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WORLDWIDE REPORT

EPIDEMIOLOGY

No. 335

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AUSTRALIA

BRIEFS

FLU EPIDEMIC—WHAT the Public Health Department describes as a "small epidemic" of influenza has been flourishing in Perth and some country areas over the past few weeks. Many families have been stricken with the virus. It has caused absenteeism in schools, shops and business houses. The department has isolated influenza-A from about 20 patients living in the city and at Kununurra. A department spokesman said yesterday that influenza-A was the more infectious type of influenza which tended to give rise to a more widespread outbreak. The virus was active in Sydney. It resembled the epidemic due to A-type Bangkok influenza of last year. Some of Perth's schools have been badly affected, the worst being Newman College. The principle, Father Valerian, said that 72 of the 250 Year 10 students were away sick on Wednesday, so they had asked all the Year 10 students to stay away for two days. Other schools have reported increased absentees over the past few weeks among students and teachers, but the Director of Schools, Dr H. Pearson, said that the Education Department was not aware of any problem. He said that the department had no central registry of absences and, unless all the teachers or all the students were away, the department would not be notified. Teachers at the Perth Modern School have been staying away with the flu, coming back and then going away again, says the principal, Mr Tom Byers. [Text] [Perth THE WEST AUSTRALIAN in English 20 Aug 83 p 3]

HEPATITIS VACCINATION DISPUTE—CANBERRA.—The National Health and Medical Research Council has recommended that a national vaccination program against hepatitis B should not proceed. The council yesterday issued revised guidelines for the use of a hepatitis B vaccine recently made available in Australia. Council chairman Mr Lawrie Willett said the prime objective of hepatitis B vaccination should be to protect the community from chronic carriers and people at increased risk of acquiring the disease. Mr Willett said the council had made the recommendation in the knowledge that hepatitis B, a virus disease of the liver formerly known as serum hepatitis, was relatively uncommon in the general Australian population. Mr Willett said health authorities in the United States and the World Health Organisation had stated that there was no evidence to indicate that hepatitis B vaccine carried any risk of causing Acquired Immune Deficiency Syndrome (AIDS). [Text] [Brisbane THE COURIER-MAIL in English 18 Aug 83 p 16]

CSO: 5400/7501
BRIEFS

LACK OF MEDICINE NOTED--The UN Children's Fund has launched an appeal for international aid for "urgent assistance" in food and medicine for the people of Chad, affected by war and drought. A statement in Geneva said that there were now recorded 170,000 cases of malaria, measles, amoebic dysentery, tuberculosis, tetanus, bilharzia, meningitis and river-blindness against which there are virtually no medicines on the spot. The UNICEF office in Ndjamenà reports war affected areas as being the north (BET), Ouaddai, Batha and Biltine, while the provinces of Kanem and Guera are affected by climatic conditions. In these six regions there are only nine doctors for nearly 1.5m. inhabitants, of which a million are women or children under 14. Most hospitals have been destroyed by fighting. The World Food Programme is working out a programme of nutrition in collaboration with UNICEF, and immediate needs are estimated at more than 1,000 tins of food preparations. [Text] [London WEST AFRICA in English No 3449 p 2206]

CSO: 5400/5
BRIEFS

HEPATITIS CASES IN IQUIQUE--Iquique, 30 Aug--A total of 421 hepatitis cases have been recorded in this city so far this year while only 20 were uncovered during the same period in 1982. The situation concerns health officials who in conjunction with the city, will undertake a campaign to eradicate centers of infection. In the wake of the alarming outbreak of hepatitis, Dr Jose Behm, chief of environmental hygiene, met with Mayor Marta Marcich to provide her with a graphic explanation of the causes of the viral disease and to ask her for the greatest possible community effort so that the centers of contamination can be eliminated through a general cleanup of the city. Dr Behm recently carried out an inspection and discovered a large number of garbage dumps, roving dogs, gardens fertilized with manure and swarms of flies in new neighborhoods, as well as considerable rubbish on roofs. [Text] [Santiago EL MERCURIO in Spanish 30 Aug 83 p C-7] 9787

CSO: 5400/2132
FAC-NATIONAL GOVERNMENT SIGN ANTI-TRYPANOSOMIASIS AID PACT

Brazzaville MWETI in French 26 Aug 83 p 4

[Text] As part of the effort to step up the war against trypanosomiasis, a financing agreement totaling Fr CFA 30 million was signed on Monday 22 August by the French Aid and Cooperation Fund (FAC) and the Congolese Government. The Congolese side was represented by Comrade Abel Wilson Ndessabeka, secretary general of the Ministry of Cooperation, and the French side was represented by Mr P. Jeanvoine, head of the French aid mission.

The agreement commits France to provide assistance on a nonreimbursable basis to the Congo for the latter's war against trypanosomiasis, a disease classed as one of the "major endemic diseases," the total eradication of which throughout the nation poses a tremendous challenge to our public health service. We note that trypanosomiasis remains a major endemic disease throughout central Africa, where it is in fact, at present, making its appearance in new areas.

Since 1977, FAC has been making significant contributions to the special office for combating trypanosomiasis, an office which is under the jurisdiction of the Department for Combating Major Endemic Diseases in the Congo. The program to eradicate the tsetse fly is under way, in cooperation with a team of entomologists from ORSTOM (Office of Overseas Scientific and Technological Research) from Brazzaville.

The present agreement is intended to finance the acquisition of specific equipment and medications for logistic support to the River Brigade. In addition, a part of the contribution will be dedicated to the struggle against the vectors of the disease and will defray research expenses.

The various activities that will be carried out in this domain will complement the work being done by the Congolese Government itself and will contribute significantly to improving the healthfulness of the environment in which our people live.

9516
CS0: 5400/340
JAPANESE ENCEPHALITIS 'RAGING' THROUGHOUT COUNTRY

New Delhi PATRIOT in English 6 Sep 83 p 1

[Text]

Japanese encephalitis, a viral disease is raging in the country and has claimed 120 people in six States since March last.

The worst-hit State is Karnataka where, according to official reports, about 250 cases were reported till July with 65 deaths.

Other affected States are Andhra Pradesh, Bihar, Tamil Nadu, Manipur and Uttar Pradesh. Except UP, all these States have reported deaths due to the disease. In Andhra Pradesh, 32 people have died, followed by Bihar with 28 deaths, Tamil Nadu 24 and Manipur two.

Japanese encephalitis transmitted by mosquitoes, is very much dominant during monsoons and, according to experts, extends up to early winter months, giving a fear to the Union and State Government health authorities that 'worse' was, perhaps, yet to come.

The disease, warns the Indian Council of Medical Research, 'kills two to five out of every 10 affected individuals and leaves another one or two with damaging effects for life or a greater part of it.'

Another disturbing feature of the disease says the ICMR, is that it is 'increasingly being recognised or identified in newer areas' of the country.

