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Worldwide Report

EPIDEMIOLOGY

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16 March 1984

WORLDWIDE REPORT
EPIDEMIOLOGY

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BRIEFS

RAJAPUR DIARRHEA DEATHS--JHALAKATHI (Barisal) Jan. 26: Five persons died of diarrhoeal diseases recently and many others have still been suffering from the disease at Rajapur upazila. It may be mentioned here that a good number of people died also last year. It is reported that scarcity of pure drinking water has been prevailing in the area for a long time. The existing shallow tube wells which were fielded by the local Public Health Department are not sufficient to cater to the needs of local peoples. [Text] [Dhaka THE BANGLADESH TIMES in English 27 Jan 84 p 2]

MORE DIARRHEA DEATHS--BRAHMANBARIA, Jan. 28: At least 25 persons died of diarrhoea and more than 100 people were attacked by the disease within three days in two villages under Bancharampur upazila of Comilla district. Diarrhoea has broken out in an epidemic form in Durgarampur and Daria Daulatpur village under Bancharampur upazila. Medical team was sent to the affected areas. [Text] [Dhaka THE BANGLADESH TIMES in English 29 Jan 84 p 2]

CSO: 5400/7085

BRAZIL

BRIEFS

CONJUNCTIVITIS EPIDEMIC--Some 300,000 persons in greater Rio de Janeiro have acute hemorrhagic conjunctivitis, a disease which is likely to spread to other areas within the state, thus causing a large-scale epidemic throughout Brazil. This was reported yesterday by Eduardo Costa, Rio's health secretary. [Excerpt] [PY251417 Rio de Janeiro O GLOBO in Portuguese 4 Feb 84 p 13]

CSO: 5400/2045

BRIEFS

HEALTH MINISTRY ANTI-TYPHOID CAMPAIGN--With the distribution of 250,000 adhesives marked with the symbol "F.T.," the second phase of the campaign carried out by the Ministry of Health against typhoid fever will continue today; this campaign is directed especially toward summer vacationers. This phase began a week ago with the placing of 15,000 colored posters in various crowded places in the metropolitan area, Vina del Mar and beaches along the central coast. The ministry also printed about 250,000 small pamphlets in black and white, and these are being distributed in supermarkets, commercial centers, downtown streets and other localities where large crowds gather. This effort is being further supplemented by the distribution of another 250,000 small colored leaflets inserted in various women's publications inasmuch as the ministry's intention is to make adequate preventive measures known particularly to housewives, since it is they who handle and prepare the food. All the printed matter for this preventive program will also be handed out to the public at toll points of Lo Prado and Pomaire, according to information released by the Health Ministry's Department of Public Relations. The campaign, begun by the Ministry last year, will continue after this phase with the mass vaccination of students of the metropolitan area who did not receive proper vaccination during previous immunization programs. [Text]

[Santiago EL MERCURIO in Spanish 25 Jan 84 p C-2] 8568

CSO: 5400/2038

BRIEFS

FEWER LEPROSY CASES REPORTED--"There are more than 12,000 lepers in the Congo," the head of the Epidemiology and Endemic Diseases Department, comrade Pierre Eozenou, stated Friday. In an interview with the Voice of the Revolution, a few days before the commemoration of World Leprosy Day (January 29), comrade Pierre Eozenou noted that approximately 15 million human beings are afflicted with leprosy. "The Health Ministry," he said, "plays a major role in the struggle against communicable diseases." "At the regional level (in the Congo)," he specified, "all measures taken against leprosy are carried out by operations divisions of the Epidemiology and Endemic Diseases Department. The Congolese state is aided in its fight against leprosy by charitable associations, especially "Raoul Follereau", which each year grants subsidies on the order of 50 million CFA francs to the Congo, he added. The head of the Epidemiology and Endemic Diseases Department also stated that there were 15,600 lepers in the Congo in 1982. This number has been reduced to 12,000 as a result, he emphasized, of "rehabilitation operations" which took place during 1983. [Text] [Brazzaville BULLETIN QUOTIDIEN DE L'ACI in French 21 Jan 84 p 1] 9825

'CHOLERA-RELATED' EPIDEMIC --A "cholera-related" epidemic is ravaging Makou, a village located 220 km from Kindamba in the Vindza administrative control post (PCA). Fifty-five people have been victimized by the epidemic in only 10 days. The population of the village is made up of pygmies. The young, age 16 and under, have been especially hard hit by the illness. Notified by the PCA authorities, the regional health director at Pool, comrade Batanga, traveled to Kindamba to confirm the report. Upon their arrival at the scene, the team, led by the regional health director, immediately began vaccination sessions, treatments and education in hygiene. According to Dr Batanga, the illness first manifests itself by a high fever and abdominal pain, then, by profuse, liquid and soft diarrhea and, finally, by auterrorrhagia (purge of the blood) which causes the death of the subject. The specialists have not yet voiced an opinion on the type of epidemic this may be; samples have been taken and specimens delivered to the National Public Health Laboratory in Brazzaville for analysis. It is thought that the harsh living conditions of this pygmy population are at the bottom of the epidemic, which has spread throughout a 27 km corridor. Inhabitants have begun to flee the village. Dr Batanga has confirmed that the population suffers from malnutrition and a lack of potable water and clothing. The conditions of hygiene under which they live are hazardous. Aware of the situation in

Makou, the Health Ministry has sent reinforcements to the team already in the area, in order to rapidly circumscribe and stem the plague. Within the next few days, hygienic measures will be taken on behalf of the people in the afflicted village. These will consist of placing the inhabitants under quarantine and medical control, and of providing them (for the short term) with food supplies, de l'eau mayo. [translation unknown] and clothing. [Text] [Brazzaville MWETI 17 Jan 84 p4] 9825

CSO: 5400/80

MALARIA REPORTED TO BE INCREASING IN INTERIOR REGIONS

Georgetown CATHOLIC STANDARD in English 15 Jan 84 p 4

[Text] An outbreak of malaria in the Camoodie Creek on the Essequibo River, 30 miles beyond Mabura Hill, last November called attention to the spread of the disease in the interior.

About 20 cases were diagnosed in this gold mining settlement.

According to a Ministry official, the North West District suffered a dramatic increase in the incidence of malaria in the year ended Sept. 30, 1983, over the same period of the previous year.

The number of diagnosed cases rose from 96 to 532.

In the Cayuni/Mazaruni area, the increase was from 49 cases to 282 cases.

In the Rupununi, which has long been the biggest problem area, a decrease in the number of detected cases was recorded, from 1,140 to 860.

This decrease may be partly explained by the fact that the Control Department concentrated on spraying rather than on detection work.

One of the types of malaria found in the Rupununi is falciparum, which is often fatal, as it causes cerebral malaria.

The most common type, however, found in the forest area is the vivax. This responds to treatment by cloraquin and primoquin. These drugs, like so many others, are in short supply and new supplies depend on the availability of foreign exchange.

The malaria control department of the Ministry of Health, moreover, had its allocation for expenses, other than salaries, slashed by 2/3rds last year, from \$1 million for the previous year to between \$300,000 and \$400,000 for 1983.

Further cuts are expected this year as the government strives to balance its budget.

The Department's biggest constraint due to the reduction of its budget is lack of transport for field work--spraying and testing.

Fortunately, thanks to the work of Dr. Giglioli, the efficient carriers of malaria on the coast have been eradicated.

Mere nuisance type mosquitoes and the culex mosquito, carrier of filaria, are plentiful on the coast. And so is the Aedes Aegypti, the carrier of the dreaded yellow fever and dengue fever.

Spraying is directed mainly at these mosquitoes.

Insecticide is in short supply, but it is hoped that more supplies will be made available in the near future.

Budget cuts seem to have also affected the gathering of data and compilation of statistics. Those available are insufficient to give a true picture of the incidence of malaria, but all indications are that the disease is on the increase and will spread further with the reduction in control work, due to lack of funds.

CSO: 5400/7536

STATISTICS ON MALARIA, ENCEPHALITIS GIVEN

New Delhi PATRIOT in English 12 Jan 84 p 5

[Text]

A total of 638 cases of Japanese encephalitis and 238 deaths were reported in the country up to October during 1983, as compared to 3516 cases and 1261 deaths during 1982, reports PTI.

During 1983, Andhra Pradesh (87) Karnataka (78) and Tamilnadu (26) accounted for 191 out of 238 deaths. Bihar reported another 34 deaths. In the previous year, West Bengal and UP had accounted for the maximum number of cases.

The National Institute of Communicable Diseases (NICD) has investigated a number of these outbreaks over the past few years and found that the cases were usually wide-spread, affecting several contiguous districts. They occurred mostly, among children and young adults.

Even though the epidemics are of short duration the fatality rate of the cases is rather high. Outbreaks occur during the monsoon and in rural surroundings usually.

The country is at present using an imported vaccine, considered to be of limited use as it affords protection for only a short duration. Besides, its high cost does not permit wide spread use.

The year 1983 also saw a

spurt in outbreak of malaria and deaths due to this disease in Uttar Pradesh, particularly Shohjahanpur district. The incidence of malaria increased in the State by 29 per cent during the year.

Investigations by Central teams have revealed several shortcomings in the functioning of the State health set up.

The director of the National Malaria Eradication Programme (NMEP) has reported that blood slide collection was declining in the State. Key posts of district malaria officers were vacant and the spraying operation was inadequate.

The directors of NMEP and NICD who visited Shajahanpur concluded that since blood slides had not been collected by health workers from the deceased persons before their deaths, it could not be confirmed that deaths numbering over 200, were due to malaria.

Again, the records of the PHC, Neghoi, one of the worst-hit areas showed the blood slide positivity rate at 4.18 and the percentage of falciparum (cerebral malaria) cases at 1.81. But the mass blood survey carried out by a team of the regional office of the Health and Family Welfare Department found the positivity rate to be as high as

73 per cent and the percentage of falciparum cases 64.23.

A large number of deaths were in the ultimate analysis, written off as possibly due to malaria associated with severe anaemia, malnutrition, worm infestation and pulmonary tuberculosis in some cases.

However on the whole the incidence of malaria in the country has registered a decline. A total of 11.57 lakh cases were reported up to November during 1983, as against 16.13 lakh during the corresponding period in 1982.

The reported incidence and the number of deaths due to Malaria in 1982 were 21,60,447 and 166 respectively as against 26,66,244 and 170 in 1981 and 28,96,000 and 207 in 1980. Falciparum cases, in the country came down from 7,53,713 in 1976 to 5,38,640 in 1982.

