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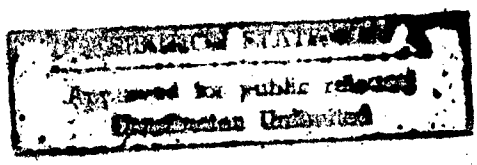
13 May 1983



China Report

SCIENCE AND TECHNOLOGY

No. 197

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NATIONAL DEVELOPMENTS

MEETING ON SCIENTIFIC JOURNALS RURAL DISTRIBUTION

OW091105 Beijing XINHUA in English 0714 GMT 9 Apr 83

[Text] Changsha, 9 April (XINHUA)--China's science newspapers have a total circulation of over 5.5 million copies, a 40 percent increase over 1982, according to a report made at the current national meeting on science newspapers.

The meeting on publishing scientific journals is being held in Changsha, capital of Hunan Province.

Science newspapers and magazines are sold mainly in the rural areas and play an important role in spreading agricultural knowledge and technical information among the peasants.

With the adoption of the job responsibility system in China's countryside, peasants are anxious to learn scientific farming. In Hunan Province, more than 1 million peasant families have subscribed to science newspapers. Subscription plus news stand sales brought the circulation to 1.43 million.

Hu Xinwei, a Hunan peasant who works in Lingpo commune, Hengshan County told the meeting that he and his family used scientific methods they had learned about in the newspaper in applying fertilizer and controlling plant diseases and insects. They also raised pigs, rabbits, fish and bees using new techniques and earned a new income of about 10,000 yuan in the past 2 years.

He said "the combination of agroscience and correct rural policies have helped us make a success of farming."

In Jiangsu Province, two-thirds of the counties publish agricultural science tabloids. In Xinjiang, Inner Mongolia and Tibet, the science newspapers are published in minority languages as well as Chinese.

The meeting is sponsored by the China Association for Science and Technology and the Ministry of Posts and Telecommunications.

CSO: 4010/57

NANJING AERONAUTICAL INSTITUTE COMPLETES TWO NEW WIND TUNNELS

Beijing GUOJI HANGKONG [INTERNATIONAL AVIATION] in Chinese No 2, 5 Feb 83 pp 2-3

[Article by Gong Yunnuo [7895 0336 6179] and Zheng Guofeng [6774 0948 1496]: "Brief Introduction to the Two Wind Tunnels at the Nanjing Aeronautical Institute"]

[Text] Recently, two new wind tunnels designed and built by the Nanjing Aeronautical Institute passed evaluation by the Ministry of Aviation Industry. One is the NH-2 series double test section wind tunnel, also the largest low-speed wind tunnel owned by a Chinese higher educational institution today. The other is a 1.2x0.3x6 meter variable turbulence wind tunnel. The use of these two wind tunnels will play a considerable role in developing aerodynamic technology in China's aviation and non-aviation sectors.

The NH-2 Double Test Section Wind Tunnel

This is a serial double test section closed-end single return flow low-speed wind tunnel. Its exterior is shown in Figure 1.

The main dimensions and properties of the wind tunnel are shown in the table.

After completion of the wind tunnel, tests of the empty wind tunnel were conducted, the flow field in the wind tunnel with a floor installed was verified, and full engine strength tests and experiments on the DBM-01 and TND217 standard models were conducted. The results of verification and experiments showed that the quality of the flow field in the wind tunnel was good. It coincided with the required specifications for the flow field of low-speed wind tunnels mainly for testing flight instruments in our nation. The data of the standard model strength test, when compared to domestic and foreign experimental data, were very close.

At present, the NH-2 wind tunnel has been equipped with a data collection and processing system centered around the DJS-131 computer and a six-component scale-clock type strain testing component. In addition, pressure sensors have been connected to the analog channel of the computer. The system can gather data during the course of routine strength tests and pressure

tests and carry out real time data processing, and the final test results can be printed out by a wide line printer and an X-Y plotter. The main power system, the α and β angle control system, and the data gathering and processing system of the wind tunnel have been fully automated using one microcomputer.

The 1.2x0.3x6 Meter Variable Turbulence Wind Tunnel

This wind tunnel is specifically designed to study the effect of turbulence characteristics in the wind tunnel upon the development of the adherent surface layer. The dimensions of the test section are 1.2x0.3x6 meters, the range of velocity is 8 to 42 meters/second, the lowest degree of turbulence is 0.062 percent. Using a variable turbulence generator, the degree of turbulence of the air current in the test section can be changed, therefore, it can be used to study the effect upon the development of the adherent surface layer.

The exterior of the wind tunnel is shown in Figure 2. It is a wooden direct downward blowing air current double component low velocity wind tunnel. The power source for the fan is installed at the front end. Right next to the fan is a 2-meter-long muffler section to reduce fan noise. The double component large dispersion section was designed according to isostatic gradients. The total dispersion angle is 46.6°. There are three anti-separation nets. A honeycomb and five layers of damping nets are installed at the entrance to the stable section. The contraction section has a contraction ratio of 13.3:1. To study the development of the adherent surface layer on smooth flat plates, one sidewall of the test section consists of a smooth flat plate 6 meters long and 1.2 meters wide. To eliminate the adherent surface layer in front of the entrance to the test section, slots to remove the adherent surface layer have been made on the walls surrounding the entrance. The front edge of the two sidewalls is pointed. The total length of the slots is 3 meters and the width is 0.01 meter. An adjustable regulating plate is placed at the bottom of the test section to change the stationary pressure gradient in the axial direction. On the other sidewall of the test section are five 0.716x0.420-meter observation windows. They simultaneously serve as portholes for installing models and inserting probes. The wind tunnel has seven types of variable turbulence grids to change the degree of turbulence and structure of the air current in the test section.

After completion of the wind tunnels, the flow fields were tested and verified. The tests included: 1) the range of wind velocity; 2) the stationary pressure gradient in the axial direction; 3) the evenness of the dynamic pressure field; 4) the stability of dynamic pressure; 5) the direction of air current; and 6) the measurement of the degree of turbulence. The results all reached the standard requirements. After testing and verification, an experiment on the subject of "the effect of the degree of turbulence upon the state of flow of the adherent surface layer of a cylindrical body" was conducted. The results were consistent with similar types of domestic and foreign experiments. At present, studies are being carried out on the

"effect of the degree of turbulence upon the development of the adherent surface layer of a flat plate."

