structure of baotite is shown in Figures 9 and 10. The method of bonding of the silicon-oxygen tetrahedra in the tetragonal ring is illustrated in Figure 12.

In relating the properties of baotite to its structure, the authors make some preliminary conclusions concerning certain questions relating to the crystallochemistry and mineralogy of Ti and Nb silicates. Further investigation must be made on the specific distribution of (Nb, Fe) and Ti in the tetragonal-ring prism.

The paper concludes with types of titano-oxygen groupings and of silicon-oxygen radicals.

NEW BERYLLIUM MINERAL FOUND AND ANALYZED -- Peiping, Ti-chih Hsueh-pao, Vol. 42, No 3, Sep 62, pp 259-274

A new beryllium mineral, gugiaite, was discovered by a prospecting team organized by Ts'ao Jung-lung (2580/2837/7893) and the Ministry of Metallurgical Industry in 1959 near the village of Ku-chia (7357/1367) [Anhwei Province?] between layers of alkaline orthoclase and Cambrian limestone.

[The following is an English abstract appearing in an article, "Gugiaite, $\text{Ca}_2\text{BeSi}_2\text{O}_7$, a New Beryllium Mineral Belonging to the Melilite Group," by P'eng Ch'i-jui (1756/3825/3843), Ts'ao Jung-lung (2580/2837/7893), Tsou Tsu-jung (6760/4371/2837), Chang Lan-chuan (1728/5663/1227), Yin Shu-sen (1438/2885/2773), and Ting K'uei-shou (002/1145/7445). The authors acknowledge the assistance of Luo Chin-ti (6753/6855/1717) and Cheng Chih-szu (6774/1807/1835) in the determination of physical and optical properties and of Ku Hsiung-fei (7357/7160/7378) and Szu-men-lu-lu in the crystallographic work.]

Gugiaite, $\text{Ca}_2\text{BeSi}_2\text{O}_7$, a new beryllium silicate, was found in tactite in contact with an alkaline syenite with melanite, orthoclase, idocrase, aegirine, sphene, apatite, and prehnite. It occurs as clear tetragonal tablets, mostly 2-3 mm across and 0.3-0.5 mm thick, in small cavities in the tactite and also enclosed in melanite.

Gugiaite is colorless and transparent with a vitreous luster. It has hardness about 5; its specific gravity is 3.0336 ± 0.00 (measured), 3.03 (calculated from X-ray data), and 3.0628 (calculated from $(n - 1)/d = K$). Cleavages are: $b\{010\}$ perfect, $c\{001\}$ distinct and $m\{110\}$ poor. Optically, gugiaite is uniaxial positive, and the indices of refraction are $\epsilon = 1.672$ and $\omega = 1.664$ (both ± 0.001), $\Delta = 0.008$; the mean index n is 1.6667 (measured), and 1.6594 (calculated).

Crystal forms present are: $c\{001\}$, $e\{111\}$, and rarely $b\{010\}$. The axial ratio calculated from the goniometric data is: $a:c = 1: 0.6843$, and $p_0:r_0 = 0.6843:1$. X-ray studies by the Weissenberg method show gugiaite to be tetragonal; space group either $D_{2d}^{10} - P4_22$; cell constants $a_0 = 7.48 \pm 0.02 \text{ \AA}$, $c_0 = 5.04 \pm 0.003 \text{ \AA}$, $a_0:c_0 = 1: 0.6743$; cell volume $282.21 \text{ \AA}^3$; cell contents: $2(\text{Ca}_2\text{BeSi}_2\text{O}_7)$. The ten strongest lines of the X-ray powder pattern of gugiaite are: 2.763(10), 1.707(7), 5.25 (4), 2.945(4), 2.358(4), 2.313(4), 2.207(4), 1.989(4), 1.694(4), (1).

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

Two chemical analyses gave about the same results, one of which showed: SiO_2 44.90, Al_2O_3 2.17, Fe_2O_3 0.11, MnO 0.07, MgO 0.38, CaO 40.09, BeO 9.49, Na_2O 0.72, K_2O 0.20, H_2O^+ 0.90, H_2O^- 0.36, F 0.25, Cl 0.18, P_2O_5 0.08, TiO_2 Tr., volatile matter 0.04; total 99.94 per cent. The chemical formula derived from the analyses is very close to $\text{Ca}_2\text{BeSi}_3\text{O}_{11}$, with only minor ionic substitutions of $(\text{Na}^+, \text{K}^+)$ for Ca^{2+} ; $(\text{Mg}^{2+}, \text{Mn}^{2+}, \text{Fe}^{3+})$ for Be^{2+} ; Al^{3+} for Si^{4+} , and $(\text{F}^-, \text{Cl}^-)$ for O^{2-} .

Since gugiaite has a chemical formula and crystallographic data remarkably similar to those of melilites, it must have the same structure as that of this mineral group and may be classified as one of its members. Detailed crystal structure studies of gugiaite are now in progress. But gugiaite is distinctly different from the three beryllium minerals, meliphanite, leucophanite and aminoffite, which are also similar to the melilites in many respects.

Some of the mineralogical and geochemical aspects are discussed of the beryllium minerals found in tactites and pegmatites associated with alkaline and granitic rocks. Gugiaite is the first beryllium mineral ever found in the skarn zones at contacts between limestones and alkaline rocks.

The new mineral is named after the small village of Gugia where it was found.

RESEARCH ON MOISTURE CONTENT OF THE SOIL -- Peiping, Juang-ming Jih-Pao, 29 Jan 63, p 2

The recently published Pei-ching Shih-fan Ta-hsueh Hsueh-pao--Tzu-jan K'o-hsueh (~~Northeast~~ University Journal -- Natural Sciences), No 2, 1962, has an article by Prof Liu P'ei-t'ung (0491 1014 2717) of the Geography Department, entitled "Soil Moisture Conditions on the Plain Near Peiping". On the basis of his observations at Ta-tao Shan, Huang-ts'un, Pei-t'ai- p'ing-chuang, and other places near Peiping during 1961, the author states that there are large variations in the soil moisture conditions in the plain near Peiping because of differences in terrain conditions and other features.

On the basis of the circumstances of soil moisture sources, capacity, and activity under different terrain conditions, the author divides soil moisture circumstances in this area into three basic classes: leaching, percolation, and periodic soaking. A relatively detailed analysis and comparison of the observations was made to support the evaluation of these three types.

The article discusses the concrete problem of how to regulate soil moisture content. The author states that since the course of changes in soil moisture content must necessarily bring about physical, chemical, and biological reactions, it is extremely important to the development of agricultural production to be familiar with the rules of the effects of these changes on the development of the soil and the supply of plant nutrients and water, and to adopt agricultural measures which are appropriate to the time and the place in accordance with these rules. The author emphasized that when undertaking measures to regulate soil moisture content, it is necessary to have a view of the over-all situation, and to set up comprehensive measures which will give equal consideration to "prevention of drought and preservation of soil moisture" and "drainage and prevention of salination". Finally, the author stated that the plain in the vicinity of Peiping has level terrain with uniform fertility, warm temperatures, and plentiful rainfall, and is basically well suited to agricultural production. It is only necessary to achieve a scientific understanding of the rules of changes in seasonal and area distribution of soil moisture content and to take steps to achieve a balance in these distributions, and it will be possible to further advance the development of agricultural production.

GROUP INVESTIGATES UNDERGROUND WATER -- Peiping, Kuang-ming Jih-pao
1 Feb 63, p 2

For the past several years, Assistant Prof Chang Wei-chen (1728 3588 2830) and lecturer Li Wen-yuan (2621 2429 3220) of the Department of Agricultural Field Hydraulic Engineering at Wu-han Hydraulic Engineering College have been carrying out field observations and experiments combined with theoretical discussions of the problem of underground water in plain areas which are easily subject to drought and water logging. They have separately written articles titled "Calculation Method for Underground Water Drainage Ditches Under Conditions of Evaporation" and "The Problem of Underground Soaking Irrigation of Dry Crops in Plain Areas Subject to Drought and Water Logging." These articles have been published in issue No. 1, 1963, of that college's journal.