In fact, it says, it had called a two-day conference of experts in November last following confirmation of an outbreak of the disease, "mainly in young adults," in Goa which was hitherto unknown to it.

Among various recommendations that the conference suggested, it called for effective surveillance against the Japanese encephalitis, both at the Central and the State levels.

For this, it suggested that the health authorities should be asked to adopt two types of reports such cases: firstly, incidence of cases which are symptomatically compatible with the disease and, secondly, incidence of cases in which etiological diagnosis had been confirmed by laboratory tests.

It also wanted that as far as possible the laboratory diagnosis should be made in areas where the disease occurs, by setting up peripheral diagnostic centres with ultimate reference made to the National Institute of Virology at Pune.

Another important recommendation made was that a survey should be carried out so as to determine the "risk population" in various States.

Besides these short-term control measures, it also suggested long-term measures and most important being water management for the control of vectors through community participation and public health education.

All these recommendations, some of the senior officials within the Union Health Ministry admit, have remained "pious resolve" as the Centre and the State Governments are passing the buck on each other.

The Centre, it is said, has an easy excuse that the health being a State subject, it cannot do more than make suggestions to the States. And the States, on the other hand, express their helplessness for short of funds.
BRIEFS

MALARIA IN UTTAR PRADESH--MALARIA SURVEILLANCE (PTI): The Uttar Pradesh government has undertaken an intensive malaria surveillance work. Last year, during the intensive surveillance, 65,77,882 blood slides were collected and 1,22,647 positive falciparum cases were found requiring treatment. There was a decline of 13 per cent in Malaria incidence compared to the previous year. This year also the incidence has shown a decreasing trend. [Text] [Bombay THE TIMES OF INDIA in English 30 Aug 83 p 5]

THANE GASTROENTERITIS REPORT--THANE, August 31: Gastro-enteritis has claimed 51 lives in Thane district during the last two weeks, it was officially stated here today. The affected areas are Talasari, Dahanu and Wada talukas, but most of the deaths have occurred in Talasari where the disease is in a virulent form. The district collector, Dr. (Mrs.) Joyce Shankaran, has appointed block development officers as epidemic controlling authorities. Mr. V. Sundaram, divisional officer, Konkan, visited the affected parts yesterday along with the doctor and Dr. S. L. Kharpade, district health officer. [Text] [Bombay THE TIMES OF INDIA in English 1 Sep 83 p 3]

TUBERCULOSIS IN NADIA--KRISHNAGAR, Sept. 10--Despite a move for eradication of diseases under the 20-point programme, tuberculosis is on the increase in Nadia district, according to a senior official. He said that there were about 10,000 patients on the rolls of the district tuberculosis centre here at present. A large number of patients were also getting treatment under private practitioners while a sizeable section was still in disguise. Some people from the bordering districts of Bangladesh were receiving treatment from the district tuberculosis centre incognito. In some parts of the district, particularly in the Ranaghat, Chakdah, Chapra and Bethuandahari areas, many people were afflicted with the disease. Malnutrition and unhealthy living conditions apart, the disease was spreading through contact. It was common among bidi workers, bus operators, agricultural workmen, and cycle-rickshaw pullers living below the poverty-line. It was also found among a large section of teachers. Unfortunately, very few people suffering from TB were living in segregation. [Text] [Calcutta THE STATESMAN in English 2 Sep 83 p 9]

MORE GASTROENTERITIS REPORTED--GASTRO CASES (PTI): About 320 cases of gastro-enterities, were reported in 64 villages and five towns of the district, with 43 of them dead, according to the district health officer here. More than 100,000 people have been inoculated with anti-cholera vaccines in the district though there was not a single case of cholera infection so far, he added. [Text] [Bombay THE TIMES OF INDIA in English 4 Sep 83 p 5]
THANE CHOLERA—AFFECTED—THANE, September 7. All the 13 talukas of Thane district have been declared affected by cholera in an epidemic form, according to a notification issued by the collector and district magistrate, Thane, Dr. Joyce Shankaran, yesterday. The notification followed the district health officer's report to the collector about fresh attacks in different talukas as follows: Thane—two, Kalyan—one, Ulhasnagar—three, Wada—six, Palghar—seven, Dahanu—11, Bhiwandi—three, Vasai—two and Talasai—22. The respective tahsildars, block development officers and the chief executive officers of the municipal councils have been appointed cholera-controlling authorities for their areas. Persons not following their directions or obstructing them is liable to be prosecuted under section 188 of the Indian Penal Code, the notification said. Earlier, only three talukas—Talasai, Dahanu and Walda—were declared affected by cholera. [Text] [Bombay THE TIMES OF INDIA in English 8 Sep 83 p 5]

CSO: 5400/7163
INDONESIA

BRIEFS

DROP IN RIAU MALARIA, DENGUE, CHOLERA—During the session of the Riau regional legislature held on Monday [8 August], Hají Iman Munandar, governor of Riau, said the mortality rate for malaria in Riau has dropped from 8.1 percent in 1979 to 3.8 percent in 1982. For the same years, the mortality rate for dengue fever dropped from 9.3 percent to 7.6 percent and from 6.5 percent to 3.2 percent for cholera. He said credit for the decline in the mortality rates for these diseases should go to government efforts to combat these diseases and to provide medication and information to the public. This was made possible through P2M (control of contagious diseases). In controlling malaria, he said, the primary targets were subdistricts which bordered neighboring countries. During PELITA III [third 5-year development plan] (1979-82), 500,000 persons were protected against malaria through the spraying of 2,000 homes with DDT. In addition 260,000 children were inoculated for tuberculosis and 100,000 others were inoculated for diphtheria, whooping cough, and tetanus and other diseases. [Excerpt] [Jakarta HARIAN UMUM AB in Indonesian 11 Aug 83 p 5] 6804

CSO: 5400/4470
JEZREEL VALLEY SUFFERS FROM BLOOD DISEASE

Jerusalem THE JERUSALEM POST in English 22 Aug 83 p 2

[Article by David Rudge]

[Text] HAIFA. — A relatively high proportion of residents in the Jezreel Valley region suffer from some form of genetic blood disease. That is the conclusion of a survey conducted over the past 15 years by a team of Kupat Holim Clalit specialists.

The findings revealed that of 2,500 patients examined, 1,000 had a mild form of either sickle cell anemia or thalassemia. A further 40 suffered from a severe form of either of the diseases.

The findings indicated that the incidence rate is higher in the Jezreel Valley than other parts of the country, because Arabs and Jews of oriental origin constitute nearly three-quarters of the region's 250,000 inhabitants. The diseases are known to occur most frequently among people from such ethnic backgrounds.

The diseases are perpetuated by inter-family marriages, which are still fairly common in the region. In cases of pregnant women, where both parents are known to suffer from either of the blood disorders, amniotic tests are carried out. If these show that the fetus has a severe form of either disease, an abortion is recommended.