At present, the wind tunnels have been equipped with routine pressure testing equipment and velocimeters as well as a TSI hot linear wind velocimeter, a wall surface sheering strength probe and a data gathering system.

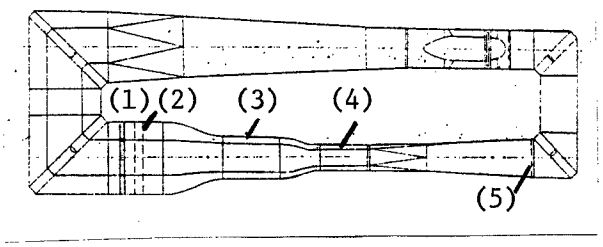

Figure 1. Plane figure of the NH-2 wind tunnel

Key:

1. Honeycomb
2. Damping net
3. Large test section
4. Small test section
5. Safety net

Overall length	69.10 meters	Maximum width	22.84 meters
Full axis span	150.86 meters	Height of axis from ground	4.33 meters
Forward test section (large test section)			
Sectional dimensions 5.1 x 4.25 meters		Length	7 meters
Maximum wind velocity (31 meters per second)			
Rear test section (small test section)			
Sectional dimensions 3 x 2.5 meters		Length	6 meters
Maximum wind velocity (89 meters per second)			
Power of fan DC electric motor 1,000 kilowatts			

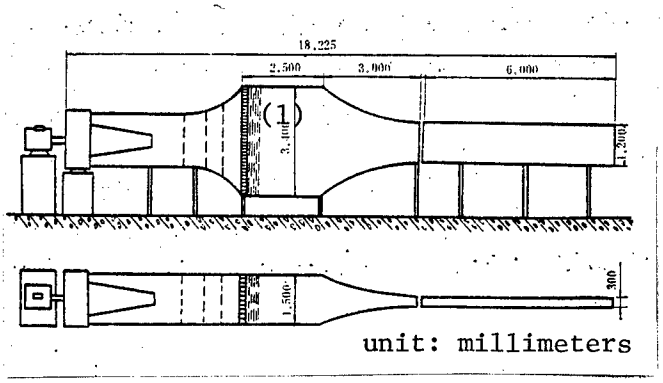

Figure 2. Exterior of the 1.2x0.3x6-meter variable turbulence wind tunnel

Key:

1. Damping net

9296
CSO: 4008/61

DESOLATE ISLE OF DONGSHAN CHANGES INTO OASIS

Beijing DAZIRAN [NATURE] in Chinese No 1, 1983 pp 7-8

[Article by Zhao Zhaobing [6392 2507 8506]: "The Desolate Isle of Dongshan Has Changed Into an Oasis"]

[Text] It would be difficult for people who now come to Dongshan Island and observe its flourishing verdant landscape to imagine that 20 years ago Dongshan Island had a completely different appearance. At that time there were treeless mountains and it was very windy and dusty. Land could not be cultivated and there was no firewood with which to cook meals. The people suffered immensely from winddrift sand and drought and could not escape from a life of dire poverty. Over the past 20 years after arduous struggle and painstaking effort by all the island's people, a new ecosystem has been attained by means of a scientifically planted forest.

Dongshan Island, situated off southern Fujian Province, is Fujian's second largest island with an area of 192.5 square km.

Dongshan Island was originally connected to the continent. The motion of Mount Yan produced the Changle-Nanwo fault zone. East of the fault zone, the earth's surface descended, thus creating the separation of Dongshan from the continent and turning it into an island. At the time, Dongshan was not one island but four. In the 4th century, the mud-sand flow from the mouth of the Jiulong Jiang River moved along the shoreline to the south and accumulated in the spaces between the four islands. These turned into sandbars and then finally connected the islands into one large island. In the process of these islands connecting to one another, particles from rock weathering also provided some of the material. Thus, in the layer of earth from the 4th century, under the layer of mud from the ocean bed and layer of fine sand is a layer of coarse sand ranging from several meters to more than 10 meters deep.

Dongshan Island is near the Tropic of Cancer and is, moreover, surrounded by the ocean. It belongs to the South Asian tropical marine monsoon climate. The average atmospheric temperature differences between winter and summer are only 15.9° C. Owing to its position within the area of rain dominance from Taiwan, and moreover because its mountains and hills are not high, it is difficult to form orographic rain. Thus yearly rainfall does not exceed 1084.9mm. It is one of the areas in Fujian Province with the least rainfall. Especially after the passing of the frontal rains every year, before the

typhoon season arrives, and under the control of high pressure from the subtropic zone, the weather is fair and hot with little rain. Agricultural crops are often threatened with drought. The greatest characteristic of this weather system is its strong winds. According to weather observations, the mean annual wind force is above force 4 wind on the Beaufort scale. The mean annual number of days for daytime gale winds above force 8 wind on the Beaufort scale is 133.5 days. From October to February, typhoons often strike the island, with wind force reaching 10-12 on the Beaufort scale. Every summer Dongshan Island also experiences coastal winds produced by the difference in daytime temperature between the continent and ocean.