In his article, Chang Wei-chen derives a drainage ditch calculation formula for finding the underground water level, drainage flow and speed of drop in the underground water level on the basis of the approximate linear relationship between evaporation and underground water level. The physical concept of this formula is clear, and the structure is simple. It is fairly easily to use when applied with the aid of a curved line graph. Li Wen-yuan has presented a theoretical discussion of how to utilize changes in the river channel water level and underground water level through the capillary action of the soil to achieve balanced soil moisture and carry out underground irrigation, on the basis of the depth of root system activity of agricultural crops, the soil moisture

requirements of agricultural crops, and the relationship between soil moisture and the underground water level. He has stated that under continuous soaking irrigation, balanced moistening of the soil requires a specific river network water level, underground water level, and an appropriate differential between them. Under intermittent soaking irrigation, and under conditions permitted by the regular growth of the crops, a relatively high river network water level and underground water level should be maintained.

NANKING UNIVERSITY STUDIES GEOGRAPHY OF YUNNAN PROVINCE -- Peiping, Kuang-ming Jih-pao, 29 Jan 63, p 2

The forthcoming Nan-ching Ta-hsueh Hsueh-pao -- Ti-li (Nanking University Journal -- Geography) will contain three articles concerning investigation and research on the geography of Yunnan Province. Since 1957, the Geography Department of Nanking University has been taking part in a comprehensive examination of tropical biology in Yunnan Province. In 5 years of field work, it has collected large amounts of data, and the past year has been spent in summarizing this. These articles represent a part of the results of this summary.

The article "Problems in the Utilization of Tropical and Subtropical Mountainous Areas in Southern Yunnan" presents a detailed study of the particularly complex natural and socio-economic conditions in southern Yunnan, and discusses the problems of rational utilization of various types of soil in the mountainous areas, as well as the perpendicular arrangement which is so important to agricultural production in these areas.

The article "The Natural Divisions of Southern Yunnan" discusses the various problems of the natural divisions of the mountainous area, as well as the problems of developing tropical and subtropical resources in the area. The article "Several Special Features of the Development of Karst Terrain in Southeastern Yunnan Province" is a study of the Karst terrain of the plateau and how hydraulic engineering construction can be employed there, based on a theoretical generalization from comprehensive actual data.

CHEMISTRY AND CHEMICAL TECHNOLOGY

STRUCTURE OF A CORTISONE INTERMEDIATE PRODUCT STUDIED -- Shanghai, 1960 Shang-hai Shih K6-hsueh Chi-shu lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh (Collected Shanghai Scientific and Technical Papers of 1960: Mathematics, Chemistry, Aug 62, pp 128-135

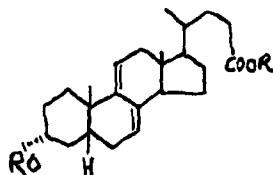
[The following is a Chinese-language abstract appearing in an article "The Structure of delta 7,9-Unsaturated Cholic Acid Reaction Products," by Huang Ming-lung (7806 7686 7893) and Ts'ai Tsu-yun (5591 4371 1926), both of the Institute of Organic Chemistry, Chinese Academy of Sciences.]

The structures of II_C and its hydrides, XII_C and $XIII_C$ produced by the transformation of 3a-acetoxy-delta 7,9-lithocholadienic acid methyl ester (I_C) by treating it with acid were verified after a series of reactions. The C_9 -H of XII_C is an "a" configuration. The molecular rotations of C_9 -H and its corresponding saturated compounds are compared; the value of the difference is positive. It was further found that $XIII_C$ may shift its double bonds to form XII_C .

Key to abstract:

I_C : 3a-acetoxy- $\Delta^{7,9}$ -lithocholadienic acid methyl ester

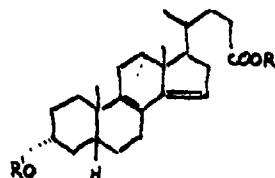
(1)



$R = CH_3$ and $R' = Ac$ in all structural formulas.

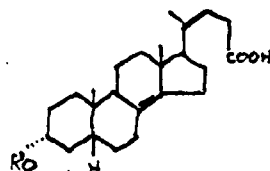
II₀: 3a-acetoxy- $\Delta^{8,14}$ -choladienic acid methyl ester

(2)



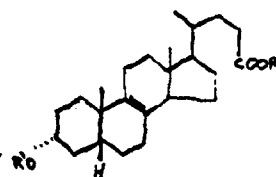
XII₀: 3a-acetoxy- $\Delta^{8(11)}$ -cholenic acid methyl ester

(3)



XIII₀: 3a-acetoxy- $\Delta^{8(9)}$ -cholenic acid methyl ester

(4)



NEW ROUTE FOR SYNTHESIS OF INSULIN -- Shanghai, 1960 Shang-hai-shih
K'o-hsueh Chi-shu lun-wen Suan-chi-- Sheng-wu-hsueh (Collected Shanghai
Scientific and Technical Papers of 1960 -- Biology), Aug 62, pp II 9-19

[The following is an abstract of a paper, entitled,
"Reconstitution of Insulin From Its A and B Chains," by
Tu Yu-ts'ang (2629 7183 5547), Chang Yu-shang (1728 0645
1424), Lu Tzu-hsien (7627 1311 6343) Hsu Ken-chun (6079
2704 0193), and Tsou Ch'eng-lu (6760 2110 7627), Institute
of Biochemistry, Chinese Academy of Sciences.]

The article presents the details of experiments which, according
to the authors, led to the discovery of a practical route for the
synthesis of physiologically active insulin.

As reported, various methods were employed to break the insulin
molecule into A and B chains of different forms, purify them, reduce
them, and then oxidize them again either separately or in combination
with each other. Thereaction products were assayed for physiological
activity by the white mice convulsion test described in the British
Pharmacopoeia, 1953 and also by the test for hypoglycemic effect in
rabbits as outlined in the Chinese Pharmacopoeia, Commercial Press,
1953. A summary of significant results and other information
follows:

Natural insulin was treated with sodium sulfite or sodium tetrathio-
sulfate whereupon the --S--S-- linkages (A and B chains, respectively)
in the molecule were cleft into S--sulfonate groups. These were purified
by ionexchange process and electrophoretic separation.

Assayed for physiological activity by the white mice convulsion
test, the purified S-sulfonate A and B chains were both inactive.
Activity was not restored to either chain when it was treated with
thioglycolic acid to reduce the S-- sulfonate group to a hydrosulfide
group and subsequently air-oxidized (pH 8.5). However, whenever the
hydrosulfides of the A and B chains were mixed and airoxidized to-
gether under the same conditions as were the S-- sulfonates, a
physiologically active (18.4 international units mg) substance was ob-
tained. Its potency was equal to 5-10% that of the original
natural insulin; its hypoglycemic effect in rabbits, identical.

Physiologically active substances were also obtained when reduced
A and B chains were incubated together with S--sulfonate forms of the
B and A chains, respectively.

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

Purification of the reactivated air-oxidation products yielded crystals with specific activity of about 18.4 international units per milligram. The crystals were like the crystalline insulin manufactured by Boots Pure Drug Company, England (24.35 international units mg) in crystalline form, hypoglycemic effect, electrophoretic properties, and rates of migration in a three-solvent system. Under the action of pepsin, the amino acid sequence of the resynthesized crystals was basically the same as that of standard crystalline insulin.

Benzyl derivatives of insulin were also prepared by different methods, subjected to reduction and subsequent air-oxidation, and then tested for reactivation. All we found to be reactivated in degrees varying with the method by which the derivative was obtained: 5-10% in benzyl derivatives prepared with thioglycolic acid, a lower percentage range in those prepared with sodium borohydride, and only 1-2% in those obtained from a metallic sodium-liquid ammonia system. (Further study on the control of the last mentioned method is indicated.)