The P Falciparum type of malaria has shown a certain amount of resistance to the commonly used anti malaria drug Chloroquine, in different parts of the country.

The cases are now being treated with substitute drugs like a combination of pyrimethamine and long action sulpha.

BRIEFS

TAMIL NADU CHOLERA DEATHS--KUMBAKONAM, Jan. 8 (PTI)--An outbreak of cholera has been reported in Tiruvudaimarudur village and Kodavasai taluk in Thanjavur district, and the health authorities today said four deaths had so far occurred. Ten persons have also been hospitalised. Meanwhile the authorities are taking all steps to prevent the epidemic from spreading. Tiruvudaimarudur and Kodavasai were the worst-affected in the recent devastating floods in Tamilnadu. [Text] [New Delhi PATRIOT in English 9 Jan 84 p 1]

MONKEY FEVER DEATHS--BANGALORE, Jan. 8 (UNI)--Monkey fever has again struck Malnad area in Karnataka, claiming 18 lives in the last fortnight. Official sources told UNI the dreaded disease was unique to Karnataka and had not been reported from anywhere else in the world. More than 1,500 cases were reported from Belthangady taluk in Dakshina Kannada. last year of which 100 proved fatal. A cure for the epidemic which has been taking a substantial toll every year in the region since 1952, still eludes the medical profession. The National Institute of Virology at Pune has evolved a vaccine which gives "only [6]0 per cent results", the sources said. Incidence of the disease, also called the "Kyasanur forest disease" because it occurred first in the Kyasanur forests of Shimoga district, has also been reported from Honnavar and Bhatkal in Uttara Kanada district and Belthangady. The sources said the disease would continue to plague the region for the next five months and subside with the onset of the monsoon. Twentyseven monkey deaths were earlier reported in Belthangady and in Honnavar. Most of those affected are the poor who go to nearby forests to collect firewood. The sources said the vaccine which gives symptomatic cure was in short supply. Efforts by the department to locate a permanent vaccine manufacturing unit at Shimoga were still to bear fruit. [Text] [New Delhi PATRIOT in English 9 Jan 84 p 4]

MEASLES DEATHS REPORTED--GORAKHPUR, Jan 25 (PTI)--Seven children in the age-group between two to twelve died of measles in Mohaddipur area here during the last fortnight, according to official sources. The epidemic raising in and around the town and nearly 300 cases have been detected so far. [Text] [New Delhi PATRIOT in English 28 Jan 84 p 8]

BENGAL LEPROSY STATISTICS--CALCUTTA, Feb 1 (UNI)--West Bengal has the highest number of leprosy stricken people in the eastern region. It has 380,000 of them, followed by Bihar's 339 000 and Orissa's 237,000. Orissa, however, has the highest prevalence rate with 10.80 per thousand population compared to West Bengal's 8.58 and Bihar's 6.02 according to official sources. [Text] [New Delhi Patriot in English 2 Feb 84 p 5]

INDONESIA

BRIEFS

DENGUE FEVER CASES--The district chief of Probolinggo has confirmed that until 10 February, a total of 10 children aged under 15 have been hospitalized for dengue hemorrhagic fever at the Waluyo Jati hospital at Kraksaan town. Later, it was reported that 2 of the 10 children treated at the hospital had died. [Summary] [BK260930 Jakarta MERDEKA in Indonesian 17 Feb 84]

CSO: 5400/4392

INFECTIOUS HEPATITIS EPIDEMIC SPREADS IN SCHOOL

Tel Aviv YEDI'OT AHARONOT in Hebrew 1 Feb 84 p 8

[Article by Dvorah Namir: "Infectious Hepatitis Epidemic in the Yad Rambam Moshav's Primary School"]

[Text] An infectious hepatitis epidemic has broken out among the primary school pupils of the Yad Rambam moshav near Ramle. Thus far some 20 children with the disease have been reported to the district health office. Two of them were hospitalized in the "Asaf Harofe" hospital and the rest are getting medical treatment at home.

The focus of the disease's infection, apparently, is the school's rest-rooms, which have been without water for more than a month. One of the mothers explained: "Just a week ago workmen from the Gezer regional council came and said that there was a leak, and therefore the water did not reach the toilet bowls. They dismantled the pipes, but in the meantime work stoppages broke out and they walked off the job without completing it." A representative of the parents' committee revealed that the little children--who cannot control themselves until noon--answer the call of nature in any available corner. Last week alone, three new cases of hepatitis turned up. "We are demanding immediate action to eliminate the epidemic," the mother said.

Dr 'Alma Avni, head of public health services in the Ministry of Health, verified that a current report has been received on the instances of infectious hepatitis that have turned up in the school at Yad Rambam and on the problem with the water pipes. Today the local doctor of the Ramle district and a nurse are leaving for the Moshav with a large supply of vaccine against the disease (gamma-globulin), which will be given to all the children in those classes in which children have become sick. Also, "we will give the vaccine to brothers and sisters of the sick children up to the age of 14 and to the expectant women in the town."

Today a hygienist from the health ministry is to arrive at the school to check out the situation in the area. He was told to make an immediate request of the local council head to file for cease and desist orders against the striking workers and to require them to fix the school's pipes immediately and restore the flow of water to the bathrooms.

The interior ministry responded to the request of the health ministry and permitted any local authority to take out cease and desist orders against the workers--to remove any health obstacle that constitutes a public hazard.

MALAYSIA

BRIEFS

DENGUE CASES IN SARAWAK--More suspected dengue cases have been reported in Sarawak over the past few days. Today 13 such cases were reported, bringing the total number to 228 so far this year. Eight of them are from Kuching, two each from Bao and Serian, and one from Lawas in the fifth division. The worst affected area, the first division, has so far recorded 219 suspected cases of the disease. [Excerpt] [Kuala Lumpur Domestic Service in English 1130 GMT 28 Feb 84 BK]

CSO: 5400/4380

BRIEFS

MORE MALARIA CASES REPORTED--Since the beginning of the year, seven new cases of Malaria have been recorded in the Plaine Verte and Valle Pitot regions, in Port Louis. Other cases have also been reported in Cite Vallijee. Stagnant water on flagstones, high humidity and high temperatures as expected: all the conditions are combined, following the passage of the cyclone Bakoly, to favor the proliferation of mosquitoes, vectors of malaria, an illness that has never been totally eradicated in Mauritius despite the efforts of the authorities concerned. The Health Ministry has issued communiques through the press and on the airwaves, encouraging the population to observe the usual precautions to forestall an epidemic. Despite the seven cases recorded in Post Louis, the ministry has the situation under control. The mayor of the capital, Mr Bashir Khodabux, told "The Mauricien" that the municipality of Port Louis, in response to a request from the Health Ministry, has given priority to cleaning up the streets in Plaine Verte and Vallee Pitot. The ministry has begun insecticide spraying operations in these regions. According to information obtained from the ministry, these operations should be intensified starting January 16. However, it must be emphasized that the municipality of Port Louis, after having cleared the streets of rubble, has practically no further funds available to clean up the canals and drains of the city, obstructed by branches and other debris. The municipality is currently negotiating with the Ministry of Regional Administrations to obtain additional funds. [Excerpts] [Port Louis LE MAURICIEN in French 11 Jan 84 p 4] 9825

CSO: 5400/80

BRIEFS

FIRST POSTWAR INCREASE OF SYPHILIS--The Medical Association journal in its latest issue reports an increase of syphilis in Norway. This occurred after a marked decrease in every single year since the Second World War. In the years just after the war, around 2,000 cases of syphilis annually were registered. This dropped to the lowest figure in 1958, when 98 cases were reported. At the end of the sixties there occurred a new increase, which culminated in 1975 with 328 new cases. After that the number again dropped. The curve turned upward again in 1982, when 211 new cases were registered. The high-risk group is mostly comprised of homosexual subgroups. [Text]
[Oslo ARBEIDERBLADET in Norwegian 6 Feb 84 p 3]

CSO: 5400/2514

TUBERCULOSIS PREVENTION GOALS FOR 1981-1990 OUTLINED

Beijing ZHONGHUA JIEHE HE HUXIXI JIBING ZAZHI /CHINESE JOURNAL OF TUBERCULOSIS AND RESPIRATORY DISEASES/ in Chinese No 4, 1983 pp 240-242

/Article: "What is the Main Goal of the Nation Work Plan for Tuberculosis Prevention for 1981-1990?"/

/Text/ Editor's Note: At present, the epidemic situation of tuberculosis in our country is still quite serious, and the sources of infection have spread throughout the country. Preventive work in various areas is very uneven. This situation should be changed quickly. Yet in such a big country like ours with a vast territory and 1 billion people, it is a very difficult and complex task if we want to carry out tuberculosis preventive work rapidly on a nationwide scale so as to improve the epidemic situation quickly. We must mobilize all social forces concerned, and it is only through working with one heart and struggling hard that the task can be accomplished. Therefore, we are publishing the main content of our national work plan for tuberculosis prevention in 1981-1990 to make it easier for everyone--from the health administration leadership at the top to the health care workers at the basic levels--to recognize clearly the problem of the current serious epidemic situation and the existence of tuberculosis and proceeding respectively from their realistic situations, to take steps to begin active and effective preventive work and to struggle for the realization of the various goals mentioned in the plan. We propose that the provinces, cities and autonomous regions of the country have a race to see which province, city or autonomous region reaches their goals first and not come in last in realizing the objectives.

In 1978, the Ministry of Public Health convened the National Conference on Tuberculosis Preventive Work. Then the State Council approved the ministry's "Report Concerning the National Conference on Tuberculosis Preventive Work" (hereafter cited as the report), thereby providing a great boost to tuberculosis preventive work in the nation. The Ministry of Public Health, following the spirit of the Third Plenary Session's policy of the readjustment of the national economy, used the national epidemiological survey of the epidemic situation of

tuberculosis in 1979 as the basis and, after soliciting opinions from all sides, formulated the following national work plan for tuberculosis prevention in 1981-1990 (hereafter cited as the plan).

I.

Ever since the founding of the nation, the party and the government have been very much concerned with the health of the masses. In some of the heavily populated large cities, tuberculosis prevention organizations have been established to train the backbone to carry out key-point collective tuberculosis prevention, while in the rural areas, some trial points were carried out. By the early 1960's, the incidence of disease in large cities declined from more than 5 percent during the early days of liberation to about 2 percent, while the mortality rate declined from 200/100,000 persons to about 40/100,000 persons, which is about the same as that of Japan at that time, and the result was outstanding. But with 10 years of calamity, tuberculosis prevention organizations had been destroyed and tuberculosis preventive work stopped.