The calamity of wind-drift sand on Dongshan Island is very serious. It is difficult to verify now exactly when it began. Several years ago when the Longtan Reservoir was being repaired, some relics from the Neolithic Age were discovered. It can thus be inferred that in very ancient times this area was inhabited by humans. According to historical records, Dongshan Island was a strategic point for coastal defense. In the Yuan, Ming and Qing Dynasties, troops were garrisoned there, ranging in number from several hundred to several thousand soldiers. At the end of the Ming Dynasty, the Zhejiang-Fujian coastal waters were continuously harassed by Japanese pirates. The Ming Court quartered a large contingent of soldiers at the encampment in Dongshan. In the beginning of the Qing Dynasty when Zheng Chenggong [6774 2052 0501] was entrenched in Taiwan, the Qing Court also quartered a large contingent of soldiers in Dongshan in order to prevent Zheng Chengong from counterattacking the mainland as well as to prepare to take over Taiwan. Owing to this kind of frequent military activity, the forests which originally existed on Dongshan were continuously subjected to destruction. Reforestry was also not carried out on Dongshan Island during Nationalist rule. There was no source for firewood and grass needed by the populace except to extract them from the immediate area. Thus by the time of Liberation, there were only a few banyan trees and trees in graveyards under which to seek shade on the whole island. The mountains and roadsides were stripped bare. Under these circumstances, the danger of wind-drift sand became ever more serious.

The primary source of Dongshan's sand is from Jiulong Jiang. When the mudsand flow moved to Dongshan Island propelled by the ocean and tidal waves, the sand was shoved to the shore or onto the shore. If there had been a plant covered forest or vegetation, the sand and dirt particles would not have been picked up by the wind nor would they have been subject to sand creep, rolled about and borne aloft. In addition, the wind force would have been of less intensity. But Dongshan Island had no plant covered forest. When gale force winds arose, the dust and sand would be borne aloft and swirled about. Not only was much farm land swallowed up by the wind-drift sand, the whole ecological system on Dongshan became seriously imbalanced. The ecological environment was adversely affected, as described in the following manner by the local populace.

> No grass on the beach, just barren land.
> No harvest to show, unpitying wind and sand.
> In spring firewood's more precious than oil.
> Crops sown, but harvestless toil.
> On hot days, sand burns the feet...

Scampering down the road to avoid the heat.
Can't open eyes in the wind, winter and fall.
Bitterness and worry--no place to tell it all.

According to reports by the department concerned, over the last hundred years 13 villages and more than 1000 houses had been swallowed up by the wind-drift sand, and more than 30,000 mu of good farmland had been buried. The wind-drift sand had even penetrated cracks in doors and roofs and sifted into the houses. Even when the populace wrapped glutinous rice dumplings at Dragon Boat Festival time, they had to hide within a mosquito net or else the sand would stick to the rice dumplings in large quantities. The health of the populace had also been greatly damaged. Some 70 to 87 percent of all the people on the island suffered from eye irritation from the dust and sand. At that time a single season of crop could barely be planted and grain production was very low. Per mu production ranged from 20 to 30 jin to a little over 100 jin. The poverty-stricken condition of the people is apparent. Many people left the island and migrated to other parts of the country.

This kind of adverse ecological environment seriously threatened the production, livelihood and very existence of the people of Dongshan. But the courageous people of Dongshan did not give in to hardship. In 1958, led by the County CPC Committee, they launched a large scale afforestation movement to bring greenery back to the island. They were steadfast in their devotion to carrying through with the project and throughout gave it top priority in county undertakings. Forests were planted on mountainsides and beaches, by reservoirs and roadways. By 1979 a protective forest shelter belt 30 km long and 50-100 meters wide, and 16 crop-protecting forest belts altogether 164 km in length had been planted in the whole county. In addition, more than 60,000 mu of barren moutainside had been afforested and 4 million trees had been planted throughout the county. The newly opened 54 km highway was already bordered and shaded by trees on both sides. The percentage of forest cover rose from .6 percent right after Liberation to the present 36.5 percent. In the main, mountaintops have turned into green forests and sandy beaches have been changed into oases. Agricultural land has been criss-crossed with networks of forests and highways have become shaded by trees. The danger of wind-drift sand has been checked. The barren island of days past has become an oasis inlaid in the East China Sea, appearing full of vitality and extraordinarily enchanting.

After more than 20 years of arduous struggle, the people of Dongshan have finally established a new ecological environment which is beneficial to the expansion of industries in agriculture, forestry, animal husbandry, fishery and salt, and conducive to creqting conditions under which the people can lead peaceful lives. At present all 14 drifting sand dunes have become completely stationary and a portion of them has been developed as farmland. Arable land in the whole county has thus increased more than 6,000 mu. Grave difficulties with water absorption and water use have been completely overcome. The forests regulate the climate and their ability to conserve water has been amply shown. In the whole county 20 reservoirs have been repaired, more than 1400 underground water wells have been dug, in addition to beginning construction on a transoceanic diversion canal which would guarantee water for the island's production and livelihood. It would allow over 12,000 mu of agricultural land to change from originally one harvest per year to two or three harvests per year. The more than 80,000 mu of agricultural land in the whole county has

improved its productivity under the effective portion of the protective shelter belts of forests and guaranteed high, steady yields in agriculture. In 1979, average grain productivity per mu was 1159 jin, 1.4 times greater than that of 1957 before afforestation. At the same time peanut production increased 120 percent and sugar cane production increased 300 percent compared with that of 1957.

After a new ecological balance was established, many species of trees and crops which previously could not be grown acquired the conditions on which they could rely for existence. At present over 70 species of trees have been introduced successfully. Tree growth has been good. For instance, in 4 years of growth for the pinus ellioti, average tree height reached 4.7 meters, and trunk diameter measured 7 cm. After the success of experimental plantings of citrus trees, production in 1979 surpassed more than 200,000 jin. Wind force within the orchards decreased after plantation of the forest shelter belt. Evaporation also markedly decreased. It has been determined that trees planted behind the protective forest shelter belt grew 5 times higher, wind force has been reduced 56.3 percent, and evaporation reduced by 33 percent. In locations where trees grew 10 times taller, wind force had been reduced 35.1 percent and evaporation had been reduced by 19.3 percent. In locations where trees grew 15 times taller, wind force had been reduced 23.9 percent and evaporation reduced 13.7 percent. In locations where trees grew 20 times taller, wind force had been reduced 14.6 percent and evaporation lowered .8 percent. Thus the rubber tree, a tropical cash crop, could also grow within the shelter belt. The nearly 1000 mu of rubber trees planted several years ago have already begun rubber tapping. Sea salt produced in the past was mixed with large quantities of sand and grit, and was of very poor quality. Now that the damage of wind-drift sand has been eliminated, the salt produced is white as snow and of good quality.