The above data reportedly indicate that it would be possible to synthesize active insulin by recombining artificially prepared A and B chains.

The authors used sulfonic ion-exchange resins manufactured in China, specifically X-3 or Dowex 50, and X-2. Notes on other materials include the following: thioglycolic acid and sodium sulfite were products of E. Merck; sodium tetrathiosulfate was prepared after the method of Gilman et al in Amer. J. Physiol. 146 (1945), 348-357; dialyser sacks were Visking 18 82; powdered cellulose, product of Carl Schleicher and Schull; and Whatman No 3 MM filter paper.

Thanks are extended to certain organizations and individuals for assistance in the present work: the Research Institute of the Shanghai Medical Industry and the Institute of Physiology of the Chinese Academy of Sciences for help in testing the physiological activity of insulin; Ch'en P'ei-hsun (7115 1014 8133), Shu Fang-ying (3007 6721 5391), Ting Yu-ta (0020 0645 0960), and Ting Kuo-liang (0002 0948 5328) for assuming responsibility for the major part of the physiological activity tests; Pan Chia-hsiu (3382 1367 4423) and Fang Min-pen (2455 3046 2609) for analyzing amino acid sequence pictures; Ts'ao T'ien-ch'in (2580 1131 2953), Shen Chao-wen (3088 2507 2429), Niu Ching-i (6873 4842 5030), and Hsu Ching-hua (1776 0079 5478) for invaluable suggestions.

BENZENE PURIFICATION IMPROVED -- Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, pp 46-48

[The following is an abstract of an article, "The Use of Absorbative Columns to Remove Micro impurities in Benzene," by Hsieh Hung-ch'uan (6200/3163/3123), Tai Chung-yuan (2071/0012/ 0337), and Meng Fan-ying (1322/4907/1758).]

In this paper, the authors address themselves to the problem of determining whether or not the polar material aluminum oxide is able to remove microscopic quantities of moisture, thioalcohols and other polar materials from benzene. At the same time, the authors sought a molecular sieve with appropriate sized apertures for the separation of benzene and carbon bisulfide. This paper describes the use of a 5 A molecular sieve column and an aluminum oxide column in the separation of micro-quantities of several important impurities from benzene.

The results obtained indicate that the 5 A molecular sieve is able to effectively remove microquantities of carbon bisulfide, thioalcohols, and moisture, but is unable to remove thiophene; the aluminum oxide effectively removed moisture and thioalcohol but was unable to remove carbon bisulfide or thiophene.

PREPARATION OF STANDARD ACID-BASIC SOLUTIONS IMPROVED -- Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 44-46

[The following is an abstract of an article, "The Use of Ion-Exchange Resins to Prepare Standard Acid-Basic Solution," by Chu Hsiang (2612/5046).]

This paper explains the use of ion-exchange resins in the preparation of standard acid-basic solutions. The definite amount of solid salts obtained after ion-exchange was used as the fundamental material in the preparation of a standard acid-basic solution of known concentration. It was found that the purity of the salts is directly dependent upon the strength of the ion-exchange reaction. The amount of material exchanged by the resins can be increased by lengthening the ion-exchange column or by using the columns in series; in this manner, higher concentrations of standard acid-basic solutions can be obtained.

The author feel that this method of preparing standard acid-basic solutions is more convenient than other methods, thus facilitating experimental work in the laboratory.

THIOCYANATE-TRIVALENT BISMUTH COMPLEXING REACTIONS STUDIED -- Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh (Collected Shanghai Scientific and Technical Papers of 1960 --Mathematics and Chemistry,) Aug 62, pp 180-188

[The following is a Chinese-language abstract appearing in an article, "The Thiocyanate Ion and Trivalent Bismuth Complexing Reaction-Cation Exchange Method," by Yen Chih-hsien (0917/1807/1720) and Ku Mao-huai (7357/2021/2849), both of Fu-tan University.]

Not only has there been little experimental work on the thiocyanate ion and trivalent bismuth complexing reaction, but the results have been obtained under non uniform experimental conditions; moreover, the characteristic forms of the staged complex ions in solution have been neglected. (The authors' studies were carried out using the cation exchange method. The resin employed was sodium-type Zeolite 225; sodium perchlorate was used to maintain the ionic concentration; the sodium ions in solution were kept at the concentration of 0.50 M. Temperature effects were negligible. An equilibrium between the resin and the solution is reached after a short time; the authors waited 6 hours before carrying out their analysis. Ethylenediaminetetraacetic acid (EDTA) was used in the complex titration of Bi $3+$ ion concentration (pyrocatechol propyl was used as an indicator). Volhard's method was used in the indirect determination of SCN-ion concentration; the experiment was quite straightforward in nature.

The results were as follows: when the thiocyanate ion concentration is below 0.5M, the three complex compounds, Bi (SCN) $^{+2}$, Bi(SCN) $^{+2}$, and Bi(SCN) $_3$, in the solution had stability constants of 15 ± 1.5 , 28 ± 4.2 , and 300 ± 60 , respectively. The calculation of the percentages of each of the components in the solution revealed that Bi(SCN) $_3$ was the most common component when there was a high concentration of thiocyanate ions.

STUDIES MADE ON PROPERTIES OF POLYETHYLENE -- Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 50-51

[The following is an abstract of an article entitled "The Vitrification of Polyethylenes," by Ch'i Tsung-neng (3344/1350/5174), Wei Nan-i (7614/2809/0308), and Lo Po-liang (5012/0130/5328). The paper was received for publication 13 April 1962.]

The authors used kinetic methods to determine the elastic modulus and the internal friction -- temperature relationship of polyethylene formed by the setting of 30 percent butene diacidic anhydride. It was

found that the results obtained by kinetic analysis did not coincide with those obtained through static analysis (the plotting of dependence of mechanical properties upon temperature curves).

The authors obtained the following results: (1) the curves describing the dependence of the modulus of elasticity upon temperature were in full agreement with both the general curves and the curves of microcross-linked high polymers. The modulus fell to a definite equilibrium immediately after the vitrification and showed no tendency to rise thereafter. (2) The vitrification temperature, determined from the internal friction peak, differed considerably from the vitrification temperature as determined from the mechanical property-temperature curves.

IMPROVEMENTS MADE IN THE DETERMINATION OF ZIRCONIUM AND HAFNIUM --
Peiping, Hua-Hsueh T'ung-pao, No 8, Aug 62, pp 55-57

[The following is an abstract of an article entitled "The Indirect Determination of Zirconium and Hafnium," by Li Huang (2621/2515).]

The separation and quantitative analysis of zirconium (Zr) and hafnium (Hf) has been approached in a number of different ways. Most of these methods however, are primarily suited to situations when the ratio of Zr-to Hf is either very large or very small; these methods also involve limitations as to techniques and equipment. Although indirect chemical analysis has received a great deal of attention, the majority of these methods are complex in technique, time-consuming, and inaccurate.

This paper describes the indirect determination of Hf and Zr using the following procedure: (1) A highly effective Zr-Hf precipitating agent was used; the precipitates are then separated according to their different properties and oxides are produced by roasting. (2) Measured amounts of the oxides are then dissolved, reacted with EDTA, and the content of ZrO_2 is then calculated. (3) The ZR-HF content can then be calculated from the difference in the results of the weighing and the content analysis described in (2).

Almond oil or o-phthalic acid was used in the weighing process; ferric chloride was used in the titration.

The results were as follows: In one sample tested, the same percentages of HfO_2 and ZrO_2 were obtained, 51 and 49 percent respectively, by using the authors' method and the selenite method; spectral analysis yielded 54 and 46 percent respectively. Tests, using the authors' method, on one sample, yielded the following

percentages for ZrO_2 : 62.13, 62.25, 62.41; for HfO_2 : 35.77, 35.57, and 35.41. For a second sample; ZrO_2 : 70.15, 71.50, 70.46; for HfO_2 : 27.59, 26.82, and 27.28.