After the State Council approved the "report" in 1978, the large numbers of medical personnel were greatly encouraged. In 1979, the Ministry of Public Health organized a national epidemiological survey of tuberculosis. Because of the survey, we basically understood the epidemic situation and developed organizations, strengthened our contingents and promoted the development of preventive work. Under the leadership of party committees at various levels, within the last 2 years we have revived or newly established 15 provincial prevention centers and have newly established 118 prefecture (city) level and 231 county-level prevention organizations throughout the country. The national tuberculosis preventive work, destroyed by the Gang of Four, has again been vigorously developed.

Judging from the results of the national epidemiological survey of tuberculosis, the average national incidence of active tuberculosis in cities and villages is 717/100,000 persons, while the incidence of positive test reactions is 187/100,000 persons. Based on this, there are now about 7 million people with active tuberculosis and 1.8 million patients with positive test results. It is estimated that every year, about 200,000 people die of tuberculosis. All these show that at present, the epidemic situation of tuberculosis is still very serious.

Through the survey, we can also see that the development of national tuberculosis preventive work is still very uneven: about 80 percent of the rural areas still have not begun tuberculosis preventive work. Up to now, there are 5 provinces and autonomous regions which have not yet established provincial tuberculosis prevention centers; in the whole country, there have been established only 223 tuberculosis prevention organizations in prefectures and cities under the jurisdiction of provincial governments, and only 358 in 2,136 counties, while 80.3 percent of the counties are without tuberculosis prevention organizations. Judging from the results of prevention, they have been highly unsatisfactory: the number of patients receiving repeated treatment and those with chronic hollow fibers are still increasing, resulting mainly from the inability to insist upon the rational use of medication and the termination of treatment; the promotion of BCG vaccination in rural areas has not been widespread enough

and the quality of vaccination is low, while there are still many cases of children with tuberculate meningitis. All the above questions demand prompt solutions.

II.

Based on the aforementioned serious epidemic situation and existing problems, the plan proposed the following demands and objectives:

It demands that provinces, cities and autonomous regions, using the epidemic situation at the time of the 1979 epidemiological survey as the base, should, by 1990, reduce the incidence of tuberculosis by 30-50 percent, the national morbidity rate from 717/100,000 persons to 400/100,000 persons and the incidence of positive test results from 187/100,000 persons to 130/100,000 persons.

Taking into consideration the differences in foundation in preventive work in various areas, the demands for different areas are therefore different. Provinces, cities and large industrial, mining and communication enterprises, with relatively good original foundations and sound organizations, should achieve the above objectives ahead of time; those provinces, cities and autonomous regions with organizations that have been established since 1978 should exert themselves to achieve the objectives; and those outlying provinces and prefectures with no organizations at present should actively create the conditions to struggle hard to achieve the objectives.

By 1985, the tasks and concrete demands are:

1. To establish sound provincial tuberculosis prevention centers in 1 or 2 years and, based on this, to develop gradually the three-tiered provincial, prefectural (city) and county network of tuberculosis prevention.
2. To establish in 2 to 3 years a sound system of registration and reporting on the epidemic situation in areas where tuberculosis prevention organizations have been established (including enterprise prevention centers), and to report to the Ministry of Public Health in accordance with ministry forms.
3. The rate of regulated intake of medication for first treatment of patients discharging tuberculosis germs should reach 90 percent, and after the whole course of treatment, the negative rate of test results for sputum should reach 80 percent in the rural areas and more than 90 percent for the cities.
4. The rate of BCG vaccination for newborns should reach 80 percent in the countryside and 90 percent in the cities; the rate of revaccination for newborns and children who show positive test results in re-examination after 12 weeks should reach 75 percent in the rural areas and more than 85 percent in the cities.

III.

In order to achieve the above objectives, the plan also proposes the following concrete preventive measures:

1. To establish or strengthen tuberculosis prevention centers at all levels: following the spirit of the "report," the health administrative departments at various levels should include tuberculosis preventive work in the total health work plan. The national tuberculosis prevention research center and branch center at Beijing and Shanghai, respectively, are centers for research in tuberculosis preventive work and technical guidance and should be strengthened in 1 to 2 years. Under the leadership of the Ministry of Public Health, they will revise the plans and unify the methods for national tuberculosis preventive work, compile tuberculosis prevention handbooks, edit and prepare unified teaching materials for the country, take turn in training the backbone contingent of prevention in the provinces, compile unified patient registration cards and epidemic situation reports as well as investigate, supervise and evaluate the actual development of and the results of preventive work.

All areas should quickly establish or strengthen provincial, prefecture (city) and county tuberculosis prevention centers. The county-level tuberculosis prevention center is the foundation for the thorough implementation of rural tuberculosis preventive work and, under the leadership of the local health bureau, must achieve administrative independence with highly capable personnel and fiscal autonomy and become the organizer and administrative leader in tuberculosis prevention in the work areas. Below the county level, there should be close links with basic medical and health organizations, making sure that specific persons will be in charge concurrently so that from top to bottom, the preventive network will be gradually established.

The function of existing beds in tuberculosis hospitals should be fully developed. Tuberculosis hospitals should broaden prevention and share part of the area's preventive work. In areas without tuberculosis hospitals, under the leadership of and after consultation with local health administrative leadership, the admittance of tuberculosis patients by comprehensive hospitals may be arranged.

Departments concerned such as large mines, enterprises, communications, agricultural cultivation and armed forces should also correspondingly establish tuberculosis prevention organizations and be responsible for the respective department's tuberculosis preventive work which should be unified and included in the local preventive network. They should also have close contact with local prevention centers.

Tuberculosis prevention personnel at various levels should maintain relative stability. Every year, the state assigns graduates of universities and secondary and specialized schools to strengthen the tuberculosis prevention centers at various levels.

2. Preventive measures:

A. To grasp changes in the epidemic situation and to establish and strengthen the system of reporting the epidemic situation: based on the national uniformly formulated cards, tuberculosis prevention organizations at various levels should set up a system for tuberculosis registration reporting and treatment referral. We have to furnish knowledgeable professional statistical

personnel to do a good job of reporting the statistics of the epidemic situation. By 1985, provinces, cities and autonomous regions should be able to have the data for the rate and new rate of tuberculosis registration and the rate and new rate of positive test result registration in areas with established prevention centers. The national tuberculosis prevention research center will collect and analyze the epidemiological data and submit them to the Ministry of Public Health every year.

B. To discover affected persons and manage their treatment: discovery of affected persons and antituberculosis treatment are important measures in the management of the spread of tuberculosis. We have to strengthen the voluntary discovery of affected persons and stress practical economic results. First, we have to register, manage and treat those scattered tuberculosis cases that are already discovered. Then we have to begin, in a planned way, the voluntary work of discovering patients so that those discovered will be treated and the treatment will be thorough. In general, we can adopt the method of examining people who are seeing the doctor for an illness and who are suspected and have made contact, or we can use the general survey to discover affected persons.

We should actively begin the work of examining sputum to improve the quality of this work and locate the source of infection as quickly as possible. All comprehensive medical and health care organizations should also stress the work of examining tuberculosis germs in sputum.

The primary target of treatment will be patients receiving initial treatment, and the focus is on the source of infection of patients whose sputum smears are positive and then on those whose smears are negative.

Comprehensive hospitals at various levels should begin pulmonary outpatient departments with professionals in charge, coordinating with tuberculosis prevention centers to promote vigorously nonhospitalized chemotherapeutic treatment. Based on the national plan for unified diagnostic standards and chemotherapeutic treatment, they should adopt various supervisory methods such as the supervision of the intake of medication and the taking of medication by oneself under complete management, so as to develop a practical treatment management system gradually and elevate the rate of regulated intake of medication continuously. In areas with these conditions, patients with positive sputum test results may be hospitalized for treatment for a short period. Patients who have been cured after hospitalization or who require continual outpatient treatment should be responsible for arranging the referral procedure so that they will be referred to local tuberculosis prevention centers to continue receiving complete treatment and management.

C. To do a good job of BCG vaccination: BCG vaccination is an effective measure to prevent tuberculosis, and the focus should be on newborns. The main targets for revaccination are generally students in primary schools or their first year of secondary schools. Various areas can set the age for revaccination according to their respective epidemiological characteristics and concrete conditions.

New university students from outlying or national minority areas, new military recruits and new young workers in factories should be given tuberculin tests. Those with positive results should be vaccinated with BCG. In rural areas where BCG vaccination is not widespread, direct BCG vaccination (hypodermic or dermal) can be used without tuberculin tests.

At present, we do not insist on a uniform method of vaccination. All areas should actively create conditions for the gradual transition to using mainly the hypodermic method. All those who have not received technical training in BCG vaccination should not be allowed to take part in BCG vaccination work. We should stress and improve the cold storage, transportation and distribution of vaccines and use all links to elevate the quality of vaccines and prevent mishaps from happening. We should fix the schedule for the random investigation of the rate of positive test results after 12 weeks of vaccination, sum up the experience and make improvements promptly.

BCG vaccination is an integral part of the children's and youths' immunization program. Epidemic prevention, women and child care and tuberculosis prevention organizations should clearly divide their work, coordinate and work together to do a good job of planning, supply, organization and training. We should establish a sound system for the report of BCG vaccination. In areas where prevention organizations have not been established, epidemic prevention and women and child care departments should divide the work with individual responsibility.

D. To strengthen antituberculosis propaganda and transmit to the masses knowledge of prevention: prevention organizations at all levels should consider tuberculosis prevention propaganda an important part of preventive work, and every professional should view mass propaganda and the transmission to the masses of the knowledge of tuberculosis prevention as a duty to be fulfilled so that propaganda work can be routinized and systematized. Whenever various preventive measures are being promoted in the outpatient departments and during home visits, tuberculosis prevention knowledge should be publicized so that the masses' correct knowledge of tuberculosis can be enhanced and will therefore self-consciously support the implementation of various preventive measures.

Professionals should provide more often newspapers and magazines with popular tuberculosis prevention knowledge, and professional organizations can publish antituberculosis pamphlets and posters. They can also use slides, movies, television and radios to publicize to the masses antituberculosis knowledge.

3. To train professional personnel and strengthen the tuberculosis prevention contingent: the national tuberculosis prevention research center and branch center at Beijing and Shanghai will become the national research and training base for tuberculosis prevention and will at fixed times sponsor research and study classes for the professional backbone of prevention centers and other short-term training classes. Professional tuberculosis prevention organizations in provinces, cities and autonomous regions should use the level-by-level training method to train personnel for professional organizations at various levels as well as for basic health care organizations. In particular, when the basic knowledge of the profession and the techniques are taught, actual practice and exercises should be arranged and the teaching materials should progressively be

enriched by the content concerning the national plan for tuberculosis prevention. When medical colleges add the study of tuberculosis prevention, experienced personnel in preventive work have the obligation to be responsible for teaching about tuberculosis.