Forests are regenerating resources. Forests planted in 1958 began to be cut and thinned for use in 1972, and reforestation was begun in 1975. Altogether the forests supplied 12,000 cubic meters of lumber. Prior to 1972, forests provided 1,100,000 dan of firewood and charcoal for fuel yearly and has now reached the point of self-sufficiency. After 1972, rice stalks, peanut and sweet potato vines, and soybean plants which had originally been used for fuel were used instead as fertilizer and forage. This gave impetus to expansion in agriculture and stock raising. Dongshan is one of the most developed areas in Fujian for sea fishery. In the past, lumber required for ship building and dyes required for dyeing fishing nets had to be acquired elsewhere. Now the needs are resolved locally. For instance, casuarina equisetifolia and eucalyptus trees both make excellent lumber for ship building. Bark from the casuarina equisetifolia contains 13-18 percent tannic acid which can be used for dyeing.

Since production has expanded, the lives of the people have also markedly improved. They worry about neither food nor clothing. New houses are continuosuly being built. For instance the houses in Wojiao Village and Chishan Village are all brand-new. Especially, the whole ecological environment has changed. The green forest belts and clusters of verdant mountains together with the crystal clear blue waters of reservoirs and the deep blue sea blend harmoniously into a beautiful picture which makes one feel that Dongshan has really and thoroughly changed its appearance.

12369
CSO: 4008/79

SIX REFORMS PUT FORWARD TO IMPROVE PUBLIC HEALTH

Chengdu SICHUAN RIBAO in Chinese 15 Mar 83 p 1

[Text] Most recently the provincial Department of Public Health put forward six proposals for experimental implementation at all localities for the purpose of strengthening the public health sector of the province to carry out public health work well, and to serve the health of the masses still better.

(1) The reform of the public health sector depends solely upon the system of state monopoly. On the basis of the policy of long-term coexistence of the three types of ownership systems of all the people, the collective, and the individual, efforts should be exerted to develop collective medical care and public health undertakings in cities and the countryside while, at the same time, the state's medical care and public health organizations should be well managed. Public health enterprises set up with joint capital by scattered physicians and retired public health personnel should be encouraged and supported. With the approval of the leaders, those of state's medical care and public health units may, on a trial basis, be allowed to retain their post without salary and to start their own businesses. On the condition that the work responsibility of one's own post is completed, one may be hired by nearby rural and street hospitals (outpatient clinics) or may take on jobs with other public health units, teach some courses, or serve as technical consultant and receive a given amount of remuneration. The medical care manpower of industries and other departments should be fully utilized and developed. Under the conditions of not changing the relationship of the leader and the subordinate and the major objective of serving [one's major profession], [the workers] may be released to the outside in a planned and organized manner.

(2) The method of managing urban and rural collective public health agencies tightly by the state should be reformed. The principle of autonomy of the medical care agencies of the collective bodies should be strictly maintained in order to practice the method of "independent accounting, bearing one's own profit and loss, distribution according to labor, and democratic management" with the assistance of the state. The sources of the daily maintenance expenditure must depend primarily on one's own business income. The state's aid to medical care units of the collective bodies should be used mainly to help develop the public health sector. Those having the temporary difficulty of bearing their own gains and losses should also be given suitable assistance in the form of positive encouragement. Those unable to do a good job for a

prolonged period of time should have their public health work contracted to the collective body of some workers of a public health center or performed in a diffused manner.

(3) The shortcomings of "eating out of a big pot," and not considering economic and social benefits, which have existed for a long time in the public health agencies of the all-people ownership system should be reformed.

Using the method of managing an enterprise as reference, and through experimentation, the public health administrative department should gradually extend the basic principle of "budget and guaranteed performance" so that medical care and public health units could practice the economic responsibility system of aid provided only for assignments, savings kept [by the unit], and no aid for expenditure overruns. Based upon the principle of combining responsibility, authority, and benefit, the responsibility system of defined tasks, guaranteed performance, and awards should be practiced for the employees of medical care and public health units, with strict proficiency checks, awards, and penalties to overcome the egalitarianism of everything the same, whether doing more or less, doing well or badly. The rule of floating subsidies and bonuses should be implemented in the public health system this year. Those units which are qualified may experiment with partially floating salaries.

(4) The system of medical care charges should be reformed. According to the spirit of the documents of Ministry of Public Health and Ministry of Finance, pilot projects should be actively carried out in doing a good job of providing free medical services and labor insurance medicine service at cost. This work should be generally extended all over the province before the end of this year. The policy of charging fees, charging a reduced fee, or free service for planned inoculation, preventive injection, and prevention and treatment of endemic diseases and key diseases should be continued.

(5) The unfavorable policy preventing public health personnel from taking root in rural villages should be reformed. There should be a method of having a definite amount of floating subsidy for salaries for those public health personnel who are already in rural villages, who are to be assigned to rural villages in the future, who are high and intermediate ranking in commune public health centers, and who are willing to volunteer for rural work. The amount of floating subsidy will be eliminated once they leave the rural village. The subsidy should come out of the expenditure fund of the public health enterprise. The intermediate public health schools should practice a policy of directed admission and directed assignment for a portion of their capacity to operate these schools in many forms and channels.

(6) The method of using the funds of a public health enterprise must be reformed. In arranging the use of funds, there must be a guarantee to meet the key areas, primarily, the urgent needs of disease prevention and treatment, and items of strategic significance. While making good use of existing funds, many ways should be found to obtain capital investment from local finance administrations, to raise funds in the society, to raise funds by the public health unit itself, and to acquire outside assistance, etc.

6284
CSO: 4008/81

LIFE SCIENCES

DIFFICULTIES IN HOSPITALS NOTED, INCREASED FUNDING URGED

Beijing RENMIN RIBAO in Chinese 18 Mar 83 p 3

[Text] During a period of hospitalization for the treatment of a disease, a leading cadre, who had been doing financial work for a long time, discovered that the condition of the equipment in the hospital was extremely poor. Recently, he wrote a letter to Cui Yueli [1508 2588 3680], the minister of public health, hoping that when he reports on his work he will remind those in the departments of planning, finance, banking, materials, and commerce to turn up more often to observe the feelings of the people and to give more attention to the hospitals which are closely related to the lives and health of the people, so as to change the present condition of outdated and backward equipment at many of the hospitals.