THE USE OF TITRATION TO VERIFY GAS CHROMATOGRAPHIC ANALYSIS -- Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, pp 52-54

[The following is an abstract of an article, "Content Titration as a Check on Gas Chromatography," by Liang Yung-lin (2733/3057/2651).]

This paper describes the use of standard acid or basic solutions in a 5 milliliter microtitration tube to verify the results of gas chromatography by recording the loss sustained by the standard solutions at 20 or 30 second intervals. Excellent results were obtained. The paper describes the equipment used to carry out separation of volatile aliphatic amine samples.

MATHEMATICAL AND PHYSICAL SCIENCES

QUASI-COMPOSITE MEROMORPHIC PARAMETERS DISCUSSED -- Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh (Collected Shanghai Scientific and Technical Papers of 1960: Mathematics, Chemistry), Aug 62, pp 66-69

[The following is an abstract appearing, in Chinese, in an article, "A Description of Quasi-Composite Meromorphic Parameters and Their Applications," by Fan Li-li (5400/5461/5461) and Hsia Tao-hsing (1115/6670/5887), both of Fu-tan University.]

This paper is an introductory description of the parameters involved in the study of extreme values in quasi-composite meromorphic theory. The method employed is to use the solution of the appropriate simplified initial conditions of one-parameter differential equations as a quasi-composite meromorphic description. The coefficients of the differential equations can then be used to compute the quasi-composite meromorphic values. This paper examines the problem for the cases of the circle, the half plane, and the torus. The solution of the parameter descriptions used in this paper are superior to the results of Belinskii, Mori, Beurling, and Ahlfors as regards the extreme values for quasi-composite meromorphic deviation, modulus ratios, and boundary correspondences.

[A footnote to the article adds that parts of this paper have appeared in K'o-hsueh Chi-lu (Science Record) No 3, 1959, pages 323-329 and No 4, 1960, pages 329-333, Fu-tan Hsueh-pao (Fu-tan University Journal) No 2, 1959, pages 26-24 and in Chung-kuo K'o-hsueh.]

PROPERTIES OF ISOTROPIC GROUPS EXAMINED -- Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh (Collected Shanghai Scientific and Technical Papers of 1960: Mathematics, Chemistry), Aug 62, pp 100-109

[The following is a translation of an abstract appearing in Chinese in the article "The Reducability of Lie-Cartan Transformation Groups and Their Applications in Differential Geometry," by Hu-Ho-sheng (5170/0735/3932), Fu-tan University.]

Transformation groups defined by partial differential equations in the analytic function region are called Lie-Cartan quasi-groups. All those transformation quasi-groups which, by invariant transformation at a point, induce linear transformation groups in the space tangent to that point, are called isotropic groups. This paper examines the relationships between the properties of isotropic groups and the properties of transformation quasi-groups, with the following results: (1) If G is a transitive Lie-Cartan transformation quasi-group, its isotropic group G , is reducible (if it contains an invariant plane) and amplification is included; thus, G is composite and contains one composite manifold. (2) If G , is completely reducible and includes amplification, then group G has two complementary composite manifolds. When G , only includes amplification, group G must be the manifold.

Application of these properties in differential geometry yields the following results: (1) If the Riemann space Z_m permits transitive conformal transformation groups, isotropic groups are reducible and contain amplification; thus, the space is conformably divisible, and has a conformable correspondence to a product space. Only when the isotropic group includes amplification is Z_m conformably flat. (2) If the octuple F_{2n} admits conformable transformation groups, its isotropic groups are reducible; the invariant planes are nonisotropic and include amplification. In that case the space is conformably divisible and it conformably corresponds to a "octuple product space." Only when the isotropic groups includes amplification does F_{2n} conform to octuple space.

INFINITE CONTINUOUS GROUPS EXAMINED -- Peiping, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hwa-hsueh (Collected Shanghai Scientific and Technical Papers of 1960: Mathematics, Chemistry), Aug 62, pp 11-27

[The following is a translation of a Chinese-language abstract appearing in the article "On An Order of Irreducible Isotropic Groups of Infinite Continuous Quasi-Groups," by Ku Chao-hao (6253/6389/6275) of Fu-tan University.]

This paper examines analytic transformation quasi-groups, otherwise called infinite continuous groups, defined by partial differential equations and dependent upon indefinite functions. Isotropic groups are those quasi-groups that induce linear transformation groups in space tangent to a point by invariant transformation. The key to a determining whether isotropic groups are irreducible analytic transformation quasi-groups is in deciding whether they can be considered to be linear groups of isotropic groups. E. Cartan has set forth a theoretical explanation using semipure Lie algebra (complex region), concluding that all isotropic groups that are infinite continuous groups are irreducible (complex) linear groups. This paper uses the real form of simple Lie algebra, the various relationships between real linear groups and complex linear groups, and the results of E. Cartan to show that all isotropic groups that can be considered infinite continuous groups are irreducible linear groups.

The author acknowledges the guidance of Prof P. K. Rashevskii as well as the assistance of Professors S. P. Finikov and G. F. Iaptev, and Assistant Professors A. M. Vasilev and M. B. Vasileva, all of Moscow State University.

ANTIMONY ELECTRODE CAPACITANCE DISCUSSED -- Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh (Collected Shanghai Scientific and Technical Papers of 1960: Mathematics, Chemistry), Aug 62, pp 189-194

[The following is a Chinese-language abstract appearing in an article, "The Capacitance and Surface Properties of Antimony Electrodes," by Wu Hao-ch'ing (0702/3185/7230), Chou Wei-fang (0719/0251/5302), and Lin Chih-ch'eng (2651/1807/2052), all of Fu-tan University.]

Capacitance-potential curves were plotted for antimony electrodes in 0.101 N saline, 0.0101 N saline, 0.005 N saline, 0.113 N potassium chloride, and 0.0113 N potassium chloride solutions using an AC bridge. The significance of the maxima on these capacitance-potential curves is discussed from the point of view of thermodynamic potentials. The possible zero potential of the antimony in saline solution is -0.19 volts.

MISCELLANEOUS

ACADEMY OF SCIENCES TRAINS PERSONNEL -- Peiping, Kuang-ming Jih-pao,
29 Jan 63, Page 2

Several excellent scientists have appeared among the research [graduate] students trained by the Chinese Academy of Sciences over the past several years.

Not long ago, several prominent scientists went to the Institute of Mathematics, Chinese Academy of Sciences, to hear the reading of a graduate thesis on the Quantum Field Theory by research student Tai Yuan-pen (2071/0337/2609). After examining the young research student on his thesis, the scientists felt that he had made several new creative discoveries in a field of study which has only existed since the 1930's, and which is still the object of research by scientists in many countries. They also felt that he is completely prepared to carry on independent research in this field.

There are many research students like Tai Yuan-pen in the Chinese Academy of Sciences. Since 1955, when the State Council decided to establish a research system, the Chinese Academy of Sciences has trained 99 research students. Most of these have acquired a firm theoretical foundation, and are able to carry out investigations in their own fields. Moreover, they are able to use two or more foreign languages fluently, and some are even able to use four or five foreign languages in reading specialized publications. They have brought many new theoretical and actual ideas to their work in the natural sciences. Research student Ting Ching-ch'un (0002/2529/5028), who carries on research in chromatography at the Institute of Physical Chemistry, used electronic computer methods for the first time to show the rules of behavior of a material in a chromatographic column, and from this generalized and supplemented several existing theories of chromatography. In his graduate thesis, Tsou Kang (6760/1481), a research student at the Institute of Materia Medica, suggested a new idea on the physiological structure of the analgesic effect of morphine. He employed injections into the cranial cavity, injections into the brain, and other methods which had never before been used in China. Research student Wang Ya-hui (3769/0068/6540), who has been carrying on research on the origins of life, denied, in his graduate thesis, an important point which had previously been affirmed by workers in this field. Through repeated experiments, he proved that the nerves are not all-important to regeneration. He found that even a nerveless lizard embryo was able to regenerate its front legs after they had been cut off. The form and process of the regeneration was the same whether the embryo had nerves or not.