We have to be concerned about the upgrading of professional techniques and the promotion of tuberculosis prevention personnel to higher offices or ranks. Through examinations to test the suitability of one's special training for a job, those who pass should be promoted to higher offices.

4. To strengthen scientific research and continuously elevate the level of prevention: we have to link theory with reality and place the focus of research on those practical problems that need to be solved in preventive work and in order to formulate a national unified plan, to study various practical problems from practice such as the methods for epidemiological organization appropriate to our country, preventive measures, methods and criteria for evaluating and examining preventive work, annual survey of infection rate, the combined use of BCG vaccine and other vaccines and chemotherapeutic treatment plans that are inexpensive and effective and have few side effects and an adequate drug supply.

We have to experiment with the work of monitoring tuberculosis so as to provide experiences for the future development of the monitoring of tuberculosis.

The topic of tuberculosis research should be included in the national, provincial, city and autonomous region's master plan for scientific research, and economic and technological support should be provided.

We have to strengthen the exchange of experiences in tuberculosis research and preventive work and establish a national tuberculosis scientific information network. The Tuberculosis Scientific Association of the Chinese Medical Association and the Chinese Antituberculosis Association should strengthen the organization of scholarly exchanges, regularly convene various kinds of regional or national specialized professional conferences and do a good job of publishing the CHINESE JOURNAL OF TUBERCULOSIS AND RESPIRATORY DISEASES, CHINESE ANTITUBERCULOSIS BULLETIN and ANTITUBERCULOSIS IN SHANGHAI.

5. To handle well the supply of drugs and equipments: as for the current, commonly used antituberculosis drugs (including tuberculosis amine), we propose that the departments concerned guarantee supply and raise the quality, while the production department should try hard to lower the costs of such drugs as rifampin, rifamycin, ethambutol and pyrazine acylamine and lower the prices so as to popularize their use. We propose that the biological products department improve the quality of vaccines and before 1985, provide the entire country with freeze-dried BCG vaccine. As for medical microscopes, X-ray machines and accessories, X-ray films, blue-wick needle tubes, small refrigerators and laboratory equipment, their production quality should be raised and the supply guaranteed.

The prevention department should be closely coordinated with the biological products department and the drug and equipment production department to exchange information so that the products will satisfy the needs and the channels for production and the supply will not be blocked.

Public health departments at all levels should, in a planned way, provide the prevention centers at different levels with the newer and more substantial equipment that is needed.

Furthermore, the report also requires that public health departments at all levels guarantee funds for tuberculosis prevention and include them in the health budget for prevention and treatment in order to make overall plans with due consideration for all concerned and for rational utilization so as to guarantee the realization of the plan.

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CSO: 5400/4108

MATHEMATICAL PREDICTION OF EPIDEMIC ENCEPHALITIS B

Beijing ZHONGHUA LIUXINGBINGXUE ZAZHI [CHINESE JOURNAL OF EPIDEMIOLOGY] in Chinese No 5, 1983 pp 308-311

[Article by Ceng Guang [2582 0342] and He Guanqing [0149 6034 3237], Institute of Epidemiology and Microbiology, Chinese Academy of Medical Sciences: "The Trend of Mathematical Prediction of Epidemic Encephalitis B"]

[Excerpts] In recent years, with the rapid development of electronic computer technology, there have been reports of applied mathematical models in the prediction of the prevalence of diseases. Epidemic encephalitis B (hereafter cited as encephalitis B) is an infectious disease, and its prevalence is caused by relatively complex factors. The research into its predicted prevalence not only has significance for the prevention of encephalitis B but will also be useful as a reference in the prediction of the prevalence of other diseases. Chinese and Japanese scholars have already used different research designs and statistical methods to begin their investigation into this topic and have achieved definite results. They are summed up as follows:

II. The Beginning of the Monitoring of the Prevalence of Encephalitis B and Mathematical Prediction

Encephalitis B is a disease with natural epidemic origins prevalent in areas in eastern Asia. Beginning in the 1960's, Japan first strengthened its monitoring of the prevalence of encephalitis B. For example, every year in a planned way, the prefectures of Okayama, Nagasaki and Aichi catch mosquitoes, isolate the virus and begin the evaluation of the hog serum HI antibody or 2-ME allergic antibody. They also conducted a large-scale investigation into the survival of encephalitis B virus through the winter and the ecology of the vector mosquitoes [9-17]. In 1965, the Ministry of Health and Welfare established a monitoring network in various places in Japan and stressed the analysis of the trend of the prevalence of encephalitis B. Ever since the 1970's, our country has also begun in a planned way the monitoring of encephalitis B. For example, the Encephalitis B Prevention Scientific Research Coordinating Group of the eight northern provinces has done a lot of work and carried out many studies of the ecological environment of the mosquitoes of Sandai Huiku, the level of human and hog antibodies and the isolation of virus. In the course of monitoring

encephalitis B, Chinese and Japanese scholars have amassed large amounts of material and data and laid the foundation for the beginning of mathematical prediction. At the same time, the rapid development of electronic computer technology has provided the tools for conducting complicated statistical calculations.

The first to study the mathematical prediction of encephalitis B were Morokata and Osaki of Japan. In 1966, they first made a correlation analysis of the "movement toward the northeast" trend in Japan and the temperatures at various places [18]. Then, between 1967 and 1973, they successively selected such data as meteorological phenomena, hog serum research, the density of mosquitoes, longitudes and latitudes for 3 to 6 years as independent variables to be selected (i.e., independent variables which are included in the initial selection of factors and the use of definite statistical methods to select some of them to construct the equation). The observation value and the number of independent variables used increased gradually from 2 to 40. Indicators for the predicted trend included the morbidity rate in Okayama and various places in Japan, the median date of prevalence of Japanese encephalitis (defined by the author as the number of days beginning from 20 June to the day when 50 percent of hog HI antibodies became positive) and the mode date of prevalence of Japanese encephalitis (defined by the author as the number of days beginning from 20 June to the day with the highest detected positive rate of hog HI antibodies). Because the period adopted for the observation value of independent variables ends mostly in July of that year and from July approaches the peak of prevalence, their research belongs in the area of short-term prediction [19, 20].

In the 1970's, Zhang Kexiang [1728 0668 4382] of our country began research into predicting the morbidity rate of encephalitis B in the province of Liaoning and, at the same time, carried out early and short-term predictions. Early predictions use the meteorological factors of the seasons of the past years and "random combinations" of the morbidity rate of encephalitis B of the last 2 years (i.e., the different combinations resulting from the respective addition, subtraction, multiplication and division of the morbidity rate of the last 2 years) to be independent variables for selection, and the prediction value can be calculated at the beginning of the year. Short-term predictions use the meteorological factors during January to July of that year as independent variables to be selected, and the prediction value can be calculated at the end of July [31]. Zhang Kexiang has also stressed the study of the correlation analysis of the prevalence of encephalitis B and meteorological factors and used the findings to refute the past sweeping and confused idea that encephalitis B becomes prevalent more easily if summer temperatures are high and rainfall plentiful [32].

Also working in the development of the mathematical prediction of encephalitis B in our country are Guo Cunsan [6753 1317 0005], the Hygiene Epidemic Prevention Stations of Taiyuan, the Linfen area and the Xin County area and Qu Mingyuan [1448 2494 0337]. Guo Cunsan uses the meteorological factors from January to June of the year as independent variables to be selected,

and his work belongs in the area of short-term prediction; the rest all use meteorological factors from January to December of the previous year as independent variables to be selected, and their work belongs in the area of early prediction. The time limit for the utilization of data in various places in our country is 6 to 21 years and is longer than that of Japan; the dependent variables predicted are the morbidity rates of encephalitis B for provinces, prefectures and cities, respectively [33-38].

Both the Japanese and we stress the function of meteorological factors as independent variables to be selected. The categories of meteorological factors used are about the same and include average temperatures, amount of precipitation, relative humidity and sunshine time. Most of the scholars in our country use only meteorological factors as independent variables because of the lack of other accumulated data.

III. The Application of Statistical Methods

There are two methods of sieving factors that have been used in our country for the mathematical prediction of encephalitis B. The first is the method used by Zhang Kexiang and Guo Cunsan: they first make a single correlational sieving of independent variables, and after squared deviation analysis, determine the regression model to be used in the prediction [31-33]. It can be said that the basis for this method of calculation is single-factor analysis. The other method is the sequential-regression analysis used in areas such as Shanxi and Baoding [36-38]; this is a gradual-regression method of non-parametric statistical calculation. The calculation is relatively simple, but it seems to be not wholly reliable in application.

IV. Prediction Results and Evaluation Standards

The way prediction results are presented by various researchers can be divided into the two methods of estimation point value and the prediction value of reliability limits (these are the two methods using the regression model to show prediction results: the first refers to the expression of the prediction value with a definite value, while the latter uses a definite range of probability to calculate the limits of prediction value). At present, most researchers only use the estimation point value to present prediction results. It is generally believed that the closer the estimation point value is to the actual morbidity rate, the higher the accuracy of the prediction. Based on this evaluation standard, the estimation point value prediction results of Morokata and Osaki in 1973 and Qu Mingyuan in 1978-1979 appear to be relatively satisfactory. Our country's Zhang Kexiang also uses estimation point value to express predicted results and in his evaluation of his prediction results for the morbidity rate of encephalitis B for Liaoning in 1976-1978, he has proposed the evaluation method of "gradation." This will use the "average year's morbidity level" of 15/100,000 of population (this is the sum of the average morbidity rate for encephalitis B in the province for 29 years and is twice the standard deviation) as the evaluation standard [32]. If both the estimation point value and the actual morbidity rate value exceed or fall below 15/100,000

of population, it will be considered to have conformed to the prediction no matter how great the difference of the two values is. Conversely, if between the estimation point value and the actual morbidity rate, one is higher and the other is lower than 15/100,000 of population, then it will be considered not to have conformed to the prediction no matter what the difference of the value is. Using this evaluation standard only, the prediction result has been satisfactory. After 1970, Morokata and Osaki have used the value of reliability limits as the standard for evaluating the accuracy of prediction (strictly speaking, what they have used is the approximate range of reliable prediction limits). If the actual morbidity rate is within the prediction range, then it is considered to conform to the prediction; otherwise, it is considered not to have conformed. Because this standard can generally reflect the probability of the prediction and the relative range, it appears to be more objective and reliable than the use of only estimation point value or the evaluation standard of "gradation." In 1973, the actual values of their prediction of morbidity rates for the southern and northern parts of Okayama were all within the prediction range [23], and can be viewed as a relatively successful prediction.