The survey team reported that the genetic blood diseases, which attack and destroy the red blood corpuscles, stem from chromosome disorders which result in abnormal hemoglobin levels.

The physical and mental development of patients suffering from a severe form of either disease is seriously impaired and their life expectancy is short. There is no known cure.

The survey showed that those afflicted with the milder form of either disease tend to be physically weaker and more prone to illnesses than the average person. This manifests itself particularly in children who, according to the survey, visit clinics four times more often than others of their age.

The investigation revealed that doctors sometimes tended to diagnose the problem as a shortage of iron in the blood and prescribed iron injections. This served only to increase the iron content but did nothing to alleviate the problem.

The survey, the first of its kind in the country, was led by Giora Korkash, head of the laboratory at a Kupat Holim clinic in Afula. It proved that the diseases, which are relatively common in Israel, need to be investigated more thoroughly.

A further survey, this time involving 5,000 patients, is planned to try to diagnose more cases of abnormal hemoglobin.

9201
CSO: 5400/4534
BRIEFS

KIBBUTZ MENINGITIS OUTBREAK—On the religious Kibbutz Shluhot, in the Bet She'an Valley, five cases of meningitis were discovered this week. The meningitis bacteria was found in three boys and two girls on the kibbutz. Four are currently interned at Ha'emeq Hospital in 'Afula. The fifth, a girl of 2, is at Hadassah Hospital in Jerusalem, because it was on a trip to that city when the disease was diagnosed. The condition of the 7-year-old girl hospitalized at Ha'emeq is listed as "guarded." Preventive medicine, in the form of a syrup and pills, has been administered to 150 of the Kibbutz Shluhot children under the age of 10. And dozens of parents, teachers and day care personnel, who were in daily contact with the children, have also received treatment. [Text] [Tel Aviv MA'ARIV in Hebrew 29 Aug 83 p 11] 9811

HEPATITIS EPIDEMIC—A hepatitis epidemic has broken out in northern Israel. The source of the epidemic is the village of Tur'an, near Nazareth. It has spread to other settlements in the area: Migdal Ha'emeq and Upper Nazareth. From tests conducted by the Health Ministry, it has been determined that the disease is being transmitted from person to person. [TA270943 Tel Aviv MA'ARIV in Hebrew 27 Sep 83 p 9 TA]

CSO: 5400/4501
FIRST AIDS VICTIM 10-YEAR U.S. RESIDENT

FL281153 Kingston THE DAILY GLEANER in English 22 Sep 83 p 1

[Excerpts] The Ministry of Health reported yesterday the first case of Acquired Immune Deficiency Syndrome (AIDS) to be recognised in the island. The patient, a Jamaican male, returned home recently after living for 10 years in the United States where his illness was diagnosed.

Minister of Health, the Honorable Dr Kenneth Baugh, issued the following release: "The Ministry of Health reports the first case of Acquired Immune Deficiency Syndrome (AIDS) to be recognised in Jamaica.

"The patient, a Jamaican male lived for the last ten (10) years in the United States, where he had blood transfusions and his illness was diagnosed, but returned home within recent weeks and has been hospitalized.

"The high-risk groups for AIDS are homosexuals, persons who receive frequent blood transfusions from infected persons, and persons who frequently practise intravenous drug abuse.

"There has been much publicity in the international press recently about the nature and seriousness of this disease, but the public is reminded that there is no evidence that it may be contracted by casual contact."

THE GLEANER has learnt that the patient is being treated at a corporate area hospital. He had been living in Miami, Florida, where the disease was diagnosed and treated.

While AIDS is said to be most prevalent among homosexuals, sources close to the case here said that this case was not related to homosexuality. It was pointed out also that the patient had a low immunity and had had many major operations and large volumes of blood transfusions.

A ministry official said that the government epidemiologist, Dr Alma Dyer, had been to see the patient and that all relevant steps were being taken to deal with the situation. Asked whether Jamaica had the facilities to deal with the case, the official said there were facilities to treat it so far as was possible.
THE CLEANER checked with the blood bank about the testing of the blood of donors and prospective donors and it was pointed out that tests were done to ascertain whether donated blood was infected. A ministry source said that in screening, steps were taken to exclude the high-risk groups who might be affected.

Asked about measures put in place to deal with the situation, the source said that surveillance measures had been in place for some time now and that health workers—doctors and those in laboratories—had been advised about the diagnostic procedures. The Bureau of Health has been disseminating information on the disease which has been receiving much publicity in the international press.

CSO: 5400/2002
AIDS RESEARCH UNDERWAY LOCALLY

FL291419 Kingston THE DAILY GLEANER in English 23 Sep 83 p 1

[Text] Steps have been taken by health personnel in the government service and at the university to engage in research on Acquired Immune Deficiency Syndrome (AIDS), which attacks the body's immunity system and for which no cure has yet been found.

The cause and cure of this disease, which has a high fatality rate, have been baffling scientists. A Ministry of Health source told THE GLEANER that they had been cognisant of the steps being taken in the United States, where the disease had been receiving much publicity, and that they would be engaging in their own research here.

The source said that steps had been taken in this regard and that the persons in the health service were competent to carry out the research.

The Ministry of Health on Wednesday reported the first case of the disease to be recognised in Jamaica, that of a Jamaican male who had lived for 10 years in the U.S. where his illness was diagnosed. The source said that all steps had been taken to handle the situation here.

Symptoms of the disease include a certain type of skin cancer, respiratory illness, thrush, swelling of the lymph glands, malaise, weight loss, loss of concentration, prolonged non-specific viral-like illness and variable diarrhoea. The most significant symptoms were the weight loss, the skin lesions and the respiratory illness, the source said.

Diagnosis is made by history of the problem; high risk factors; age of patient; examination of clinical signs and symptoms and laboratory data.

Precautionary measures to be taken against the transmission of the disease include avoiding sexual contact with persons known or suspected to have the disease, avoiding taking blood from persons in the high risk groups and screening of blood donors. Physicians have been urged to adhere strictly to medical indications for blood transfusions. Emphasis has been placed on the donation of blood as some victims have been suspected of contracting it through blood transfusions.
A medical spokesman said that many steps have been taken to protect health workers, and emphasized that there is no evidence that persons who took care of AIDS patients had contracted the disease. To date, no person to person transmission had been identified other than through intimate contact and blood transfusion.

The high risk groups include homosexual and bisexual men, intravenous drug users, haemophiliacs and children with high risk AIDS parents. Researchers suspect that AIDS is caused by a virus.