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

Many old scientists are extremely enthusaistic about training the young research students. Mathematician Hsiung Ch'ing-lai (3574/1987/0171) has trained a great many scientists over the past 40 years. He has recently asked to be allowed to train several more research students. Research student Chang Chih-yu (1828/5347/3768) (f) is receiving guidance from prominent taxonomist Ch'in Jen-ch'ang (4440/ 0088/2490). At present there are more than 400 research students studying various specialties.

STATE COUNCIL APPOINTMENTS AND DISMISSALS -- Peiping, Kuang-ming Jih-pao, 18 Jan 63, p 2

On 22 December 1962, the 125th session of the State Council approved the following appointments and dismissals:

Sun Hsi-ch'i (1327/6007/1477), appointed president of Harbin College of Architectural Engineering (Ha-erh-pin Chien-chu Kung-ch'eng Hsueh-yuan; 0761/1422/3453/1696/4591/1562/4453/1331/7108), and Li Ping-chum (2621/4426/6874), appointed vice-president of the college.

Li Hsin (2621/2450), Wang Lung-fu (3769/7893/3940), and Wang T'ao (3769/3447), appointed vice-presidents of the Peking Construction Industry College (Pei-ching Chien-chu Kung-yeh Hsueh-yuan; 0554/0079/1696/4591/1562/2814/1331/7108).

Chiang P'i-yun (5592/2748/0061), and Hsu Wen (1776/2429), were appointed vice-presidents of T'ung-chi University (T'ung-chi Ta-hsueh; 0681/3444/1129/1331).

Chang Hsiu-chi (1728/0208/1569) and Sai Feng (1049/7364), relieved of their duties as vice-presidents of Peking Construction Industry College.

SHANGHAI HOLDS CONFERENCES ON INDUSTRIAL AND AGRICULTURAL SCIENCES -- Peking, Jen-min Jih-pao, 30 Jan 63, p 1

The agricultural, industrial, and scientific leading departments of Shanghai municipality recently called separate discussion conferences on industrial and agricultural science and technology to discuss means by which science and technology may serve the revolution in agricultural technology in the suburban areas and strengthen the technical foundation of Shanghai's industrial production. The participants in the conferences consisted of specialists in industrial and agricultural science and technology, model agricultural workers, and the leading cadres of concerned departments.

In the discussions of how science and technology can serve agricultural production, all agreed that at present it is first necessary to summarize the production experience of the masses and promote its application as it suits the area, and to establish the required system of technical management. With regard to existing research results and advanced domestic and foreign experience in increasing production, there should be experiments, testing, and gradual demonstration promotions. At the same time, there should be active development of research work directed against the present key problems of production,

there should be experiments, testing, and gradual demonstration promotions. At the same time, there should be active development of research work directed against the present key problems of production, such as selection of new strains, prevention of disease and insect damage, improvement of soil, mechanization of wet field cultivation, and rational utilization of fodder for domestic animals. Attention must also be given to improvement of theoretical research.

How to carry out a gradual revolution in agricultural technology in the suburban areas of Shanghai was another important topic of discussion. Everyone agreed that since the suburbs are heavily populated, and have a limited area, and yet they bear the responsibility of producing grain, cotton, oil, and subsidiary food stuffs for the metropolitan area, the most immediate task is to raise the unit area production as well as improve the labor productivity rate, and coordinate agriculture and animal husbandry.

At the conference on industrial sciences and technology, specialists in the fields of metallurgy, chemical industry, electrical machinery, electronics, instruments and meters, testing and measurement, light industries, and textiles, as well as leading cadres from concerned departments, discussed the problems of strengthening key points in the technical foundation of Shanghai's industrial production. All agreed that there must be improvement in the products of materials industries, such as new types of steel, nonferrous metals, and chemical industry raw materials. At the same time, efforts must be made to develop precision processing and radio technology which are required by various fields, and to add new products for the light industries and textile industries. During the discussions, many important suggestions were made for the development of new types of metal materials, petroleum products, synthetic fibers, and new types of chemical industry materials, as well as for the development of research equipment, special processes, measuring and testing equipment, etc.

SCIENTIFIC AND TECHNOLOGICAL WORK CONFERENCE HELD IN SHANGHAI --
Peiping, Kuang-ming Jih-pao, 31 Jan 63, p 1

On the afternoon of 29 January, the Shanghai Municipal Scientific and Technological Commission convened a scientific and technological work conference to discuss the directions of scientific and technological work in Shanghai. Premier Chou En-lai and Mayor K'o Ch'ing-shih (2688/1987/2457) of Shanghai presented addresses to the conference.

Premier Chou En-lai spoke first on the importance of the modernization of science and technology to socialist construction. Mayor K'o Ch'ing-shih praised Chou En-lai's speech, and encouraged the scientists and technicians to strive for further achievement. The conference was attended by more than 600 prominent specialists, professors, young scientific workers, and responsible cadre of scientific and technical departments in 23 fields. Before the conference opened, Premier Chou En-lai and Mayor K'o Ch'ing-shih held a reception for more than 50 specialists from various fields. Among these were metallurgists Chou Jen (0719/0088) and Chou Chih-hung (0719/1807/1347), engineers Ch'eng Hsiao-kang (4453/1321/0474), Li Ken-t'ung (2621/5327/0681), and Meng Ch'ing-yuan (1322/1987/0337), pedologist Tai Hung (2071/1738), physicist Chu Wu-hua (2612/3670/5478), chemist Huang Ming-lung (7806/7686/7893), mathematician Su Fu-ch'ing (5685/2975/7230), biologists Feng Te-p'ei (7458/1795/1014) and Chang Hsiang-t'ung (3728/7449/2717), surgeon Shen K'o-fei (3088/0344/7326), prominent Doctor of Chinese medicine Ch'eng Men-hsueh (4453/7024/7185), and young research workers Ku Ch'ao-hao (6253/6389/6275) and Shih Mei-hsin (4285/5019/9515).

SHANGHAI PUBLISHED SCIENTIFIC PAPERS IN MONOGRAPHIC SERIES -- Shanghai, 1960 Shanghai, 1960 Shang-hai-shih K'o-hsueh Ch-shu Lun-wen Suan-chi (Collected Shanghai Scientific and Technical Papers of 1960 -- Mathematics Chemistry, Aug 62.

[The following information was extracted from the preface of the source cited above. The same preface appears in at least two other volumes -- Biology and Agriculture, of the monographic series.]

Eighty-nine scientific and technical papers by Chinese scientists in the Shanghai area have been selected as the best 1960 contributions from the area and published in a monographic series entitled 1960 Shanghai-shih K'o-hsueh Chi-shu Lun-wen Suan-chi (Collected Shanghai Scientific and Technical Papers of 1960.) The series consists of volumes on mathematics and chemistry, biology (11 articles), agricultural science (8 articles), medical sciences (25 articles), and engineering and technology (32 articles). Although most of the papers were written in 1960, some were unpublished works completed in 1958 and 1959.

A 69-man committee organized in July 1961 by research agencies, technical production departments, and higher schools in Shanghai was responsible for making the final selections although its decisions were based on the evaluations of more than 400 experts in the various fields of science who were engaged to review the entries submitted. The criteria for selection were: (1) a new theoretical explanation to or advance in a particular scientific field and/ or (2) an important contribution to the development of national economy.