Because of the differences in such aspects as time, place, epidemic situation and evaluation standards, it is difficult to compare strictly the prediction results of the various groups. But it can be clearly seen that the errors between many prediction values and actual values are still relatively great, while the error of standard estimation equation is also great. (The equation is an indicator of investigating the precision of the regression equation: the smaller its value, the more precise the regression equation; the converse is also true. The computing formula is: $S_y = \sqrt{\frac{Q}{n-m-1}}$, where S_y is the standard estimation error, Q is the estimated combined remaining deviation, n is the number of samples and m is the number of independent variables.) The accuracy of prediction still has to be improved.

V. Concluding Remarks

The objective of the mathematical prediction of encephalitis B is an accurate early prediction so that it can be used in actual preventive work. Moving from the present standard of prediction to the application to encephalitis B preventive work still requires a difficult process of investigation. The development of the prevention and monitoring of encephalitis B will inevitably provide new topics for the development of mathematical prediction. This author believes that only if we continue our efforts in the path of investigation and continue to amass data and improve prediction methods rationally, we would be able to achieve a breakthrough in elevating the standard of prediction.

Table 1. General Survey of the Research in the Mathematical Prediction of the Intensity of Encephalitis B

Researcher	Dependent variables	Independent variables	Time limits of materials	Statistical method	Time of prediction	Expression of prediction value and evaluation standard	Year of prediction
Morokata, Osaki (1973)	Morbidity rate of encephalitis B in Okayama and other places in Japan	Sunshine time from Oct last year to July this year; average temperature; amount of rainfall; longitudes and latitudes; day when 50% of hog HI antibodies become positive; positive rate of hog HI antibodies at end of July; density logarithm of mosquitoes	6 years	Progressive Regressive Free selection	Early August	1) Estimation point value 2) Approximate range of reliable prediction limits	1 year (1973)
Zhang Kexiang	Liaoning's morbidity rate of encephalitis B	Early prediction: random combination of morbidity rates of last 2 years; seasonal average of temperatures, amount of precipitation and sunshine time last year Short-term prediction: average temperature, amount	13 years	Correlation analysis and multi-regression	Early prediction: beginning of year Short term: early August	Estimation point value	3 years (1976-1978)

[continued on following page]

(Table 1--Continued)

<u>Researcher</u>	<u>Dependent variables</u>	<u>Independent variables</u>	<u>Time limits of materials</u>	<u>Statistical method</u>	<u>Time of prediction</u>	<u>Expression of prediction value and evaluation standard</u>	<u>Year of prediction</u>
Guo Cunsan	Jilin's morbidity rate of encephalitis B	of precipitation and sunshine time from January to July of that year	21 years	Same as above	Early July	1) Estimation point value 2) Unknown	3 years (1977-1979)
Taiyuan Hygiene & Epidemic Prevention Station	Taiyuan's morbidity rate of encephalitis B	Amount of rainfall, sunshine time and average temperature from January to December of last year	14 years	Same as above	Beginning of year	Estimation point value	2 years (1977-1978)
Linfen Area Hygiene & Epidemic Prevention Station	Linfen area's morbidity rate of encephalitis B	Same as above	6 years	Sequential regression analysis	Same as above	Same as above	2 years (1978-1979)

(Table 1--Continued)

<u>Researcher</u>	<u>Dependent variables</u>	<u>Independent variables</u>	<u>Time limits of materials</u>	<u>Statistical method</u>	<u>Time of prediction</u>	<u>Expression of prediction value and evaluation standard</u>	<u>Year of prediction</u>
Xin County Area Hygiene & Epidemic Prevention Station	Xin County area's morbidity rate of encephalitis B	Average temperature, amount of precipitation, relative humidity, sunshine time from January to December of last year	16 years	Same as above	Same as above	Same as above	1 year (1978)
Qu Mingyuan	Baoding area's morbidity rate of encephalitis B	Average temperature, sunshine time and amount of precipitation from January to December of last year	15 years	Same as above	Same as above	1) Estimation point value 2) Estimation point value plus or minus 1 time the standard estimation error	2 years (1978-1979)

Table 2. Table of Results of Mathematical Prediction of Intensity of Encephalitis B

Author	Year of prediction	Prediction indicator	Equation standard estimation error	Actual morbidity rate (1/100,000)	Prediction estimation point value (1/100,000)	Range of prediction	Remarks
Morokata, Osaki	1969	Okayama and other prefectures' morbidity rate of encephalitis B		0.5	Single regression (average): 4.43 Multi-regression: 3.02		
		Morbidity rate of encephalitis B in southern Okayama prefecture	Equation 1:1.53 Equation 2:1.35	0	Equation 1: 0.9602 Equation 2: 0.8430	-0.4598-2.3802 -0.5070-2.1930	Approximate range of reliable prediction limits
	1973	Morbidity rate of encephalitis B in northern Okayama prefecture	Same as above	0	Equation 1: -0.7948 Equation 2: -1.3581	-2.2148-0.6252 -2.7081-0.0081	

[continued on following page]

(Table 2--Continued)

<u>Author</u>	<u>Year of prediction</u>	<u>Prediction indicator</u>	<u>Equation standard estimation error</u>	<u>Actual morbidity rate (1/100,000)</u>	<u>Prediction estimation point value (1/100,000)</u>	<u>Range of prediction</u>	<u>Remarks</u>
Zhang Kexiang	1976	Liaoning's morbidity rate of encephalitis B		1.87	Early: 12.12 Short-term: 11.68		Evaluate conformity of prediction according to "gradation"
	1977			2.03	Early: 9.72 Short-term: 8.62		
	1978			1.60	Early: 13.25 Short-term: 12.20		
Guo Cunsan	1977	Jilin's morbidity rate of encephalitis B		0.32	3.24		
	1978			0.22	4.77		
	1979			0.07	2.78		
Qu Mingyuan	1978	Baoding area's morbidity rate of encephalitis B	3.32	1.48	2.49		
	1979			5.56	8.59		
Taiyuan Hygiene & Epidemic Prevention Station	1977	Taiyuan's morbidity rate of encephalitis B		2.25	4.60		
	1978			0.75	14.36		

BIBLIOGRAPHY

1. Sartwell, P., AMERICAN JOURNAL OF EPIDEMIOLOGY, Vol 103, p 138, 1976.
2. Dietz, K., ALTA UTAH, 8 July 1974.
3. Fine, P. E., AMERICAN JOURNAL OF EPIDEMIOLOGY, Vol 106, p 87, 1977.
4. Frost, W. H., Ibid., Vol 103, p 141, 1976.
5. Molineaux, L., et al., LECTURES ON EPIDEMIOLOGICAL MATHEMATIC MODELS, 1-18 (Unpublished data) Shanghai, 1980.
6. Dietz, K., et al., BULLETIN OF THE WORLD HEALTH ORGANIZATION, Vol 50, p 347, 1974.
7. Becker N., "The Use of Epidemic Models," BIOMETRICS, Vol 35, p 295, 1979a.
8. Cvjetanovic, B., et al., BULLETIN OF THE WORLD HEALTH ORGANIZATION (SUPPLEMENT 1), Vol 56, p 1, 1978.
9. Inatomi, S., et al., OKAYAMA-IGAKKAI-ZASSHI (SUPPLEMENT), Vol 78 (1), p 75, 1966.
10. Inatomi, S., et al., Ibid., p 84, 1966.
11. Inatomi, S., et al., Ibid., Vol 79 (1, 2) pp 1-2, 14, 1967.
12. Wada, Y., et al., TROPICAL MEDICINE, Vol 12 (2), p 79, June 1970.
13. Hayashi, K., et al., Ibid., Vol 15 (4), p 214, December 1973.
14. Wada, Y., et al., Ibid., Vol 11 (1), p 37, 1969.
15. Makiya, K., et al., JAPAN JOURNAL OF SANITARY ZOOLOGY, Vol 22 (3), p 186, 1971.
16. Wada, Y., TROPICAL MEDICINE, Vol 14 (1), p 41, 1972.
17. Wada, Y., Ibid., Vol 16 (4), pp 171-199, March 1975.
18. Ogata, M., et al., OKAYAMA-IGAKKAI-ZASSHI, Vol 80, SUPPLEMENT 1, 1968.
19. Ogata, M., et al., Ibid., 81 SUPPLEMENT 11, p 23, 1969.
20. Ogata, M., et al., Ibid., 81 SUPPLEMENT 12, p 19, 1970.
21. Ogata, M., et al., Ibid., 83 SUPPLEMENT 13, p 1, 1971.
22. Ogata, M., et al., Ibid., 84 SUPPLEMENT 14, p 11, 1972.

23. Ogata, M., et al., Ibid., 86 SUPPLEMENT 16, p 11, 1974.
24. Ogata, M., et al., ACTA MED OKAYAMA, Vol 28, p 125, 1974.
25. He Guanqing [0149 6034 3237], "The Foundation, Development and Use of Epidemiology," NEIBU ZILIAO, 1981.
26. Geng Guanyi [5105 6306 0001], ed., "Liuxingbingxue" [Epidemiology], Vol 1, pp 209-221. People's Hygiene Publishing House, 1980.
27. Shanghai First Medical College, trans. and ed., "Liuxingbingxue shuxue moxing cankao ziliao. WHO liuxingbingxue shuxue moxing taolunban" [Reference Materials on Epidemiological Mathematical Models. WHO Seminar on Epidemiological Mathematical Models], pp 1-170. Shanghai First Medical College, 1980, 10.
28. Xu Dalin [1776 1129 7792], "Guowei yixue liuxingbing chuanranxingxue" [Medical Epidemiology and the Study of Infectious Diseases Outside China], Vol 3, p 114, 1979.
29. Zhang Kexiang [1728 0668 4382], LIUXINGBING FANG ZHI YANJIU, Vol 4, p 247, 1978.
30. Ningxia Hui Autonomous Region Hygiene and Epidemic Prevention Station, Ibid., Vol 2, p 99, 1976.
31. Li Shouzhang [2621 1343 2973], Ibid., Vol 1, p 10, 1974.
32. Zhang Kexiang [1728 0668 4382], LIUXINGBINGXUE ZAZHI, Vol 1 (2), p 72, 1980.
33. Guo Cunsan [6753 1317 0005], et al., "Chuanranbing yucefa yanjiu" [A Study of the Methods To Predict Epidemic Diseases], pp 1-21, 1980 (Collection of Special Studies on Jilin Province's Participation in the First National Epidemiological Conference).
34. Shanxi Hygiene and Epidemic Prevention Station, "Concerning the Introduction to the Use of Sequential-Regression Analytical Methods To Predict Encephalitis B Epidemic Conditions," BEIFANG BASHEN QU YINAO FANGZHIKE XIEZUOZI DI SI CI HUIYI ZILIAO, 1979.
35. Taiyuan Hygiene and Epidemic Prevention Station, "Concerning the Investigation Into the Prediction of the Intensity of Encephalitis B Through the Use of Regression Analysis," Ibid., 1979.
36. Linfen Area Hygiene and Epidemic Prevention Station, "Using the Sequential Regression Analysis To Predict the Trend of the Prevalence of Encephalitis B," Ibid., 1979.