CSO: 5400/2002
EDITORIAL NOTES PROBLEMS IN RURAL MEDICAL CARE

Vientiane PASASON in Lao 9 Aug 83 pp 1, 2

[Editorial'] column: "Public Health Should Be Converted to the Production Base"

[Excerpt] The plenum of the Third Congress, 3rd session, of the party Central Committee clearly stated to "pay attention, and invest in the bases in public health, hospitals, health stations, disease inspection locations, and medicine-making plants. We must especially and attentively improve district hospitals and traditional medicine hospitals according to the direction of the line saying that the government and the people together should dig up and use all sources of medicinal roots within the country. We should encourage traditional medicine usage within localities along with purchases abroad to fulfill the demands of the people. We must inspect the distribution of medicines to ensure that they are taken down to the bases and locations for use, e.g., main production units, fighting units and mountain people." Many provinces and many districts have implemented the plenum very well. For example, they did not only attentively improve public health networks from the provincial level down to the district, canton, and village health stations, but also organized mobile medical units down to each canton and village in order to suppress malaria, to spray DDT and to take care of the people's health, such as in Champassak, Savannakhet, Vientiane, and several places in Xieng Khouang. This has greatly decreased malaria and fairly well protected the people against sickness.

However, many places still have not done this work effectively, e.g., in nationality areas and remote and hard-to-reach areas. In many places the public health networks have been expanded into villages, but they do not encourage the people to treat with government as well as with traditional medicines within localities. Instead they primarily depend on government medicines only. Moreover, they let hospitals, health stations and village medicine supplies lack for medicines for disease prevention and treatment. In many places they depend only on the health network in each locality to work on disease prevention and treatment for the people. They take lightly the organizing of mobile medical units that go down to work in different places. For these reasons the disease prevention and treatment of the people occur in limited areas and are not broad and widespread.
Therefore, this time more than ever cadres in all public health service levels should pay attention to and increase their responsibility for their duty. For example, they should bring public health down to the bases, attentively improve hospitals in districts and cantons, health stations, village medical supplies and agricultural co-ops, advising them to use government along with traditional medicines to prevent and treat diseases. Meanwhile, they should increase the organization of mobile medical units to go down to work in different ethnic groups and in hard-to-reach places, and where agricultural production is emphasized in order to aim at suppressing dangerous diseases, e.g., malaria, enteritis, TB, etc., to take care of the people's health so that they will have sufficient strength to take part in production. By doing this we will guarantee the policy of the party concerning public health and it will be proper to say that public health support production.
MALARIA, DIARRHEA SAID TO BE EPIDEMIOLOGICAL PROBLEMS

Vientiane PASASON in Lao 30 Jul 83 p 2

'\(\text{Things We Should Know}\)' column by Phongthachit Savatdiphon: "We Should Take Care of Our Health and Prevent Rainy Season Diseases"

Excerpt: In the rainy season the weather is not predictable; sometimes it is sunny and sometimes it rains. Water flows from all directions. Animal carcasses and dirty things float and soak in the water, causing diseases to spread rapidly in the water and air, resulting in much disease and sickness to human beings, for example, malaria, diarrhea, dysentery, gastritis and enteritis, tuberculosis, bronchitis, head injuries, drowning, etc., mostly in children, the elderly and weak people. In order to avoid these diseases we should understand and pay attention to different problems as follows.

- Prevention. Suppress mosquitoes and keep them from biting us. Malaria is the number 1 dangerous disease in our country. In order to stop and suppress this disease houses should be opened up, stuff under houses should be kept neat and tidy with no standing water, water jars must be closed tightly, grass must be cut, etc. When sleeping either at night or in the daytime mosquito nets must be used and shirts must be worn. In the evening and morning we should attentively fill the spaces in the house, light mosquito repellent stick, look for possible places to suppress mosquitoes, and spray DDT where it is possible. Every week we must take (Kalolo) pills, 2 tablets for adults and 1 or less for children according to age in order to prevent malaria, or drink boiled medicinal quinine vine juice as drinking water which will also be able to treat malaria. Once in contact with malaria one must hurriedly treat it with traditional medicines or government medicines or rush to send the patient to an appropriate hospital quickly. The patient should not be left sick. If he is left for a long time it will seriously harm his health. We should not believe in superstition, ghosts or any tree spirits.

Diarrhea and dysentery, gastritis and enteritis are the number 2 diseases in our country. These disease germs spread quickly in water. Flies are carriers of these diseases. We should pay attention to drinking and eating which are the main source of contagion when one does not drink boiled water, or by dirty water, eating fruits and raw vegetables, etc. Therefore, food must be boiled or blanched before eating. If you want to eat them raw you should wash
them with a salt solution. Food that is eaten by flies and is rotten overnight and smelly should not be eaten. If you do eat it, it should be boiled or heated up again. Each family has a toilet. When the disease occurs we must hurriedly treat it. First of all, body fluids must be replaced by serum or (olalith) or one liter of water mixed with 1 handful of sugar and salt just enough to taste to drink as a water substitute. Meanwhile, we must hurriedly find traditional medicines, medicinal vines, etc. to boil and drink. Or, we can use government medicines or hurriedly and immediately send the patient to the hospital. Each family should drink boiled water regularly, and set up all conditions to ensure sanitary, disease-free food.

Bronchitis, TB, and meningitis are caused by germs, at first because of a cold and coughing. With no treatment it becomes infectious, because children stay in the sun, they play in dirt and water where dirty stuff accumulates, and go naked in cool weather. We must pay attention to different problems. If one contracts a disease we must hurriedly treat him with either traditional or government medicines, and quickly send him to the appropriate hospital.

9884
CS0: 5400/4476
BRIEFS

CHAMPASSAK MALARIA RATE—Spraying for malaria suppression in Sanasomboun District, Champassak Province, is the responsibility of medical cadres of the health service of this district. It started between March and June and is now completed. During this period they were able to spray a total of 5,446 houses for malaria suppression. Meanwhile, they vaccinated 31,337 people with anti-malaria medicines. Before the spraying there was 14.70 percent malaria in this district. After the spraying there was only 1.20 percent malaria left, and other diseases were effectively suppressed.

LUANG PRABANG HEALTH WORK—In the first 6 months of this year the medical cadres of the health service for disease prevention and epidemic treatment in the health section in Luang Prabang Province were able to effectively carry out their specialized task including the vaccination of 10,670 women and children with preventive medicines. They succeeded by means of injections in preventing diphtheria, whooping cough, polio, tuberculosis, pneumonia, chicken pox, etc. The malaria suppression unit also took blood samples to examine for malaria from over 1,000 people, gave out medicines for disease treatment to 371 people, examined and treated 236 people for skin diseases. Moreover, this service also went down to propagandize and teach the "three clean" health principles and showed films on diseases 69 times which were attended by many tens of thousands of people. The health, epidemics and clean water unit was able to successfully carry out 2 drinking water projects out of 4 projects and achieved several tasks according to the plan.