BIOGRAPHIC INFORMATION

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

CHANG Ch'ing-hsiang (1728/1987/6763), Institute of Soils, Chinese Academy of Sciences; author of article, "Improved Elutriation of the Saline Soils of Northern Kiangsu and Its Agricultural Applications." The Author acknowledges the direction of Chu Shou-ch'an (4376/1108/3123) and Lu Ping-chang (1720/3521/4545) in the preparation of the paper and the assistance of Ts'ai Yung-yun (5591/3057/0061), Ch'en Tzu-jui (7115/1311/6904), and Ts'ui Sheng-pen (1508/4141/2609). Mukden, T'u-jiang T'ung-pao [Soil Bulletin], No 3, May 62, pp 28-37)

CHANG Hsiu-yun, Moscow Architectural Institute; author of dissertation for the scientific degree of Candidate of Architecture, "Planning and Building of Industrial Complexes for Collective Farms and State Farms in Central Regions of the USSR," in Russian. (Moscow, Vechernyaya Moskva, 15 Jun 63, p 4)

CHANG Jen-pin (1728/0088/2430); author of article, "The Development and Prospects in Microdetermination of Hydrocarbons in Organic Compounds." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 29)

CHANG Jo-hua (1728/5387/2901); author of an article, "An Introduction to Methods of Studying Solubilities in Four-Element Water-Salt Systems." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 35)

CHANG Kuang-yin, author of article, "Observation on the Dispersion Effect of the Reflection Belt in CdS Crystals," in Russian; first published in Optika i Spektroskopiya, Volume 13, No 5, May 1962, pages 701-707, (Moscow, Ietopis' Zhurnal'nykh Statey, No 2, 12 Jan 63, p 38)

CHANG Po-sheng (1728/0130/5116); author of article, "The Mosaic of the Earth's Crust." (Peiping, Ti-chih Hsueh-pao, Vol 42, No 3, Sep 62, pp 275-288)

CHAO Chih-yuan (6392/1807/5678)

CHOU Yun-li (0719/7301/7787)

YANG Pao-chien (2799/0202/0256)

CHAO Ch'eng-ku (6392/2110/0858)

All of the Institute of Materia Medica, Chinese Academy of Sciences; coauthors of article, "Idensinine [an alkaloid from the lotus seed isolated]." (Shanghai, 1960 Shanghai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh [Collected Shanghai Scientific and Technical Papers of 1960; Mathematics, Chemistry], Aug 62, pp 66-99)

CH'EN Chih-chung (7115/1013/0022); author of article, "Nonaqueous Solvent Titration." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 36-39)

CH'EN K'o-wen (7115/0344/2429)

LU Wei-o (4151/0251/1230)

Both of the Department of Soil Agrochemistry, Fukien Agricultural College; coauthors of article, "Studies of the Decomposition Rate of Calcium Cyanamide in Soil." (Mukden, T'u-jang T'ung-pao [Soil Bulletin], No 3, May 62, pp 59-65)

CH'EN Mei-hua (7115/5019/5478)

CHIANG Shang-hsin (5592/1424/0207)

Coauthors of article, "The Synthesis of Artificial Diamonds." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 39-44)

CH'EN Yung-hsun (7115/1661/0534)

TAI Tung-lin (2071/2639/2651)

Coauthors of article, "Facies of the Jurassic Sediments in the Ta-t'ung Region of Shansi Province," (Peiping, Ti-chih Hsueh-pao, Vol 42, No 3, Sep 62, pp 321-326)

CHENG Shao-lien (6774/4801/3425)

T'AO Tsung-ying (7118/1350/5391)

Both of Fu-tan University; coauthors of article, "The Calculation of Regression Coefficients for Time Series of Multidimensional Regular Stochastic Perturbations." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh [Collected Shanghai Scientific and Technological Papers of 1960: Mathematics, Chemistry], Aug 62, pp 110-127)

CHIANG Hsi-k'uei (5592/6932/5688); author of article, "The Chemistry of Carbene." (Peiping, Hua shueh T'ung-pao, No 7, Jul 62, p 1)

CH'IU Chih-chun (6726/0037/0193)

NAN I (0589/7328)

Coauthors of article, "A Review of 'Characteristics of Geotechnonic Development in Kwangtung Province'". (Peiping, Ti-chih Hsueh-pao, Vol 42, No 3, Sep 62, pp 345-351)

CHOU Ching-liang, coauthor with Z. G. Pinsker of article, "Electron-organic Investigation of the Ag-Se System in Thin Films," in Russian. (Moscow, Kristallografiya, Vol 8, No 1, Jan/Feb 63, p 143)

CHOU Hsin-ch'eng (0719/2450/2052), Mechanics Teaching and Research Section, Liaoning Communications College; author of article, "The Good Uses of Similitude Phenomena." (Peiping, K'o-hsueh Ta-chung, No 12, Dec 62, p 376)

CHOU Jung-jen (0719/2429/1798)

HUANG Wen-hui (7806/2429/1798)

Both of the Institute of Plant Physiology, Chinese Academy of Sciences; coauthors of article, "The Use of Gibberelin in Vegetable Cultivation." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 68-86)

CHU An (4555/1344); author of article, "High-Sensitivity Detectors -- An Advance in Gas Chromatography." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 21)

CHU Cheng-yuan (2612/2973/0337); author of article, "A Demonstration That the Friction of a Triangular Screw Thread is Greater Than That of a Square Thread." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, pp 229)

CHU Ho-chien (2612/7729/0256)

HUNG Ju-shui (3163/1172/3055)

Both of the Fukien Agricultural College; coauthors of article "Measurement of the Interrelationships of Atmosphere and Soil Moisture." (Mukden, T'u-jang T'ung-pao [Soil Bulletin], No 3, May 62, pp 77-79)

CHU Hsi (2612/3056) [deceased]

WANG Yu-lan (3769/1636/5663)

LIU Chih-ch'un (2651/1807/2504)

All of the Institute of Experimental Biology, Chinese Academy of Sciences; coauthors of article, "The Relationship Between the Development of Goldfish, Carp, and Bream Embryos and Differing Maturation Processes of the Fertilized Ovum." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Jsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 97-110)

CHU Kuo-hua, Engineer; coauthor with O. V. Rumyantsev of article, "Determining the Coefficient of Static Friction Under Large Specific Pressure By Electrotensimetry," in Russian. (Moscow, Vestnik Mashinostroyeniye, No 12, Dec 62, pp 22-24)

CH'U Nai-feng (1448/6621/0023); author of article, "How Are Diseases Diagnosed and Treated Using Cybernetics?" (Shanghai, K'o-hsueh Hua-pao, No 8, Aug 62, p 287)

CHU Shar-mung (2612/0810/6593); author of article, "The Morphology of Fiber Materials." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 13)

HAN Shu-yu

HAN En-tse

coauthors with K. A. Andrianov, L. M. Khananashvili, and V. S. Tikhonov of article, "Polyorganoborsiloxanes," in Russian. (Moscow, Platcheskiye Massy, No 1, Jan 63, pp 21-25)

HO Wen, Moscow Mining Institute; author of dissertation for the scientific degree of Candidate of Technical Sciences, "Theoretical and Experimental Investigation of Extensive Utilization of Sinking Combines With TsNIIS-Model Rotary Cutters," in Russian. (Moscow, Vechernyaya Moskva, 14 Jun 62, p 4)

HOU Te-feng (0186/1795/1409)

OU-YANG Tzu-yuan (2962/7122/2561/6678)

coauthors of article, "Discussion of Some Problems in Nuclear Geochemistry. (Peiping, K'o-hsueh T'ung-pao, No 12, Dec 62, pp 40-47)

ASIA Tao-hsing (115/6670/5887)

WU Cho-jen (0702/0587/0008)

CHIANG Wen-ch'uan (1728/2429/3123)