This person's name is Liu Mingfu [0491 2494 1133]. He is now working in the Research Institute of Finance, Academy of Social Sciences. In his letter to Cui Yueli, he said: "Since 1981, I deeply regret, I have had the misfortune of having contacts with hospitals. I had been doing financial work for a long time but never made an inquiry into public health departments. I did not truly understand the hardship of this battlefront; therefore, I was not able to express [my opinions] to the leader department [the Ministry] sooner. As a matter of fact, financially speaking, especially in the management of enterprises, waste is very great. The hospitals of the public health departments have old equipment, many difficulties, and serious problems, however. They should be given a lot of consideration.

(1) In late 1981, I was hospitalized in the high rank cadre ward of Sichuan College of Medicine Hsopital (the former Huaxi Hospital) and saw that the catheterization equipment was extremely old. The nurse had to adjust it frequently, otherwise the tube would be obstructed. What a mess!

(2) In late 1982, the Shoudu Hsopital dispatched a physician to my house to give me emergency treatment. The EKG equipment he brought with him was almost not useable. It just about worried the physician to death.

(3) In 1982, I brought a patient to Shoudu Hospital's Emergency Room (ordinary outpatient case). The hallway was so crowded that the patient's cart could not pass through. The hallway was narrow to begin with and sick persons were lying against both sides of the walls. Many of these patients were being administered transfusions and oxygen as well. If there had been anyone in

need of emergency treatment, there would have been no way to push his cart through. What could be done then? The nurses had many opinions about [this situation] but they just had no one to express them to.

(4) On the afternoon of 3 February 1983 I went to the High Rank Outpatient Clinic of the hospital for an EKG. The nurse of that 6th floor room worked on it for a long time and failed. She got desperate and went to ask the help of a physician who could not make it work either. They said the failure was caused either by a trouble in the machine or some [outside] interference.

(5) Physicians' salaries are much too low and there are too few nurses. They are not looked upon as important.

The above observations are [certainly] not numerous, but just these few instances cannot help but make one feel deeply that our country is still very poor and it is not realistic to wish for any sort of easing of the situation. Yet, why is it that the financial departments have wasted so much for such a long time? The department that is in charge of the [purse] strings would not investigate the reasons [for the waste] strictly and paying attention to detail, while the departments of public health, which involve matters of life or death, have no understanding of the real situation and would not try to resolve some of these urgent problems. Shoudu Hospital and Sichuan College of Medicine are supposed to be the "tiptop" and the conditions of their High Rank Cadre Wards are like this! What is the use of talking about the others?

Liu Mingfu finally wished that when Cui Yueli reports his work to the central leaders he would remind the comrades of the departments of planning, finance, banking, materials, and commerce to investigate and study more thoroughly as to make overall plans to resolve the problems.

6248
CSO: 4008/81

INTERVIEW WITH RESPONSIBLE PERSONS OF PUBLIC HEALTH DEPARTMENT

Shijiazhuang HEBEI RIBAO in Chinese 9 Feb 83 p 1

[Interview with Provincial Bureau of Public Health Official by HEBEI RIBAO reporter; date and place not specified]

[Text] A person of responsibility in the provincial Bureau of Public Health was recently interviewed by this reporter to answer questions concerning the way the medical care and public health sector of the province is to be reconstructed.

Question: Reconstruction of public health agencies is imperative. Please tell me about the necessity and urgency to reform the public health agencies in this province.

Answer: The reform of urban and rural public health agencies of this province has taken its first step and some delightful signs have emerged. The "five fixed items and one award" (fixed subsidies, and awards for completing indices of checked items) method is in practice in 84.4 percent of the hospitals of the all-people ownership system at the county level and above to form the basic content of economic management. The floating salary system is now practiced by 44.81 percent of the commune public health centers. A form of medical care through contracts with barefoot doctors, either collectively or individually, is being practiced in some rural production brigades and public health agencies. These reforms have inspired a positive attitude in the vast number of medical personnel. Less leave is being taken and fewer disputes with patients are occurring. More people are devoted to the profession; items needed for service in the medical care units are increasing; more units have larger incomes and lower expenses and produce obvious work efficiency and economic benefits. The masses have reflected on the resulting convenience in having illnesses take care of. These all demonstrate the merit of the reforms and their broad future. However, due to the prolonged influence of "leftist" thoughts in the province, the leaders are not brave enough in ideological guidance with respect to reform. Thinking is not sufficiently liberated. There is a lack of forcefulness in leading the masses forward in reform, started by the masses, so that the stride of the reform march is not very large. In various degrees, "monopoly," "eating out of one big pot," "cutting through everything with one chop," and "not making an accounting" still exist in some

public health and medical treatment departments, so that a positive attitude for public health personnel cannot be fully developed to increase their productivity and push the public health sector ahead. The necessity of liberated thinking is a problem of success or failure for the entire Bureau of Public Health; the urgency must be recognized fully. It has become a compelling problem firmly to stand for reform, the change the style of doing things, to go still deeper, to study new conditions, to resolve new problems, and to find a way of constructing the public health sector, that is particularly true in Hebei.

Question: What are the problems to be resolved in the current work of reforming public health agencies?