MALARIA INCIDENCE, VACCINATION PROGRESS—Implementing the spirit of "taking disease prevention as a primary issue and taking treatment as an important issue," in the first 6 months of this year all levels of health services from the center to localities attentively and actively carried out their duty in order to maintain the people's health to be strong and to put all energy into production, especially for rice growing to be effective this year and to make it a year of victory. A local report said that in order to carry out this duty in Champassak Province medical cadres were sent down to each district to examine health and to suppress malaria in different localities within their own province. In Sanasomboun District alone 5,446 houses were sprayed with malaria suppression medicines, and over 31,200 people were
given antimalaria medicines. Prior to this antimalaria operation there was a 14.70 percent malaria outbreak in this locality. However, after this operation only 1.20 percent malaria was left. Speaking only of the Pak Song District hospital, along with the attentive treatment in the hospital the medical cadres in this district also went down to do physical examinations and to give out medicines to the people on over 4,200 trips and carried out antimalaria spraying of 2,277 houses. Over 13,000 people received antimalaria medicines. In Vientiane Capital the cadres in each hospital, besides treating patients within their hospitals, also organized themselves to go down to widely give physical examinations for the people in each locality, especially the disease prevention health service that vaccinated over 13,300 people for disease prevention, tetanus shots, diphtheria, and whooping cough. They also made 7,500 trips to give out polio medicines to children. Excerpt from Vientiane PASASON in Lao 8 Aug 83 p 2/ 9884

CHAMPASSAK MALARIA SUPPRESSION PLANT—In early July medical cadres in the malaria suppression section under the health service in Champassak Province organized themselves to go down to the production bases to spray antimalaria DDT in the people’s houses, take blood samples to look for malaria, give out antimalaria medicines to the people in Khong, Phon Thong, Mounlapamok and Champassak Districts in order to eliminate malaria in each locality, guarantee the people’s health as a safeguard against diseases, and take part in constructing their own locality to be prosperous gradually. They especially aim to succeed in this year’s wet rice production in a timely manner. The provincial health service of Champassak also told us that in the first 6 months of this year the medical cadres in this section went down to examine blood for malaria and gave out antimalaria medicines to the people throughout 10 districts of this province. Excerpt from Vientiane PASASON in Lao 14 Jul 83 pp 1, 2/ 9884

CSO: 5400/4476
BREAKTHROUGH IN DENGUE RESEARCH REPORTED

Kuching THE BORNEO POST in English 2 Sep 83 p 1

[Text]

KUALA LUMPUR, Thurs.- Malaysian researchers have made a major breakthrough in the war against dengue by cutting down the time taken to diagnose cases of the disease, the Minister of Health, Datuk Chin Hon Ngian, said today.

The new procedure needed only two to three days to confirm a case and not eight to 10 days as before, he said when opening a three-day International conference on dengue and dengue haemorrhagic fever (DHF) at the medical faculty of Universiti Malaya here.

Such more rapid diagnosis, he added, would not only be a boon to the patients but also facilitate speeding action by the authorities in preventing the spread of the disease.

The research was carried out by the faculty's department of microbiology which was designated in June last year as the World Health Organization (WHO) collaborating centre for arbovirus reference and research (dengue and DHF).

The deputy vice-chancellor of the university, associate Prof Dr. Mohamad Yunus Mohamad Noor, said the result of the research would be presented in a paper at the conference on Saturday, which he described as 'the greatest gathering of the best brains on dengue and DHF.'

He named the successful research team as Dr. T. Pang, associate Prof. Lam Sai Kit, Prof. S. Rajalingam, Encik Chew Choo Beng and Encik Poon Gin Keng of Universiti Malaya.

Dr. Mohamad Yunus said the naming of the department as a WHO centre reflected the high standard of work being carried out by, and the WHO's high regard for, Malaysian scientists.

He said the breakthrough came about while the department was playing a major role in last year's dengue outbreak in the country by providing diagnostic laboratory services.

It was while doing this that the team did research on developing a more rapid method for diagnosing dengue virus infections, he said.

The method they came up with used the larvae of mosquitoes. The patient's blood was injected into the heads of the larvae. After two or three days, the larvae were decapitated and tested for the presence of dengue virus.

'This represents a significant development as methods available to date require an average of eight to 10 days before a result is obtained,' he added.

About 170 doctors and researchers from the United States, Australia, India, Japan, Sri Lanka, Vietnam, the Philippines, Indonesia, Singapore, Thailand, and Malaysia are attending the conference organised by the medical faculty, Universiti Malaya.

The conference is aimed at discussing various aspects about dengue and DHF and also finding ways in research cooperation on the disease. —Bernama

CSO: 5400/4300
PROGRESS AGAINST DENGUE OUTLINED

Kuala Lumpur NEW STRAITS TIMES in English 4 Sep 83 p 14

[Editorial: "Fresh Drive Against Dengue"]

[Text]

ABOUT 150 experts and research scientists from 16 countries attended the three-day international conference on dengue and dengue haemorrhagic fever (DHF) at the University of Malaya in Kuala Lumpur. All the five Asean countries were well represented — and rightly so because DHF has become a major infectious disease in this part of the world. The Thai presence was impressive with the presentation of one and a half dozen papers on the virulent experience in Thailand. Since 1959 up to 1981, some 222,569 patients had been hospitalised and as many as 5,539 had died of the disease. According to Prof Nath Bhamarapravati, the director of the WHO project in Bangkok which has reportedly succeeded in producing the vaccine for three major strains of the dengue virus, vector control and other measures have been of some value. The initial findings of the five-year epidemiological study in Thailand, started in 1980, are of much interest. They have found high rates of primary and secondary infections and transmission of all four viruses associated with the malignant fever and shock syndrome. Endemic in Thailand as in this country, the disease appears all the year round, peaking with the monsoon season in June and July.

Of immediate concern to the general public is what progress has been made in the fight against both the so-called classical dengue fever and the more severe DHF infection in the shock cases. How fast can they be detected? Is there a cure? Can dengue be brought under control? Much progress has been made in clinical diagnosis. The University of Malaya has found a technique to confirm dengue cases in two or three days, instead of eight to 10 days. In Singapore a simple test has been used to detect dengue antibodies in four to five hours. The Thais have developed a technique to detect viral antigen and antibodies in 90 minutes. Apart from early detection, there is the need for effective treatment particularly in the control of bleeding and management of the shock syndrome. There are what Health Minister Datuk Chin Hon Ngian has called "baffling" aspects; if so, they have to be resolved quickly. Having identified the priority research needs and problems in the various aspects of dengue infection and disease, the research scientists must collaborate more closely henceforth to achieve further breakthroughs in laboratory analysis, medical treatment and vector control.

A milestone in the international campaign against the dengue disease, the Kuala Lumpur meeting came on the eve of another large-scale anti-dengue drive in this country. We are back to the fundamentals — good housekeeping, proper sanitation and personal hygiene. Remember to keep the homes and surroundings clean. Don't allow water to stagnate. Prevent mosquitoes from breeding.