All of Fu-tan University; coauthors of article, "One-Parameter 'Yu-Suan' [6788/4615; literally, 'J-Calculus'] Subgroups in Space of Indefinite Scale and All Positive Definite Generalized Functions of Finite Negative Quadrics." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Shi-chu Lun-wen Hsuan-chi: Shu-hsueh, Hua-hsueh [Collected Shanghai Scientific and Technological Papers of 1960: Mathematics, Chemistry], Aug 62, pp 28-54)

HSIANG Kuo-p'u (0686/0948/2883); author of article, "Dual-Indicator Electrode Amperage Titration." (Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, p 29)

HSIUNG Chu-kung (3574/0504/0501) Institute of Horticulture, Shanghai Municipal Academy of Agricultural Sciences; author of article, "Studies of Ways of Increasing the Yield of Shanghai Autumn Tomatoes." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Shi-chu Lun-wen Hsuan-chi: Nung-yen [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 60-67)

- HSU Le-t'ien, coauthor with M. V. Murav'yev and F. N. Romashov of article, "Surgical Treatment of Patient Ductus Arteriosus in Adults," in Russian; first published in Vestnik Khirurgii, No 7, July 1962, pages 16-22. (Moscow, Meditsinskiy Referativnyy Zhurnal, No 1, Section, 6 Jan 63, p 5)
- HSU Li-juan (1776/3810/7806); author of article, "The Chemistry of the Elements in the Actinium Series." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 44-49)
- HSU Shih-ch'eng (1776/0013/6134); author of article, Several Problems of Semipermeability in the Determination of Osmotic Pressures of Macromolecular Solvents." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 52-55)
- HSU Ying-lin (1776/5391/2651); author of article, "Radio-Frequency Millimicrosecond Techniques." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, p 205)
- HU Kuo-ting, author of article, "On the Amount of Information," in Russian; first published in Teoriya Veroyatnostey i Yeye Primeneniya, Volume 7, No 4, April 1962, pages 447-455. (Moscow, Letopis' Zhurnal'nykh Statey, No 3, 12 Jan 63, p 26)
- HU Shou-hsi (5170/0649/1153), Department of Geology, Nanking University; author of article, "Concerning the article, 'Nuclear Geochemistry,' by Hou Te-feng et al." (Peiping, K'o-hsueh T'ung-pao, No 12, Dec 62, pp 35-39)
- HAU Chung-i (5478/0022/0001); author of article, "Modern Applications of Vacuum Techniques." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, p 193)
- HUANG Jui-lun (7806/3843/4858), professor, Agrochemistry Department, Peiping Agricultural University; author of article, "Chemical Dusting of Stored Grains: A New Method for Protecting Grain Against Insect Pests." (Peiping, K'o-hsueh Ta-chung (Popular Science), No 12, Dec 62, p 364)
- HUANG Kuo-ch'ung, author of report presented at the Eighth International Anticancer Congress, 22-28 July 1962, and titled, "Expediency of Irradiation Before Operating On Tumors of Varied Localization," in Russian. (Moscow, Vestnik Rentgenologii i Radiologii, No 1, Jan 63, p 79)

HUANG Lung-kuang (7806/7127/1684)
 LIU Wu-hsiu (0491/2745/4423)
 WANG Lan-pi (3769/5663/3880)
 YAO Te-ch'in (1202/1795/3830)

All of the Institute of Scis, Chinese Academy of Sciences;

TAI Ch'eng-lu (2071/2110/7008)
 CHANG Yu-hung (1728/3768/5725)

Both of the Yang-chou Special District Research Institute of Agricultural Sciences; all are coauthors of article, "An Examination of Several Ways to Increase the Efficacy of (Nitrogen-Fixing) Bacterial Fertilizers in Rice Paddies." (Mukden, T'u-jang T'ung-pao, No 3, May 62, pp 66-69)

HUANG Ming-liang (7806/2494/5328); author of article, "Organic Solvents

In the Extraction of Rare-Earth Elements." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 16-23)

HUNG Lung (3163/7893); author of article, "The Adsorption Decrease

Effect and the Pulverization of Solids." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 24-29)

HUNG T'ien-tai (3163/1131/4704); author of article, "Studies of

Surface Catalyst Adsorption Using Infrared Absorption Spectra." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 1-8)

JEN Hsin-min (0117/2450/3046); author of article, "The Catalytic

Properties of Organic Semiconductors." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, pp 30-35)

KO Mei-yu (5514/2734/6877); author of article, "The Ordovician Graptolite Beds

of Lung-yu, Chekiang Province. (Peiping, Ti-chih Hsueh-pao, Vol 42, No 3, Sep 62, pp 307-316)

KU Ti-jen (7357/1912/0086); author of article, "Surface Film on Insoluble Substances." (Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, p 22)

KUO Fu-min (6753/6534/3046)
CHENG An-le (6774/1344/2867)
SUN Lung-fen (1327/7127/5358)

All of the Ch'eng-te Special District Research Institute of Agricultural Sciences; coauthors of article, "A Summary of Experiences in Banking Soil to Preserve Moisture." (Mukden, T'u-jang T'ung-pao [Soil Bulletin], No 3, Aug 62, pp 45-50)

LAN Shih-chen (5663/1102/3791)
LIU Wen-t'ung (0491/2429/6639)
CHIENG Chin-fu (4453/2516/4395)

All of the Institute of Soils and Fertilizers, Kirin Branch, Chinese Academy of Agricultural Sciences; coauthors of article, "The Soils of the Ch'ao-kuang Region, Pei-an, Heilungkiang Province." (Mukden, T'u-jang T'ung-pao [Soil Bulletin], No 3, May 62, pp 7-14)

LANG Chang-hsin, author of article, "On Determining the Filtration Resistance During Nonstationary Filtration of Gas," in Russian; first published in Izvestiya Vysshikh Uchebnykh Zavedeniy, Neft' i Gaz, No 11, November 1962, pages 47-52. (Moscow, Letopis' Zhurnal'nykh Statey, No 2, 12 Jan 63, p 24)

LEI Hung-shu (7191/1347/0209)
WANG T'ien-to (3769/1131/6995)

Both of the Institute of Plant Physiology, Chinese Academy of Sciences; coauthors of article, "Studies of the Variation Pattern of Rice Stem-Number." The authors acknowledge the assistance of Yin Hung-chang (3009/1347/4545); Chang Li-ch'ien (1728/6849/0578) of the Institute of Mathematics, Chinese Academy of Sciences; Wu I-shen (0702/0044/3947) of South China Chemical Engineering College; Wang Chia-kang (3076/0857/1481) and Ch'ien I-wen (6929/5065/2429), both of Fu-tan University. (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 1-15)

II Ch'in-pang (2621/2953/2831), Tsinghai Plateau Work Station, Chinese

Academy of Agricultural Sciences; author of article, "A Device for the Field Measurement of Soil Permeability." (Mukden, T'u-jiang T'ung-pao [Soil Bulletin], No 3, May 62, pp 81-85)

III Feng-ling (2621/7685/1545), Shantung Research Institute of Hydraulic

Engineering (Shan-tung Sheng Shui-li K'o-hsueh Yen-chiu So; 1472/2639/4164/3055/0448/4430/1331/4282/4496/2076); author of article, "A Discussion of Methods of Determining the Height of the Enforced Rise of Soil Capillary Water." (Mukden, T'u-jiang T'ung-pao [Soil Bulletin], No 3, May 62, pp 38-44)

II Ping-Jun (2621/4426/0243); author of article, "The Typomorphic

Characteristics of Minerals and Their Importance in Geochemistry." (Peiping, Ti-chih Hsueh-pao, Vol 42, No 3, Sep 62, pp 337-344)

II Tse-hua (2621/3419/5478); author of article, "The Problem of the

Movement of a Small Sphere Along the Axis of Rotation." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, p 234)

IIANG Yu-tso (2733/3768/1563)

TS'AO Jui-chi (2580/3843/7535)