37. Xin County Area Hygiene and Epidemic Prevention Station, "Using the Sequential-Regression Method To Predict Epidemic Encephalitis B," Ibid., 1979.
38. Qu Mingyuan [1448 2494 0339], "Epidemiology of Encephalitis B and the Use of Sequential Regression for Early Prediction, Exchange of Medicine and Hygiene." (Selected papers on Hebei Province's Participation in the National Epidemiological Conference), 1980.

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BRIEFS

BEIJING IMPROVED PUBLIC HEALTH STANDARDS--Beijing, 28 February (XINHUA)--The life expectancy for men in Beijing averaged 70.75 and that for women 73.67 towards the end of 1982, today's BEIJING DAILY reports. The paper attributes this partly to the city's public health and epidemic prevention network, which boasts 403 centers with 3,800 special health workers. The network covers municipal, district or county and neighborhood or village levels, it says. During the past 3 decades these health workers have vaccinated and regularly supervised and checked on several hundred items, including hygienic conditions in such fields as labor, environment, educational institutions and food as well as protection against harmful radiation. As a result plague, cholera and smallpox, rampant in Beijing before 1949, were eliminated in the early 1950's, and many other infectious diseases, including the childhood diseases of diphtheria, whooping cough, measles, poliomyelitis and encephalitis were also brought under control. Infectious diseases, the city's greatest killers in 1951, ranked 10th on a list of the most common causes of death by 1983, the paper says. [Text] [OW281204 Beijing XINHUA in English 1156 GMT 28 Feb 84]

CSO: 5400/4126

CONJUNCTIVITIS EPIDEMIC REPORTED

More Than 3,000 Cases

Lima EL COMERCIO in Spanish 3 Feb 84 p A-1

[Text] According to a disclosure made by the chief of the Virology Laboratory at the National Institute of Health, Dr Rosario Mendez, over 3,000 cases of conjunctivitis have been reported in Lima during the past few days. She said that, every day, 600 patients are treated in Lima and Callao, noting that the urban sector is the one showing the largest number of cases.

It is recommended that those infected with conjunctivitis take very careful measures to ensure cleanliness and not share towels or other items for personal use.

Also advised is a minimum of 72 hours of leave to avoid infecting others.

Dr Mendez remarked that conjunctivitis is also affecting the population in Huacho, causing conditions with varied features which are being studied.

She said that, in view of the high degree of incidence of the disease, the health sector's epidemiological department is coordinating a series of preventive activities to avoid the spread of the virus, originating in Iquitos, to other sections of the country.

The disease, which is appearing with epidemic features, is not serious, but is very contagious. She said that the preventive measures are essentially sanitary.

Statement by the Health Minister

The health minister, Juan Franco Ponce, for his part, stated that the conjunctivitis epidemic in our capital is being caused by the pollution of the atmosphere, but is due primarily to the fact that the problem of garbage collection has not yet been solved.

He commented that when Lima improves in those two serious areas, the epidemics besetting our capital will disappear, especially conjunctivitis, which is affecting the society at present.

He said that his office was taking precautions and that treatment is also being given, providing special recommendations to prevent the disease from continuing to progress and possibly reach really alarming levels.

The minister also said that he had met with the mayor of Lima with whom he had discussed, among other things, a halting of the service by the buses which give off carbon monoxide and which are the cause of countless illnesses, such as conjunctivitis, for example.

Huacho Residents Affected

Lima LA PRENSA in Spanish 4 Feb 84 p 4

[Text] According to a report given by the ophthalmologist Efrain Vasquez, of the SSP [Peruvian Social Security] Hospital in the town of Huasco, during a clinical talk held yesterday in Callao, 40 percent of Huacho's working population may be affected by the irrepressible epidemic of viral conjunctivitis that has been ravaging several Peruvian cities.

According to the aforementioned specialist, Huacho and Iquitos are the main focal points for the spread of that disease, which has also assumed epidemic features in Callao and a large portion of Lima. He noted that the contaminating focus in Iquitos had come from Brazil, but that it is not yet known for certain what the origin of the Huacho focus is.

Dr Vasquez also stated that, based on the studies that have been made, there are differences in the clinical processes of the disease, depending upon the focuses from which they originate. He said that the one in Iquitos seems to be a more simple viral conjunctivitis than the one in Huacho, where it is accompanied, in a large percentage of cases, by purulence, slight ocular hemorrhages, fever and general malaise; but in both instances these are surmounted without major consequences.

He also remarked that the epidemic that is rampant in Lima and Callao has mixed features of both focuses.

According to Vasquez, in Huacho about 150 cases are being treated per day, currently, and he estimates that this trend will continue until the end of this month. He said that this research is based on the study of about 3,000 patients, and that it is quite possible that it may be extended to approximately 10,000 cases.

Dr Rosario Mendez, from one of the Health Ministry's viral units, said that one of the locations through which the disease had entered Callao is the naval base, where the oil tanker "Lobitos" had arrived with some of its personnel infected.

Disease Transmitted by Ship's Crew

Lima EL DIARIO MARKA in Spanish 4. Feb '84 p 5

[Text] The conjunctivitis epidemic which is affecting the residents of the capital and other cities is due to the arrival of a Brazilian ship with its crew infected by that disease.

This was reported by the National Institute of Health, through several research physicians, who claimed that, between 23 and 27 November of last year, a merchant vessel whose crew members had conjunctivitis arrived in the river port of Iquitos coming from Brazil.

Those assigned to engage in economic and commercial operations in the Loreto capital infected a large number of its residents.

Subsequently, when the Loreto residents traveled to Lima, they carried the virus and infected the residents of the capital. Similarly, the ship "Lobitos" (also of Brazilian registry) arrived in Callao with its crew members showing red eyes, the most visible feature of conjunctivitis.

The physicians at the National Institute of Health stressed what EL DIARIO had already noted yesterday concerning the danger of loss of vision by some of the patients who do not treat the disease properly.

The general director of the INS, Dr German Battistini, also indicated that the conjunctivitis epidemic is increasing alarmingly, with the average number of those treated per day at each hospital center rising from 200 to 700.

As the specialists stated, the only reservoir for the "4 or 11/14 adeno-virus" (cause of the disease) is man. Furthermore, this virus settles in the entire body, but it prefers the conjunctival area.

In conclusion, they said that those affected should not attend any public gathering (movies, minibuses, work, etc.) because the disease is extremely contagious. They emphasized that the family towel is the best vehicle for contagion.

2909

CSO: 5400/2041

HEALTH COMMISSION PRESIDENT ISSUES WARNING ON TYPHOID

Lima LA PRENSA in Spanish 22 Jan 84 p 6

[Text] Dr Uriel Garcia, president of the Commission of Health and Environment of Metropolitan Lima, warned the public in that capital to be very careful in eating food dispensed by street vendors inasmuch as in the summer, particularly in February, there is a higher incidence of typhoid.

He said that, according to studies over a period of several years, there have been two occasions when the disease has been widespread in Lima.

He went on to say that the first experience of this type begins in November and continues until December inasmuch as the consumption of food prepared by such vendors is greater at that time in view of the holiday season.

He stressed that there are more cases of typhoid in February when people are at the beaches inasmuch as the public consumes food under unsanitary conditions (lollipops, ice cream, snacks in general).

He explained that the manifestations of typhoid, intestinal infection and diarrhea, with subsequent dehydration and danger of fatality among children, are produced by parasites, viruses and 16 types of bacteria.

He repeated that most of the cases are produced by the consumption of food prepared under unsanitary conditions or spoiled by the heat.

To combat this disease, he urged the use of boiled water and soap and the washing of the food and fruit to be eaten.

Dr Uriel Garcia is head of the Department of Pathology of Arzobispo Loayza Hospital.

In addition, he advised that Lima's Office of Health and Environment does not have sufficient funds to engage in a spraying campaign in densely populated areas but that, despite this, spraying campaigns could be carried out and could be paid for by the community involved to eradicate cockroaches, ants, moths and rats which are invading the city.

Dr Garcia also said that there are plagues of mosquitoes in many areas. Moreover, he said that a study will be made through sampling to determine the rat

population in the city which, according to estimates, is considered to be in excess of 6 million.

Lastly, Dr Uriel Garcia urged that the oxidation lagoon project be continued as presently being carried out in the San Juan de Miraflores area to counteract environmental pollution.