Answer: In the public health reform work, the central authority has made its appeal, local areas of the province have the experience, and medical service workers have made their demands. There is only one central "stumbling block" which presents a problem. The thoughts of some leaders are not sufficiently liberated. They have not made a sufficient investigative study of the new problems emerging from the new situation, nor will they give enthusiastic support. They just do things the old way according to old concepts. Take business endeavors by individuals as an example, they are always afraid to open the door too much and cause the commune public health center to feel the squeeze. To this day, not a single [business endeavor by individuals] has been approved in some counties; in other counties, only very few are approved. Of course, this problem is closely related to the fact that the thoughts of the leaders of the provincial Burear of Public Health are not sufficiently liberated. Some stress the difference and special nature of a public health department. [They think] it is a public welfare enterprise and cannot be compared with economic departments. [Because of this] they consider the improvement in the quality of medical service to be opposed to economic benefits. Some leaders are advanced in years. They wait for structural reform and are unwilling to be creative. They are afraid of risks; they are afraid of bad side effects. Some are waiting for experience [created by others] and ask for methods. They say that reform is a good thing but there are many difficulties; methods are few in number; they do not know how to do it. Some are even saying: "If men and systems are not reformed, neither do they have great confidence in it. For this reason, improving the recognition of the urgency and necessity for reform is the first important problem to be resolved by the public health administrative leaders of all levels.

Question: This year is the year of reform. What is the prospect and plan of reforming public health work in the province?

Answer: Based upon a clear recognition of the situation, [we] will liberate thoughts, stand firmly on the spirit of reform, strengthen leadership, proceed with reform steadfastly and orderly. Many ways and numerous forms should be adopted to develop medicine, to change the phenomena of "monopoly," "eating out of a big pot," "cutting through with one chop," and "no accounting." The public health business must be performed lively and well. Aside from the reform tasks, methods, and steps proposed at the Conference of Directors of Prefecture and Municipal Bureaus of Public Health, the provincial Bureau of Public Health

is prepared to concentrate its efforts to do the following four items: (1) Change the style of doing things, carry it out farther, investigate and study, practice reform with the masses. After the Spring Festival, one-third to one-half of its manpower will be organized into five groups, led by the leaders of the bureau, to carry out surveys and studies among the masses and to summarize and extend model experience. During the first half of the year, small, special subject experience exchange meetings will be held. (2) Establish experimental units at every level and use them as starting points to promote the launching of reform work. The province will establish a group of various different types of experimental units. In the second half of the year, an all-province experience exchange meeting will be held to summarize and extend. (3) Strengthen reorganization and management. In the matter of reform, it is necessary to take big strides but it is also necessary to prevent "cutting everything with one chop." Reform should be combined with reorganization; reorganizing management should be combined with reform. As the reform proceeds, the job of training technical personnel should be conducted earnestly, as well as the job of determining the various indices. (4) Strengthen leadership. Reform is at the center of the present task; it is the guiding idea of the entire public health work. Strengthen leadership, put it on the daily discussion agenda, study it regularly, discuss it, and continuously deepen the understanding. Through carrying out reform, a new phase of public health work is created. We believe that if we closely rely upon the masses and believe in their creative spirit, our reform task can triumph and become a reality. Then, the public health enterprise can quickly march forward.

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TITLE: "Research on Grid-mesh Shapes of Non-intercepting Gridded Guns"

SOURCE: Beijing DIANZI KEXUE XUEBAO [JOURNAL OF ELECTRONICS] in Chinese No 2, 1983 pp 116-123

TEXT OF ENGLISH ABSTRACT: A non-intercepting gridded gun with the perveance of 1.4 μp is described. Three different grid-mesh shapes (square, hexagonal and annular) are chosen, and the experimental results in an electron beam analyzer are given in detail. The design methods of the gun for each grid-mesh shape and the structures of the test system are briefly introduced. The results measured by using the fluorescent screen and pin-hole scanning technique are given. It turns out that the annular grid possessed the best electron optical performance. The reason that the performance of the annular grid is better than that of the others is qualitatively explained and discussed, so as to give the guidelines for how to design non-intercepting gridded guns. Through the experiment and computer calculation for several non-intercepting gridded guns, the previous wrong conceptional conclusions about the performance of the guns with and without grids may be corrected.

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TITLE: "A High Repetition-rate High Voltage Pulse Generator"

SOURCE: Beijing DIANZI KEXUE XUEBAO [JOURNAL OF ELECTRONICS] in Chinese No 2, 1983 pp 124-129

TEXT OF ENGLISH ABSTRACT: In this paper, a double arm charge-discharge circuit is described. A high repetition-rate high voltage and variable width rectangular pulse has been obtained. Its technical data are as follows: Its amplitude is 600 V - 8 kV continuously adjustable; the maximum repetition-rate is 30 kHz; the rise and fall time is less than 1.5 μs when the load capacity is 56 pF, less than 1.8 μs when the load capacity is 112 pF; the pulse duration ratio is 1:10-1:1 continuously adjustable. Theoretical analysis for the circuit has been made.

9717
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TITLE: "The Optimization of MHD Generator Duct"

SOURCE: Nanjing NANJING GONGXUEYUAN XUEBAO [JOURNAL OF NANJING INSTITUTE OF TECHNOLOGY] in Chinese No 1, 1983 pp 24-34

TEXT OF ENGLISH ABSTRACT: This paper studies unconstrained optimization of the MHD generator duct on the basis of quasi-one-dimensional model using the modern calculus of variations. The optimization procedure proposed is then applied to the design of a small segmented-electrode Faraday MHD duct. The purpose is to maximize the electrical power output extracted from the duct of a given length under the terminal conditions of given inlet stagnation enthalpy and back pressure. It is concluded that the supersonic duct is optimal and its electrical output is not sensitive to the variations of the duct shape around the optimal one. The effect of parameters, such as magnetic field, wall temperature, back pressure, length of the section with constant cross-section attached to the generator duct outlet, etc., on the performance of the optimal duct is also calculated. More factors were considered in the model used. Besides friction, heat loss and chemical reaction, the factors, such as boundary layer, current leakage, electrode resistance and finite segment of electrodes, were considered.

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TITLE: "The Calculation and Thermodynamic Analysis of the Projects of a 10MW Coal-fired MHD-Steam Combined Cycle Pilot Power Plant"

SOURCE: Nanjing NANJING GONGXUEYUAN XUEBAO [JOURNAL OF NANJING INSTITUTE OF TECHNOLOGY] in Chinese No 1, 1983 pp 35-46

TEXT OF ENGLISH ABSTRACT: This paper presents the formulas for calculating the thermal efficiency of the MHD-steam combined cycle power plant using three different kinds of oxidant preheaters, i.e., separated fired, direct fired and mixed.