Coauthors of article, "On the Age of the P'eng-lai Series in the Light of the Collenia Discovery." (Peiping, Ti-chin Hsueh-pao, Vol 42, No 3, Sep 62, pp 317-320)

LIU Hsiao-i, author of article, "Water Regime of Secondary-Soddy Slightly

Podzolic Soils of the Coastal Territory of Rybinskiy Reservoir," in Russian. (Moscow, Nauchnyye Doklady Vysshikh Shkoly, Biologicheskkiye Nauki, No 1, Jan 62, pp 183-188)

LIU K'ai-lu (0491/7030/4389); author of article, "Inorganic Reversed-Phase

Chromatography." (Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, p 17)

LIU Tsu-tung (0491/4371/3159)
HSIANG Wei (7309/4850)

Both of the Research Institute of Genetics at Fu-tan University;
Coauthors of article, "Advances in Human Cytogenetics" (Peiping,
K'o-hsueh T'ung-pao, No 12, Dec 62, pp 26-32)

LIU T'ung-ming (0491/0681/2494); author of article, "The Specific
Magnetism of Organic Substances." (Peiping, Hua-hsueh T'ung-pao,
No 7, Jul 62, p 34)

LIU Yuan-hsiang (0491/3293/3276); P'u-tung-nan Special District Research
Institute of Agricultural Sciences, Shansi Province; author of
article "A Survey Study of the Methods of Plowing Cornfields."
(Mukden, T'u-jang T'ung-pao [Soil Bulletin], No 3, May 62, pp
50-58)

MA Shih-yen (7456/1102/3508); author of article, "The Rapid
Analysis of Copper Alloys I. Rapid Analysis of Copper, Iron,
Aluminum, and Manganese in Tinless Bronzes." (Peiping, Hua-
hsueh T'ung-pao, No 7, Jul 62, p 48)

P'AN Chia-lai (3382/1367/0171), Institute of Organic Chemistry, Chinese
Academy of Sciences; author of article, "A New Method for the Ex-
ploration of Molecular Structure -- the Magnetic Resonance Spectro-
scope." (Peiping, K'o-hsueh Ta-chung, No 12, Dec 62, p 371)

SUN Chen-shu (1327/2182/2579); author of article, "Applications of the
Hall Effect." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, p 199)

TAI Wen-t'ien (2071/0795/1131) author of article, "Some Questions
Raised by Mr Hou Te-feng's paper, 'Nuclear Geochemistry.'" (Peiping,
K'o-hsueh T'ung-pao, No 12, Dec 62, pp 33-34)

T'AO Li-t'eng, author of article, "On the Question of the Calculation and Measuring Designs of Automatic Bridges," in Russian; first published in Priborostroyeniye, No 11, November 1962, pages 8-9. (Moscow, Letopis' Zhurnal'nykh Statey, No 3, 12 Jan 63, p 57)

WANG Heng-sheng (3769/1854/0581); author of article, "A Discussion of Some Problems Related to the Genesis of Chromite Deposits." (Peiping, Chung-kuo Ti-chih [Chinese Geology], No 7, Jul 62, pp 18-26)

WANG Hsu (3769/1645); author of article, "Nucleic Acid Chemistry." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 1)

WANG Lien-sheng, Moscow State University; author of dissertation for the scientific degree of Candidate of Chemical Sciences, "Interaction of Atoms Yielding Tritium With Terpenes," in Russian. (Moscow, Vechernyaya Moskva, 3 Nov 62, p 1)

WANG Shih-hua, coauthor with L. M. Kovba of article, "Hydrogen Reduction of Uranyl Vanadates," in Russian; first published in Vestnik Moskovskogo Universiteta, seriya 2, Khimiya, No 5, May 1962, pages 63-65. (Moscow, Letopis' Zhurnal'nykh Statey, No 3, 12 Jan 63, p 35)

WANG Tsung-hsiang (3769/1350/4382); author of article, "A Discussion of the Dynamics of Hydrocarbon Inversion Under Platforming Conditions." (Peiping, Hua-hsueh T'ung-pao, No 10, Oct 62, p 58)

WANG Wan-li (3769/8001/6849)
CH'EN Ching-chih (7115/2529/3112)
HSI Ting-pao (1153/7844/0202)
SUNG T'ing-sheng (1345/1694/3932)

All of the Institute of Plant Physiology, Chinese Academy of Sciences; coauthors of article, "The Physiological Significance of Baked Fields During the Late-Rice Plucking Season." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 16-34)

WANG Ying (3769/5391); author of article, "An Introduction to Continuous Electrophoresis." (Peiping, Hua-hsueh T'ung-pao, No 7, Jul 62, p 42)

WU Jung-jui, Moscow Textile Institute; coauthor with Z. A. Rogovin and A. A. Konkin of article, "Grafting of Polyacrylonitrile and Polyvinylacetate to Polypropylin Fiber," in Russian. (Moscow, Khimicheskiye Volokna, No 6, Dec 62, pp 11-14)

WU Ting-fen, Moscow Institute of Steel and Alloys; author of dissertation for the scientific degree of Candidate of Technical Sciences, "Physicochemical Properties of Phosphate Slang (Density, Surface Tension, Viscosity, Lamination)," in Russian. (Moscow, Vechernyaya Moskva, 11 Jan 63, p 4)

WU T'ung-fang (0702/1749/5302); author of article, "The Ultrasonic Interferometer." (Peiping, Wu-li T'ung-pao, No 5, Oct 62, p 220)

YANG Shih-lang (2799/1709/3809), Institute of Horticulture, Shanghai Municipal Academy of Agricultural Sciences; author of article, "An Examination of the Techniques Used in Increasing Yields of Shanghai Cabbage." (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-chu Lun-wen Hsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 50-59)

YANG Yu-sen, coauthor with I. P. Alimarin and G. N. Bilimovich of article, "Study of the Exchange Between Radioactive and Stable Niobium in Citric Acid Complexes By Isotopic Dilution," in Russian. (Moscow, Radiokhimiya, No 4, Apr 62, p 510)

YAO Kan-yuan (1202/0051/0337); author of article, "Thin-Zone Chromatography and Its Applications." (Peiping, Hua-hsueh T'ung-pao, No 8, Aug 62, p 9-15)

YU Shu-wen (0151/0647/2429)
 CHOU Chia-huai (0719/0857/2849)

Both of the Institute of Plant Physiology, Chinese Academy of Sciences; coauthors of article, "The Development of Wheat Colonies Under Differing Degrees of Intensive Planting." The authors acknowledge the assistance of Yu Chih-hsin (0151/1807/2450), Wan Hsin-shan (1254/2450/2619), Wang Chu-hua (3769/4376/5478), Yu Tzu-wen (0205/1311/2429), Fu Wan-hua (0265/1238/5478), Sung T'ing-sheng (1345/1694/3932), and Wang Chao-te (3769/0340/1795), all of the Institute of Plant Physiology, Chinese Academy of Sciences; as well as that of Kuei Sung-ch'iao (6311/2646/0829), Lo Chien-hsin (5012/1696/2450), and Tsung Nien-chu (6467/1819/3796), all of the Hsien-hsiang Special District Institute of Agricultural Sciences (Hsin-hsiang Chuan-chu Nung K'o So; 2450/6763/1413/0575/6593/4430/2076), Yunnan Province. (Shanghai, 1960 Shang-hai Shih K'o-hsueh Chi-shu Lun-wen Hsuan-chi: Nung-yeh [Collected Shanghai Scientific and Technical Papers of 1960: Agriculture], Aug 62, pp 35-49)

* * *

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:

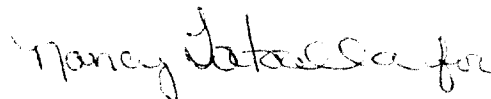
In February of this year, DTIC provided the CIA Declassification Center with a referral list of CIA documents held in the DTIC library. This referral was a follow on to the list of National Intelligence Surveys provided earlier in the year.

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