8568

CSO: 5400/2037

BRIEFS

RABIES TREATMENT URGED IN AREQUIPA--Arequipa, 20 Jan--Seven persons bitten by rabid dogs have refused antirabic treatment and are in danger of contracting that terrible disease. At Goyeneche Hospital in Arequipa it has been revealed that Juana Torres, aged 21, is presently in Ocona and in mortal danger if she does not submit to rapid treatment. The same rabid dog which bit Torres attacked Lucia Lopez Pinares, aged 17, who died Thursday, 12 January, a victim of rabies. Six other persons are in the same situation as Juana Torres, also bitten by infected dogs, and they too have refused the vaccination treatment. Those persons have been identified as Anastasio Lima, Percy Riquelme, Zulema Silva, Mercedes Gallegos, Jose Zevallos and Jesus Miranda. Goyeneche Hospital's Vaccination Department has sent communications and is urging those individuals to come immediately to that center for treatment, since, if they do not do so, they are sentenced to die. [Text] [Lima LA PRENSA in Spanish 21 Jan 84 p 12] 8568

AREQUIPA RABIES CASES FOR 1983--Arequipa, 27 Jan--In 1983 the Arequipa Southwestern Health Area reported a total of 9,629 persons attacked by rabid dogs, and during the same period, administration 16,767 vaccinations. Nevertheless, only 2,928 residents managed to undergo immunological treatment. This announcement was made by the Office of Public Relations of that organization whose spokesmen also indicated that Dr Victor Raul Nieto Espejo was made head of the Department of Epidemiology of Goyenech Base Hospital. Among the duties to be carried out by that practitioner is a metropolitan plan to eliminate street dogs. This program will be carried out jointly with Honorio Delgado General Hospital, the city of Arequipa and other municipalities of the district, members of the rural police force and personnel of the Bureau of Environmental Sanitation of Arequipa's Hospital Area. [Text] [Lima EL COMERCIO in Spanish 28 Jan 84 p A-12] 8568

CSO: 5400/2039

BRIEFS

TYPHOID EPIDEMIC NEAR DURBAN--Our Durban news office reports that the outbreak of typhoid near the city has reached epidemic proportions with a tenfold increase in the number of patients. A new ward has had to be opened at Wentworth Hospital in Durban, while the Kwazulu government has offered 24 beds at the Prince (Mshiyeni) Hospital, which is being built at Umlazi. A spokesman for the Kwazulu Department of Health says the epidemic is concentrated at (Ndwedwe) and part of neighboring Inanda. The disease is reported to be spreading because inhabitants are apparently unaware of the contamination of all surface water which is currently in plentiful supply after the recent rains. [Text]
[MB170721 Johannesburg Domestic Service in English 0500 GMT 17 Feb 84]

RECURRENCE OF TYPHOID--Durban.--A typhoid epidemic has broken out in the Inanda squatter settlement outside Durban. It is the second epidemic in the past four years in the area medical officers call "Durban's septic fringe". A total of 124 typhoid victims from Inanda and the nearby KwaZulu area of Ndwedwe were being treated at the King Edward VII and Clairwood hospitals yesterday. More than 140 people were treated for the disease at the two hospitals in January. The epidemic has claimed no lives so far, but a KawZulu Health Department spokesman said it was certain that a number of people would die. He said one reason for the new epidemic was that people were drinking water from contaminated pools left after the recent floods. Natal's Director of Health Services, Dr Johan Vorster, said typhoid was considerably worse than colera because it took a long time to cure.--SAPA.
[Text] [Johannesburg THE CITIZEN in English 18 Feb 84 p 10]

CSO: 5400/91

BRIEFS

ADDITIONAL DYSENTERY DEATHS--THE present dysentery outbreak in Sumbawanga Rural District has claimed 23 more lives, according to Shihata. All the victims came from Laela Division. The Acting District Medical Officer, Dr. Levi Msukwa, said in Sumbawanga on Monday that 12 of the deceased who died last week were from Ikozi village. He said nine others had died at Itentula Village and two more at Laela, adding that the deaths occurred between November last year and this month. The latest deaths bringing toll of deaths from dysentery and bilharzia in the district to 80. The forty-seven other people died in Mtowisa Division between September and December, last year. [Text] [Dar es Salaam DAILY NEWS in English 2 Feb 84 p 3]

MALARIA DEATHS--MALARIA Killed 735 people throughout the country between 1982 and last year, Health Minister Aaron Chiduo has said. Ndugu Chiduo told Parliament here on Friday that the figures excluded Dar es Salaam, Dodoma, Shinyanga, Coast and Singida regions, information on which was not obtained. The minister said according to available reports, 414,237 people suffered from malaria in 1982, 338 of whom died. He said 397 out of last year's 309,914 victims died. Ndugu Chiduo was answering a question by Ndugu Mosi Tambwe (National) who wanted a regional breakdown, of malaria victims over the two year period. According to Ndugu Chiduo, Tabora Region led the figures of malaria victims. The highest death toll, at 176, was recorded in Arusha last year. [Text] [Dar es Salaam SUNDAY NEWS in English 5 Feb 84 p 1]

CSO: 5400/96

OFFICIALS REPORT AIDS DEATHS, NEW VD CASES

FL102058 Bridgetown CANA in English 2023 GMT 10 Feb 84

[Text] Port-of-Spain, Trinidad, 10 Feb (CANA)--Nine Trinidad and Tobago homosexuals have died of the dreaded Acquired Immune Deficiency Syndrome (AIDS) since last May and there have been two other suspected deaths from the disease, official sources here said.

The information was divulged to Health Minister Dr Neville Connell as he toured the Caribbean Medical Centre here yesterday.

Officials, however, said the last two cases were not yet confirmed.

The first two instances of the disease in Trinidad and Tobago were diagnosed by local expert Professor Courtenay Bartholomew last February.

By November, eight men had died from AIDS, a new disease first identified in 1981.

AIDS causes a breakdown of the body's immunity to defend itself against infection and affects mainly homosexuals and hemophiliacs.

Health officials also informed the minister yesterday that 15 new cases of herpes had been diagnosed here this year. Last year, the total was close to 40.

Officials also complained about an increase in sexual activity among children (under 14) and young people, as well as among homosexuals, and the consequent problems of curbing the spread of venereal disease.

Caribbean Medical Centre (which deals mainly in venereal disease) medical social worker Miss Reubens Guy said that during her discussion sessions with fifth form students here, she found that many of them were reluctant to tell their parents about their sexual activities and this had resulted in the youngsters contracting venereal disease.

Officials told the minister that as part of its drive to curb the spread of these diseases, the centre was encouraging homosexuals who had VD to give the names of their partners.

This week one homosexual supplied the names of 60 different partners with whom he had sexual relationships in one month, officials said.

TDRC, MINISTRY MONITORING MALARIA'S RESISTANCE TO CHLOROQUINE

Lusaka TIMES OF ZAMBIA in English 14 Feb 84 p 1

[Text]

NDOLA's Tropical Diseases Research Centre (TDRC) is working jointly with the Ministry of Health to monitor the apparent resistance of malaria to chloroquine.

TDRC acting director Dr Frederick Wurapa said some amount of resistance against the drug had been traced among patients and he described the situation as "disturbing".

But Dr Wurapa could not say the extent of this resistance against chloroquine for many years a traditional cure for malaria throughout the world especially in tropical regions where the disease is endemic.

He said the director of the centre, Dr Everiste Njelesani had submitted a report to the ministry so that the two

institutions could "work together to establish a monitoring system" of resistance against the killer disease.

"Some degree of resistance against chloroquine has been found, but we are not able to

say for the moment the extent of this resistance," said Dr Wurapa.

Malaria has been prevalent during the current rain season and is reported to have claimed a number of lives, while doctors in several cases have had to substitute chloroquine with other drugs in order to cure patients.

Dr Wurapa said tests carried so far on the new anti-malaria drug called "mefloquine" had been found to be encouraging.

The drug, which has been developed by the TDRC was undergoing tests in various parts of the world before it could be put on the market, he said.

The TDRC was not doing the testing alone, but with other drug agencies around the globe while the World Health Organisation (WHO) headquarters in Geneva was acting as a catalyst to speed up co-ordination.

And more than 1,000 cases

of malaria were treated by medical authorities in Chisamba area during January following an outbreak of the disease there which has claimed the life of a five-year old child.

Chisamba health centre medical assistant in charge Mr Hillary Tembo said yesterday that the situation was now under control although the supply of drugs was running out.

It was reported at the weekend that villagers in Chief Chamuka's area of Kabwe Rural including Chipembi Girls Secondary School had been attacked by cerebral malaria which has so far claimed the life of Bridget Nalunga.

The girl died at Lusaka University Teaching Hospital where the Chipembi rural health centre referred her case for treatment. She was buried last week.

On Tuesday, 45 students from the school were admitted at the health centre after a malaria bout. — Zana

'MYSTERY BACTERIAL INFECTION' THREATENS DAIRY HERDS

Melbourne THE AGE in English 9 Feb 84 p. 10

[Text]

Victoria's dairy herd is threatened by a mystery bacterial infection that makes cows infertile and causes abortions.

The bacteria, a virulent form of the venereal disease haemophilus somnus, has almost bankrupted several South Gippsland farmers. Fifty herds are known to be infected in South Gippsland and many more cows more are thought to have caught the disease.

The bacteria, spread mainly by bulls, has also been diagnosed in herds at Warragul, Cranbourne,

Echuca, Shepparton and Warrnambool, with isolated cases in New South Wales. The organism has also been found in Tasmanian dairy cattle.

A panel of veterinary officers from throughout Victoria is studying the problem and the Murray-Goulburn Dairy Co-operative has approached the Victorian Government for compensation for farmers.

The senior veterinary pathologist with the Department of Agriculture's Bairnsdale regional laboratory, Dr Len Stephens, said

the organism had been in dairy cattle for some years, but until recently had not caused big problems. "Why it is causing infertility now we don't know," he said. "Nobody knows why it has suddenly appeared."

Dr Stephens said he was concerned about the possibility of an epidemic and had applied to the Australian Dairy Corporation for money to step up research to find a vaccine.

The disease is uncontrolled largely because of difficulty in identifying the virulent strain. He said laboratories had experienced

difficulty in classifying the bacteria into one family.

A survey of several farms with infected herds has revealed that the hardest hit have had serious outbreaks two years in a row.

Several farmers in South Gippsland who sold up to 50 infected cows from herds of about 150 have found this season that the replacements, which cost about \$600 each, have also contracted the disease.

Farmers are paying up to \$700 a month in veterinary bills and are losing about \$2000 a month from their milk production.

FOOT-AND-MOUTH DISEASE RECURRENCE

Bujumbura LE RENOUVEAU DU BURUNDI in French 7 Dec 83 p 6

[Text] A renewed outbreak of foot-and-mouth disease has occurred in certain communes of the Ruyigi province during the last few days and is doing considerable damage on some hillsides, such as the Nganji in the Bweru commune and the Rusengo in the Ruyigi commune. No animal has yet died, however many of them are stricken with the disease.

Because of the highly contagious and episcotic nature of this disease, provincial animal-breeding leaders have asked administrative authorities to take the necessary measures to halt the spread of the plague.

A quarantine has been imposed for this purpose. Until new instructions are issued, no animal may leave or enter the Ruyigi or Bweru communes (the infected zone) without prior authorization of the veterinary authorities. Livestock markets, slaughter-houses and slaughter-house floor operations are suspended throughout the infected zone; any product capable of transmitting the disease, such as milk, meat, butter, skins, etc. is strictly forbidden to pass outside this zone. Also forbidden are the free movement of animals from one hillside to another, dipping and the herding together of the animals [as published]. No animal may graze or circulate within the five km corridor of the infected zones.

The five other communes, Gisuru, Nyabitsinda, Butezi, Kinyinya and Butaganzwa, have been designated as protected zones.