CSO: 5400/4300
EDITORIAL: PREVENT RECURRENTE OF DENGUE EPIDEMIC

Kuching THE BORNEO POST in English 5 Sep 83 p 2

[Editorial: "Prevent Recurrence of Epidemic"]

[Text]

Malaysia experienced a dengue epidemic last year, hitting 3,111 people and causing the deaths of 36 people and since then the Health Ministry has started a strategy for all communities to be involved in anti-dengue work. Dengue fever, although curable can sometimes be deadly and can reach epidemic level if no preventive measures are taken to control them. Dengue fever is caused by virus and is spread by aedes mosquitoes. As aedes mosquitoes need stagnant water to breed, the most effective way to destroy them is to get rid of the breeding ground. In this case, prevention is still the best way of curbing the spread of the disease and, therefore, all efforts must be made to make the general public aware of what they should do to prevent another outbreak of dengue. If the general public still shows sign of apathy towards dengue, it would bring back another dengue epidemic.

Recently, the Health Ministry issued a public alert on dengue, with a publicity blitz to follow on how the people can prevent a recurrence of dengue epidemic. The message driven home to the people is simple and it depends very much on each individual to combat dengue. The government’s campaign after the epidemic proves to be effective because so far this year, there have been only two deaths due to dengue in Peninsular Malaysia as compared to 27 deaths for the corresponding period last year. Simple hygienic measures, such as keeping the house and surroundings clean, ensuring rubbish are not littered indiscriminately and draining all stagnant water, will greatly lower the index of aedes mosquitoes, thus the rate of transmission of the disease. It is logical for the authorities concerned to continue to educate and emphasize on hygiene and cleanliness, especially in areas prone to the disease. With the lesson from last year’s dengue epidemic, the general public must constantly remain vigilant against aedes mosquito and with every individual doing his bit, the prevention of the recurrence of dengue epidemic is assured.

CSO: 5400/4300
BRIEFS

MORE DENGUE CASES REPORTED—Kuching, Mon—Seven more cases of suspected dengue were reported in Sarawak today bringing the total number so far this year to 152, with one death. A spokesman of the State Medical Department here said that five of the victims were from here with one each from Simunjan in the First Division and Sibu in the Third Division. The victims of suspected dengue fever from Kuching are three school boys, two aged 14 years, and the other 16 years, a 19-year-old girl and a 39-year-old man. The victim from Sibu is a 33-year-old man from Sungai Merah while the suspected dengue haemorrhagic fever is a 10-year-old boy from Kampung Tungkah in Simunjan. All the victims, except the one from Sibu who is at the Lau King Howe Hospital there, have been admitted to the Sarawak General Hospital here.—Bernama [Text] [Kuching THE BORNEO POST in English 23 Aug 83 p 1]

CHOLERA SITUATION IMPROVING—Kota Baru, Sun.—A 78-year-old cholera suspect was admitted to the Kota Baru General Hospital yesterday. The Deputy Director of Medical and Health Services, Dr Gurbaksh Singh, said the suspect was from Kampung Padang in Tok La, Pasir Mas. He added that the State Medical and Health Services report showed that the cholera situation was slowly improving. "Five cholera suspects were discharged yesterday, leaving only two more suspects undergoing treatment in the ward," he added. Dr Gurbaksh Singh also said his department had not received any reports of new cases or carriers for nearly a week and this, he added, was a good sign that the situation was returning to normal. The total number of cases reported were 443, carriers 395 and suspect cases 651, he said. [Text] [Kuala Lumpur NEW STRAITS TIMES in English 5 Sep 83 p 11]

cso: 5400/4300
BRIEFS

ENCEPHALITIS OUTBREAK ON CARINGO ISLAND—An outbreak of encephalitis, an often fatal disease characterized by inflammation of the brain, occurred on Caringo Island, Mercedes, Camarines Norte, according to a report reaching the Ministry of Health. Nineteen persons suspected to have contracted encephalitis were hospitalized. Two of the nine died, Dr. Amado V. Pajarillo, acting assistant provincial health officer of Camarines Norte, reported. Citing Dr. Pajarillo’s report, Dr. Restituto Daguinsin, regional health director of Region No. 5, said that most of those afflicted with the disease were children between three and 14 years old. Symptoms such as headache, fever, convulsions, and lethargy were observed, leading doctors to diagnose the cases as arbovirus encephalitis which is mosquito-borne. Daguinsin said, however, that he suspected the cases to be dengue fever, a viral disease also transmitted to man principally by mosquito which manifests the same symptoms and occurs more commonly in the country. He said that known breeding places of mosquitoes on the island were sprayed with DDT, an insecticide used to kill mosquitoes carrying the dengue fever virus, and thereafter no additional cases of the disease were reported. [Text] [Manila BULLETIN TODAY in English 23 Sep 83 pp 1, 10]
MARYDALE MEASLES OUTBREAK—MARYDALE has been hit by a serious outbreak of measles—affecting 90 children—medical personnel in the town said this week. Sister S. C. Boltney of the Martha Bishop Clinic in Marydale, said she had been working overtime recently as so many children had been infected. 'There are three Marydale children who have been admitted to Prieska Hospital after bad measles attacks,' Sister Boltney said. School children have been the most badly affected and 52 cases of measles among pupils have been reported.' The other 38 cases were reported in younger children, she said. 'This is the worst outbreak of measles Marydale has experienced in the four years I have worked at this clinic,' Sister Boltney said. 'Last year we had an outbreak where 40 people were affected—but the present outbreak is more than double that number'. Sister D. Hanekom, of the divisional council clinic in Marydale, said it was difficult to explain why the infection had occurred. 'There have been outbreaks of measles at other centres recently—perhaps the infection had been carried here from elsewhere.' [Text] [Kimberley DIAMOND FIELDS ADVERTISER in English 14 Sep 83 p 8]