Taking into account heat transfer, friction and electrode voltage drop, a one-dimensional model for Faraday channel is given. For an MHD-steam pilot plant of 10MW using Huainan coal as the fuel by changing the oxygen enrichment, oxidant preheating temperature, Mach number at the channel entrance, velocity profile (constant Mach number, constant velocity or reducive velocity), load coefficient and magnetic field, more than 130 various projects were calculated on a TQ-16 computer. Based on the calculated results, the effects of some factors on the overall thermal efficiency are discussed.

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TITLE: "Numerical Analysis of Temperature Field and Stress Field for JS-2 MHD Generator Electrodes"

SOURCE: Nanjing NANJING GONGXUEYUAN XUEBAO [JOURNAL OF NANJING INSTITUTE OF TECHNOLOGY] in Chinese No 1, 1983 pp 47-55

TEXT OF ENGLISH ABSTRACT: Using a kind of ceramic electrode and two kinds of metal electrodes as examples, this paper describes governing equations for solving the temperature field and stress field of JS-2 MHD generator electrodes and gives relevant thermal boundary conditions and displacement constraints. It is indicated that because of the presence of a strong magnetic and electric field in the MHD generator channel, the Hartmann effect and the laminarization of gas decrease the convective heat transfer, whereas the Joule heating increases it. The effects of these factors on the convective heat transfer coefficient can be calculated with formulas given in this paper. Also considered is the radiant heat transfer from the plasma to the electrode walls. As an internal heat source the Joule heat of the current through the electrode is calculated. Based on theoretical analysis and experimental measurements the profile of the current

[Continuation of NANJING GONGXUEYUAN XUEBAO No 1, 1983 pp 47-55]

density along the X direction can be expressed as an exponential function of X.

The finite element method is used for the calculation of the temperature field and stress field. Since the physical properties of electrode materials are the functions of temperature, the iteration used to calculate the temperature profile is identical with that used for calculating the physical properties of electrode materials. The thermodynamic properties and flow conditions of combustion gas are calculated based on the calculation of combustion gas composition and quasi-one-dimensional model of the MHD channel. The calculated profiles of isothermal and thermal stress in the electrodes can be used as the bases for analyzing the rationality of the electrode structure and for improving the electrode design.

9717
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TITLE: "A Study of the Geological Structure of the Offshore Areas of China"

SOURCE: Beijing DIZHI LUNPING [GEOLOGICAL REVIEW] in Chinese Vol 29 No 2, Mar 83 pp 101-110

TEXT OF ENGLISH ABSTRACT: The paper discusses the characteristics of regional geological structures in the Bohai Sea, the Yellow Sea, the East China Sea and the South China Sea based on data gained by aeromagnetic surveys over the past few years.

The Bohai Sea is an inland sea. It is a rift-valley basin developed on the pre-Sinian rigid crystalline basement of the north China platform as well as a part of the north China downwarped area and the center of the present North China-Bohai Gulf oil-gas-bearing region. The aeromagnetic data have proved the similarities in basement lithofacies and tectonic configuration in such areas as Jiaodong, Liaodong, the northern Yellow Sea and the northern part of Korea,

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indicating that they belong to a single basement-uplift region named the Jiaoliao-Langling block.

The Yellow Sea is a shelf sea, which is similar to its adjacent continents in geological structure and connects with them, being a submerged part of the continent. The part to the south of the Jiashan-Xiangshui deep fracture belongs to the downwarped region of the South Yellow Sea. The depth of basement rocks is about 5-9 km. It is presumed that there are thicker Mesozoic strata in the depressions arranged en echelon in addition to Paleogene strata. The Shandong-Jiangsu uplift passes eastward through the Qianliyan uplift and is connected with the Kyonggi uplift of the Korean Peninsula. The Wunansha uplift is composed of thicker Paleozoic strata and is covered eastward by the NE-trending Mesozoic volcanic zone in Zhejiang, Fujian and Guangdong provinces. It is correlated with the ancient wochuan depression.

The East China Sea is an epicontinental sea, where the NEE-trending Pal-Asiatic structure intersects the NNE-trending marginal Pacific structure. There are two magnetic highs reflecting respectively two magmato-tectonic zones in the East China Sea: the NNE-trending Fujian-Zhejiang coastal magmato-tectonic zone and the magmato-tectonic zone on the west of Okinawa. The two zones separate the basement of this region into three parts: the west part--the Zhejiang-Fujian area--is marked by the Paleozoic metamorphic basement; the central part by the

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Mesozoic East China Sea metamorphic basement; the east part by the Okinawa trough Cenozoic metamorphic basement. The above-mentioned distribution regularities demonstrate the accretion of continental margins. According to the framework of the trench-island arc-basin system, there might be two ancient subduction zones on the east flank of the above-mentioned two magmato tectonic zones. Their ages are respectively Late Paleozoic to Early Mesozoic and Late Cretaceous to Paleogene.

Before the expansion of the East China Sea shelf depression and the Okinawa trough, the Japan islands were connected with the tectonics of the continent of China.

The Hida-Sangun metamorphic zone in the SW part of Japan was probably connected with the Variscan fold belt in the SE coastal area of China. The East China Sea depression and the Okinawa trough were formed by a spreading mechanism. The area of the former reaches 460 km^2. The depth of the magnetic bedrocks in this area may be 9 km. It was filled mainly with Cenozoic marine sediments, representing the best prospective oil- and gas-bearing area in offshore China.