9825

CSO: 5400/52

COLOMBIA

BRIEFS

FOOT-AND-MOUTH DISEASE--The Colombian Agricultural-Livestock Institute, ICA, has decreed a quarantine in Quindio Department to contain the outbreak of foot-and-mouth disease Quindio was detected by officials of that organization. [sentence as printed] ICA estimates that there are approximately 70,000 head of cattle in Quindio. [Summary] [PA242029 Bogota EL SIGLO in Spanish 30 Jan 84 p 16 PA]

CSO: 5400/2047

TRINIDAD AND TOBAGO

AGRICULTURE AUTHORITIES BATTLE AFRICAN BEES

FL082224 Bridgetown CANA in English 1840 GMT 8 Feb 84

[Text] Port-of-Spain, Trinidad, 8 Feb (CANA)--Trinidad and Tobago's agriculture authorities have reported significant progress in ridding the country of the deadly Africanised bees which to date have killed two persons and more than 50 animals here.

The Ministry of Agriculture in a statement said it had destroyed 1,705 swarms of the dreaded bees between mid-1979 and now. The ministry had received 350 reports of bee stings resulting in 53 livestock deaths and two human fatalities.

The official statement came in the wake of reports that the "killer bees" had been sighted at various locations here and had actively stung a group of people on the north west coastal settlement of Point Cumana last month.

According to the ministry, Vivian Voisin who was stung in the Point Cumana attack died of bee stings. The first of the two persons to so die here was a man of Princes Town, South Trinidad way back in September 1982, an agriculture official said.

Acting Chief Technical Officer Mannie Dookeran said the Africanised bees have been present in this twin-island state since July 1979 when the first swarm was officially identified on an estate on Trinidad's southwest coast.

Dookeran said the Africanised bee originated in Brazil where 35 "queens" of the African bee strain were brought for a research programme.

One year 26 of the bees were accidentally released from their hives, Dookeran said, and crossed with the local European bees to produce the much feared "Brazilian bee" or killer bee--names normally given to the Africanised bee.

The bees reproduced rapidly and spread throughout South America, reaching Trinidad via the Orinoco Delta, Venezuela, just 12 miles away.

CSO: 5400/2044

CORRIDOR DISEASE DEATHS SPREAD; CONTROL PROSPECTS NOTED

Lusaka TIMES OF ZAMBIA in English 15 Feb 84 p 7

[Text]

CORRIDOR disease has claimed more than 500 head of cattle since it broke out in Mazabuka, Monze and Choma last month.

Head of the corridor disease control unit in the veterinary services department based in Monze Dr Satwant Singh said the disease which broke out at the beginning of the rainy season could have killed more cattle.

About 320 cattle died in Monze, 167 in Choma mainly around Pemba and 21 in Mazabuka.

The outbreak of the disease follows the critical shortage of

triatrics used in controlling it since the last rainy season.

It was now hoped that the first consignment of dip worth K30,000 would be delivered to Monze by Friday and a similar order was expected shortly afterwards.

Dr Singh said the chemical would be sufficient to treat a total of 63,000 cattle at the rate of 2,000 animals a week at each of the 21 dip tanks in the affected areas. The chemical would last about two months.

The disease had started to spread to other unaffected areas, but with the anticipated

arrival of dip it would be controlled promptly.

Triatics was preferred for its longer protection of the animals against the killer disease, Dr Singh said.

The situation could improve fast as long as the dip was delivered in time.

A cheque for the supply of the first consignment has already been prepared for delivery to a chemical supply company.

Dr Singh said tick activity would stop by the end of March when the rainy season would end.

CSO: 5400/97

BRIEFS

FOOT-AND-MOUTH DISEASE--ZIMBABWE has not been able to export its beef to the European Economic Community since joining the organisation in 1981 because of isolated reports of outbreaks of foot-and-mouth disease, the Minister of Trade and Commerce, Cde Richard Hove, said yesterday. Cde Hove said it was generally agreed in Europe that Zimbabwe's abattoirs were of high standards. "But we wonder why we have different embassies here who feed on the meat and they have not been affected. Since we joined the Lome Convention in 1981 when we were allocated an export quota of 8 100 tonnes of meat a year to Europe, we have not exported even a tonne of beef," said the minister. However, he said veterinary experts were still to arrive in Zimbabwe from the EEC to inspect the meat before it was exported. The beef export would earn Zimbabwe over \$30 million a year. Cde Hove was addressing a Press conference in Harare on his return from Brussels where he attended the African, Caribbean and Pacific countries-EEC ministerial negotiations for renewal of the Lome Convention. [Excerpt] [Harare THE HERALD in English 15 Feb 84 p 5]

CSO: 5400/95

MALAWI

BRIEFS

TRAINING IN PEST CONTROL--Cotton must be sprayed with insecticides at the correct time to ensure a good crop yield, the regional Shell Chemicals representative in the South, Mr. R. K. Chawinga has said. Mr. Chawinga was speaking on Wednesday to 29 cotton scouts and supervisors from estates in the region, who successfully completed a three-day course in cotton scouting and spraying techniques at Zomba Residential Training Centre. The course was organised by the Shell Chemicals to equip participants with good scouting and spraying techniques to boost cotton production in the country. Mr. Chawinga said that the aim behind cotton scouting was to control the use of pesticides by using the most economical spray methods which are important in cotton production. "Good scouting techniques and timing of spray applications ensures better yields," he said. Mr. Chawinga thanked participants for their interest in the course and asked them to translate into action the knowledge gained in their respective estates--MANA [Text] [Blantyre DAILY TIMES in English 13 Jan 84 p 3]

CSO: 5400/90

CROPS RUINED BY SERIES OF DISASTERS, INCLUDING LOCUSTS

Cape Town THE CAPE TIMES in English 17 Jan 84 p 3

[Article by Tony Weaver]

[Text]

WINDHOEK. — Embattled farmers in SWA/Namibia are beginning to ask themselves whether there is not a biblical explanation for the plight in which they find themselves.

Seven lean years of crippling drought, the worst in living memory, looked set to come to an end as a special Christmas present at the end of 1983, when soaking rains fell over much of the territory.

The rain is still falling — but some of the side-effects have been frightening.

With the rains came young grass shoots springing up all over. Some areas in the south resembled the garden counties of England, so green were the fields.

But now a plague of locusts has descended.

And reports coming in from widely separated areas of the territory tell of hail storms such

as have never been seen before.

Koos and Anna Viviers, of the farm Dwessa near Summerdown, 100km north east of Windhoek, lost their maize crop of 100ha and their office collapsed under the weight when they were hit by a sudden hail storm on Saturday.

"It was terrible," Mrs Viviers said yesterday. "One moment there were just these few wisps of cloud in the sky, then everything suddenly went dark and the hail just came down.

"All the hail on the roof slid down onto the roof of our office, which is a long enclosed stoep, and the next minute it just simply collapsed," she said.

Meanwhile, officials of the Department of Agriculture are closely monitoring the effects of a plague of locusts which has descended on

farms in the Khomas Hochland, the grazing lands between Windhoek and the Namib Desert.

Gardens, crops and grazing lands are being stripped bare as millions of young locusts descend and wipe out all available vegetation.

A farm visited by the Africa Bureau at Brakwater, 30km north of Windhoek at the weekend had virtually no grazing left. Hitching poles for horses were crawling with small green grasshoppers.

An official of the Department said that it was not envisaged that poison would be used against the locusts at this stage, as the ecological damage caused by the poison could be greater than that caused by the locusts.

The only good news on the ecological front is that good rains are still falling in some areas.

ARMYWORM OUTBREAKS HAVE OCCURRED IN SIX REGIONS

Dar es Salaam DAILY NEWS in English 7 Feb 84 p 3

[Article by Musa Lupatu]

[Text] ARMYWORM outbreaks reported first in mid-December, last year, are said to have occurred in six regions todate, having destroyed between 30 and 75 per cent of crops in some of affected areas.

Sources in the Ministry of Agriculture said yesterday there was an acute shortage of insecticides and sprayers in the country and that there were fears of very serious outbreaks if the situation continued as it is.

Outbreaks are presently confined to Dar esSalaam, Bagamoyo District in Coast Region and Mtwara. There has also been reinfestation in Hembeti Ward in Morogoro Rural District, according to the sources.

First reports of the pest outbreak came from Ilonga, Kilosa District, in mid-December, last year. By the third and fourth week of the same month, further outbreaks were reported at Chunyu Village, Mpwapwa District, Dodoma Urban and Rural Districts and Kondoa District.

The pest had attacked maize, sorghum, millet and finger millet. But according to the reports there had been good control measures by both peasants and agricultural field staff.

Further outbreaks were reported in January in Mtwara and Lindi, Mpwapwa, Dodoma and Morogoro regions where damage was estimated at 75 per cent at the Kilangali rice farm alone.

Occurrence was also noted in Same and Bagamoyo districts during the month. But much damage was done to crops in Mtwara and Lindi regions. The loss is estimated at 30 per cent.

The Arusha-based pest control unit of the Ministry has warned that there was an acute shortage of insecticides and sprayers in the country and that if things did not change "very serious outbreaks" will occur in Singida, Dodoma, Arusha and Kilimanjaro regions in late February and early May.

Major constraints noted by the pest control unit is that of ultra-low voltage (ULV) insecticides and sprayers apparently because they are not available in the country. According to the reports, 50,000 litres of Fenitrothion 25 per cent ULV would be required.

Further 1,000 ULV sprayers, 10,000 dry cells, five lorries for transportation of the inputs, 5,000 litres of petro/diesel and funds for subsistence allowances would be required.

The control unit has forecast outbreak of the pest in some parts of Kilimanjaro, Arusha and Mara regions in March, and probably some parts of Shinyanga and Mwanza in April.

However, sources in the Ministry have said that containment of the outbreaks would very much depend on the availability of enough chemicals.

Neither the reports nor the sources could say yesterday what the Ministry was doing at the moment to combat the outbreaks in view of the constraints. However, it has been noted that there was need for the Ministry to contact the Food and Agriculture Organisation (FAO) for assistance.

CSO: 5400/96

VIETNAM

BRIEFS

RICE PESTS DAMAGE CROPS--Overall, the transplanted rice is developing well. However, the area of rice plants affected by rice pests, especially rice blast, has reached 14,000 hectares, including 92,000 hectares in the provinces from Thuan Hai southward, 25,000 hectares in Nghia Binh Province, and 10,000 hectares in Quang Nam-Danang [all figures as heard]. Rice pest control is being intensively carried out in the pest-affected areas. [Text]
[Hanoi Domestic Service in Vietnamese 1100 GMT 20 Feb 84]

CSO: 5400/4383

END