PLAGUE ADVICE—DR REG COOGAN, Medical Officer of Health for Cape Town, last night described bubonic plague as one of the six "formidable epidemic diseases" and said it had a "fairly high mortality rate if not treated." He said bubonic plague was a notifiable disease which meant that it was required by law to notify local public health authorities of incidents involving the disease. He said overcrowded conditions where rats thrived were conducive to this "Third World" disease, but that a modern city had the resources to deal quickly with cases. It was often a complication, such as severe pneumonia, that caused death and all age groups were susceptible. "Antibiotics will usually prevent death if treatment is started in time. Immunization by vaccine does exist but gives only short-term protection and is usually used by doctors and nurses who are working in areas where the plague is present." He said that only when an extermination programme to destroy rats "by every possible means" was put into effect was this vaccine used. Symptoms included severe fever, swelling of lymph glands, shock and delirium. Bubonic plague had a fairly short incubation period of two to six days, said Dr. Coogan, and it was highly unlikely that people coming in from rural areas where the plague was present could cause problems in a hygienic city. Domestic rats usually became infected by fleas from wild rodents and there were various areas in the country known to harbour the germs. The last outbreak of bubonic plague occurred in Cape Town during the South African War when infected fodder harbouring rats was brought from India for English cavalry horses. [Text] [Cape Town THE CAPE TIMES in English 15 Sep 83 p 5]
HEPATITIS A RESEARCH--For the first time the influence of the disinfection of drinking water on the hepatitis virus (Hepatitis A virus, or HAV) can now be directly studied by scientists, thanks to the work of virologists at the CSIR's National Institute for Water Research. Until now, this was impossible, because scientists could not cultivate this virus for research purposes under laboratory conditions. They have now succeeded in adapting the HAV so that it will grow in certain cultures, among others in a liver cell line developed in South Africa. Practical research on the previously evasive HAV virus can now be carried out. The hepatitis A virus is waterborne, but information on its behaviour in this environment has been limited. It was not possible to evaluate the efficiency of the water treatment process necessary for the reclamation of pure drinking water from waste water, as far as the elimination of HAV was concerned. During the Second World War some information on the response of HAV to water chlorination was obtained when volunteers were used in experiments to develop water disinfection techniques for the military. Scientists were able to use this limited knowledge, together with what they already knew about related viruses, to venture intelligent guesses about how chlorination affected the hepatitis virus. The method now being followed is to chlorinate the water in which HAV has been released and then to cultivate the surviving HAV in the laboratory. These can then be identified with the aid of the radioactively marked HAV antibodies (or anti-HAV). The first directly obtained information on the effect of chlorination on HAV was recently acquired in a collaborative research project in which virologists of the universities of Munich and Pretoria are using this new technique. It appears that HAV can be satisfactorily eliminated by existing water purification techniques. [Text] [Pretoria SCIENTIAE in English Jul-Sep 83 p 34]
MEDICAL INQUEST INVESTIGATES 'LEGIONNAIRE' OUTBREAK

Madrid ABC in Spanish 1 Sep 83 p 17

[Text] The health services of the armed forces have begun an epidemiological investigation among military personnel who in the last few months were quartered in the Castillejos barracks in Zaragoza to investigate the outbreak of "legionnaire's" disease.

The survey was mailed to some 2,500 commanding and other officers who during the pre-summer months were quartered in this barracks. With it an attempt is made to find out exactly the number of people who could have been affected by "legionnaire's disease," as well as uncovering the possible source.

The questionnaire consists of 30 questions. Among other things the recipient is asked the arrival and departure dates of his stay, the number of the room he occupied and whether the room was single or shared. He is asked also if during his stay he took a hot or cold shower, or if he took any baths, if he used the wash basins on the ground floor or those of the basement, if he smokes, and if so, how much per day.

9678
CSO: 5400/2531
EXPERT URGES VACCINATION OF HOMOSEXUALS TO REDUCE AIDS RISK

Stockholm DAGENS NYHETER in Swedish 30 Aug 83 p 5

Homosexuals who have several sexual partners should be vaccinated so that there would be no danger that they would get the dangerous AIDS disease.

That is what Professor Margaret Bottiger at the government bacteriological laboratory believes.

The present vaccine protects against Hepatitis B, which usually is called jaundice. Jaundice is one of the serious infections that strike people who later become infected with AIDS. Therefore protection against jaundice should actually also be protection against AIDS, Professor Bottiger believes.

"The trouble with the vaccine is that it is very expensive," she says. "It costs more than 1,000 kroner per vaccination. "But in many cases a 'screening' should suffice—that is, a check as to whether the patient has enough protection against hepatitis. One can get such a test for 70 kroner."

No Defense

Research workers still have not succeeded in charting how AIDS arises. It is clear that the disease strikes people who have contracted infections repeatedly. It is also believed that AIDS can occur as a combination of many infections and help to break down the body's already weak immunity defense against infections.

The majority of those who are affected by AIDS are homosexuals. The reason for that is that anal mucous membranes can rupture easily during anal coitus and the infection spreads with the blood through that wound.

Of all the people who have been affected by Hepatitis B—the jaundice that is spread through the blood and mucous membranes—15 percent are people who state, themselves, that they have had homosexual contact. An investigation that was carried out in sauna clubs shows that 3 percent of the homosexuals are carriers of the B virus while the average figure for the entire population is 0.1 percent.

Three Swedes have contracted AIDS up to now, and two of them died. One of the ones who died had been infected with jaundice. Another 50 people are suspected of having been infected with AIDS and therefore are under observation.
Associate Professor Birgit Skoldenberg, of the infection clinic at the Danderyds hospital, supports the idea of vaccinating people who may come in contact with the infection.

"It is a question both of access to the vaccine and its cost, but I think that the homosexuals themselves are willing to pay what it costs," she says.

Information

She believes that information for homosexuals is the most important link against AIDS.

"The homosexuals who have intercourse frequently with different people must know that they are exposing themselves to a great risk from the point of view of infection," she says. An important intercessor for vaccination is the RFSL, the National Association for Equal Sexual Rights. The RFSL accuses a number of hospitals of increasing the concern regarding AIDS.

For example, the RFSL has reported the county council of the Stockholm administrative province to the attorney general on the grounds that, as the RFSL asserts, the Sodersjikhuset's clinical chemical laboratory refuses to concern itself with certain AIDS specimens.

The chief associate professor of the laboratory, Lars Sundblad, admits that they now only analyze a few specimens, but he denies that that has anything to do with any special fear.

"We have carried out an experimental program but think that we did not have the time for these specimens. We are continuing to take some specimens and discussing how that is to be organized in the future," he says.

"It is evident that the personnel have not been especially enthusiastic. The specimens are treated as hepatitis, and therefore there are particularly difficult conditions that have to be complied with," Lars Sundblad says.
MAT CALLS FOR FURTHER RESEARCH ON SCHISTOSOMIASIS

Dar es Salaam SUNDAY NEWS in English 4 Sep 83 p 1

[Text]

THE Medical Association of Tanzania (MAT), Mwanza branch, has called for further research on bilharzia affecting people in the lake regions.

The call was made at a one-day annual general meeting of the association held recently at the Bugando Hospital.

The newly-elected branch chairman of the association, Dr. Anselmo Mayalla, said in Mwanza yesterday that it was found during discussions that many patients were experiencing complications after contracting the disease which was prevalent in the regions.

Ndugu Mayalla said that research would be necessary for determination of drugs administered to patients and their effectiveness in treating the malady.
LACK of co-ordinated planning in development programmes has been described as one of the major forces behind the resurgence of malaria and other epidemic diseases in the country. This observation is contained in a speech for the four-day annual conference of the Medical Association of Tanzania (MAT) by Professor Wenceslas L Kilama, at the Muhimbili Medical Centre in Dar es Salaam yesterday.