The South China Sea is a typical epicontinental sea and was formed by the breaking-up of continent margins and local sea-floor spreading since the Oligocene. The aeromagnetic data have proved that the magnetic stripes are

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distributed in an approximate EW direction, which are analogous to the magnetic spectra commonly found in oceans, showing that the South China Sea deep oceanic basin was formed by extension in a NS direction. According to the latest oceanic data, the spreading ridge of the South China Sea is located near latitude 1500'N, and spreading took place in mid-Oligocene to Early Miocenetime. The spreading of the South China Sea is asymmetrical. The boundary between its northern part and the continental margin of China represents a passive continental margin, without subduction. The northern continental shelf of the South China Sea was influenced to some degree to form several tectonic lines of NEE trend. From north to south they are: Beibu (Bac Bo) Gulf, Pearl River mouth, Taiwan shoal shelf depression zone, Hainan Island-easterly extension of Hainan Island-Dongsha continental slope uplift zone, northern Xisha Islands faulted trough and Zhongsha-Xisha Islands uplift. In the above negative structures and the Yinggehai depression there are very thick Cenozoic sediments. Undoubtedly, this area must be a very important oil- and gas-bearing province in the southern part of China.

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TITLE: "Application of Multivariate Statistical Analysis in the Bituminous Coal Classification of China"

SOURCE: Beijing DIZHI LUNPING [GEOLOGICAL REVIEW] in Chinese Vol 29 No 2, Mar 83 pp 149-158

TEXT OF ENGLISH ABSTRACT: This paper provides an example of how multivariate statistical analysis is applied successfully to the bituminous coal classification of China. Hundreds of samples and 17 variables collected from the coalfields of major coalbearing epochs all over China, except Tibet and Taiwan Province, were used in this study. The combustible-base volatile flux V^r and caking index $G_{(RI)}$ were chosen by means of the correlation analysis and stepwise discriminatory analysis as main indices for the new classification. By means of the optimum section we find the boundary value of the ordinate axis ($G_{(RI)}$) and the abscissa axis (V^r) in the classification coordinate system. Thus the V^r-$G_{(RI)}$ diagram, a diagram of the new classification scheme, was constructed, in which bituminous coal was divided into nine major classes. By using

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correspondence analysis, the dimensions of sample space were reduced by 14/17 without losing initial information. The trend of sample point concentration on the factor surface showed that the result of the classification obtained using correspondence analysis conformed to that of the V^r-$G_{(RI)}$ classification, and it further verified the reliability of classification made by using two indices. At the same time the certain relation between the properties of a great variety of coal and their attributes can be explained, with the result that bituminous coal classification becomes more scientific, reasonable and practical than before.

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TITLE: "The Application of Geological Remote Sensing in Regional Geological Surveys in Xinjiang"

SOURCE: Beijing DIZHI LUNPING [GEOLOGICAL REVIEW] in Chinese Vol 29 No 2, Mar 83 pp 190-197

EXCERPT FROM ENGLISH ABSTRACT: Geological remote sensing has been applied by the Regional Geological Survey Brigade of the Xinjiang Geological Bureau in regional geological surveys and medium- and small-scale mapping since 1956. The technique has broken through the trammels of transitional geological methods and yielded faster, better and more economic results, and thus opened vast vistas for the modernization of geological work.

This paper summarizes the experience gained through many years of application of aerial photographs, Landsat images and other remote-sensing data in regional geological surveys and small- and medium-scale mapping, and on that basis the actual results of geological remote sensing are dealt with. There are over 50 typical aerial photographs and Landsat images involving a variety of geological phenomena in the paper.

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The actual results of the application of remote-sensing geology essentially embrace the following:

Geological aspect. Strata and rock masses of various ages or origins can be classified and accurately delineated, and the marker beds may also be traced effectively. Among them, the genetic types of the Quaternary and the phases of intrusion can be distinguished with special success. In addition, the qualitative data of rocks, particularly high-grade metamorphic rocks, may be provided. In areas where volcanic rocks are developed, this technique has its unique advantages with respect to distinguishing the new volcanic apparatuses from the old ones on the basis of geomorphologic features and specific interpretative indications. Because of the great abundance of tectonic information, the configuration, size, nature and generation of fractures (including ordinary fractures, active fractures and hidden fractures) and folds may be revealed and interpreted by the method with a high precision than by the conventional geological method.

9717
CSO: 4009/138

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TITLE: "Research on the Quasi-balance Movement of Typhoon Center"

SOURCE: Guangzhou ZHONGSHAN DAXUE XUEBAO [ACTA SCIENTIARUM NATURALIUM UNIVERSITATIS SUNYATSENI] in Chinese No 1, 1983 pp 112-120

TEXT OF ENGLISH ABSTRACT: The movement of a typhoon center is closely related to its environment basic flow and there is a quasi-balance correlation between them. However, so far the correlation is not very clearly known. The correlation is theoretically revealed in this paper by a model of a mature typhoon. It is found that the balance moving velocity of a typhoon center is determined by the balance of the following forces: its environment pressure-gradient force, the Coriolis force, the interaction force between the typhoon vortex and its environment basic flow, the friction force and the internal force. If the moving velocity of a typhoon center is not equal to the balance velocity, it will take only about 3 hours for the moving velocity to rapidly adjust until it approaches a balance velocity with the frictional effect and the relative divergence. Therefore, a normal typhoon center always moves with a quasi-balance velocity. The normal typhoon track depends mainly on the evolution of its quasi-balance velocity.

[Continuation of ZHONGSHAN DAXUE XUEBAO No 1, 1983 pp 112-120]

In this paper the causes resulting in an unexpected typhoon track are also analyzed and discussed.

9717
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TITLE: "Intrinsic Pulsation Induced by Lateral Carrier Waveguiding in Stripe Geometry DH Semiconductor Lasers"

SOURCE: Beijing BANDAOTI XUEBAO [CHINESE JOURNAL OF SEMICONDUCTOR] in Chinese No 2, 1983 pp 161-170

TEXT OF ENGLISH ABSTRACT: Effects of lateral optical and carrier distributions and their interaction on dynamic processes in stripegeometry DH semiconductor lasers are analyzed theoretically. The rate and field equations are simultaneously solved in a rather strict manner for numerical transient solutions. The results calculated show that when the index waveguiding of the carrier distribution and the carrier diffusion become pronounced, "intrinsic" pulsation characterized by the lateral optical beam width with continuous and significant oscillation during pulsation may occur in the laser output in a certain range of injected current.

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