Professor Kilama, who is the Director-General of the National Institute for Medical Research, noted that most of the existing health problems in the country could be solved only through the adoption of an inter-disciplinary approach that would involve the medical practitioner, policy maker, environmentalist, development planners, and other relevant authorities.

"Health and other inter-sectoral considerations must be part and parcel of development projects if we are to avoid disease epidemics," Prof Kilama told the 100-plus Association members from various parts of the country, who are attending the conference.

He said over the years there had been a proliferation of malaria to the hitherto malaria-free zones due to the indiscriminate felling of trees and other forms of ecological destruction.

In east Usambara, for example, the mass clearing of forests to exploit timber and grow tea and cardamom is considered to be a stimulus to the occurrence of malaria according to Professor Kilama.

Another cause was found in the fast rate of urbanisation and the consequent failure to provide adequate sanitation facilities and crude technical tools that were used in fighting the disease. There was also scanty knowledge on the part of doctors on the use of the alternative drug, quinine, Professor Kilama said.

He suggested the use of sefloquine, but was of the view that this too was not a solution, for the malaria parasite had already developed an "innate resistance to the drug". Sefloquine had been introduced only in a number of countries involved in a special programme for research and training in tropical diseases conducted by the World Health Organisation (WHO), he said.

Professor Kilama further pointed out that lack of adequate skilled manpower was another handicap in the on-going campaign to eradicate malaria in the country. He suggested more training programmes for health cadres.
LIVER DISEASE WIDESPREAD IN NORTHEAST

Bangkok BANGKOK POST in English 22 Aug 83 p 3

[Text]

ABOUT 70 per cent of the Northeastern population might be suffering from liver fluke disease because of their raw meat diet and poor latrinary facilities, Deputy Public Health Minister Therdpong Chaiyanand told the Bangkok Post over the weekend.

Mr Therdpong said the figure is a result of a ministry survey on the infectious disease spread by fluke contained in raw meat dishes popular in the region, such as larb and koy raw fish.

The disease can also be spread through human feces which contain larvae of the fluke that end up in the river as a result of poor latrinary facilities. Excrement from infected persons is washed into the rivers by rain and transmitted into fish and snails which are then consumed by uninfected persons, Mr Therdpong explained.

According to the survey most of the fish in Sakon Nakhon’s Nong Harn lake are infected and those in other Northeastern rivers and lakes are also contaminated to some degree with the infection, he said.

Mr Therdpong said that the medicine is available to cure the disease but this is very expensive. The medicine, he said, comes in the form of pills which can only be obtained in Thailand from Mahidol University’s Tropical Medicine Centre.

The pills cost the centre 80 baht each to buy from abroad but are given to patients here free of charge.

An infected person needs a dose of four pills to be cured, according to Mr Therdpong.

He said that at present China is trying to produce the pills but it is still at the experimental stage.

But if it is successful in producing such pills, then Thailand could possibly purchase them from China at a much cheaper price, said the minister.

Mr Therdpong also said that the ministry is trying to teach villagers to build lavatories which will meet health care needs as a measure to reduce the chances of catching river fluke.

Mr Therdpong also said that the ministry now has a promotion policy for villagers to grow traditional herbs as household decorative plants.

"Herbs have been traditionally used as medicine in this country quite successfully but we have not researched them adequately, and with manufactured medicine traditional herbs are becoming unknown," Mr Therdpong added.

CSO: 5400/4307
BRIEFS

SEVEN AIDS VICTIMS--AIDS, the mysterious killer disease, has claimed the lives of seven young Trinidadian men so far for the year. THE EXPRESS newspaper said the victims, the latest of whom died last Friday, were between ages of 22 and 34 years old. Six of the men were said to be bisexuals. AIDS--Acquired Immune Deficiency Syndrome--attacks the body's immune system and fatality from the disease is high. Homosexuals have been singled out among persons most likely to develop the disease. [Text] [FL280048 Bridgetown CANA in English 2139 GMT 27 Sep 83]

CSO: 5400/2003
BRIEFS

ANIMALS VACCINATED—ASBE TEFERI (ENA)—Nearly one million domestic animals were given innoculation and medical treatment against prevalent animal diseases in Chercher, Adal Gara-Guracha province, Hararghe region, during the just ending Ethiopian year. Veterinarians from the local office of the Animal and Fishery Resources Development Authority vaccinated 921,640 bovines, sheep, goats and pack animals against various cattle diseases. Medical treatment for different diseases was also conducted on hundreds of domestic animals. Meanwhile, 55,743 pieces of hide and skin were collected from six districts of the province and sent to the hinterland. [Text] [Addis Ababa THE ETHIOPIAN HERALD in English 1 Sep 83 p 3]

CSO: 5400/350
PREVENTIVE STEPS TAKEN TO HALT SPREAD OF FOOT-AND-MOUTH DISEASE

Central Java Epidemic

Jakarta KOMPAS in Indonesian 3 Aug 83 p 2

[Excerpts] Foot-and-mouth disease (PMK) which attacked some 5,000 cows and water buffalo in the eastern portion of Central Java has resulted in a loss of some 12 billion rupiahs.

Prof J. J. Hutasoit, deputy minister in charge of increasing-production of cattle and fish, gave this information to newsmen in his office on Monday [1 August]. Actually PMK was discovered in Bajo Village, Kedung Tuban Sub-district, Blora Regency, in May but area officials only reported the outbreak of the disease to central authorities in July. Because of the delay in reporting the disease, thousands of cattle succumbed to the virulent disease which is spread by a virus.

In May PMK had only spread to 5 villages. Now it is found in 12 villages.

Trouble Spot

The Blora area, or the border area between Central and East Java, Hutasoit said, is a trouble spot as far as the disease is concerned because there is heavy traffic in cattle in this rather isolated area throughout the year.

The spread of PMK again was reported to the chief of state on Monday. "The president directly offered Presidential Aid funds of 420 million rupiahs to augment the budget included in the APBN [Estimate of State Expenditures and Income] to eradicate this disease once and for all. This money is to be used to import vaccine, antibiotics and other supplies to combat the cattle disease which has caused such great loss to farmers. Inoculation of cattle will begin in early August.

To prevent the spread of PMK, the 7 regencies surrounding Blora Regency are being watched closely, particularly the transportation of cattle from this area, which is being studied and controlled by the responsible authorities.

Farmers are being urged to assist the officials. Their cattle must be shown to the officials and not hidden in order to evade the study and inoculation operation.
Plan Postponed

Actually, the vice minister said, Indonesia since 1974, and aided by the Australian Government, has carried on a massive program to combat PMK, namely through mass inoculation in the infected area ranging from Bali to all of Java and South Sulawesi.

This program, he said, is almost completed. Only the Central Java area remains and the program will be completed there by the end of 1983. With the renewed outbreak of PMK in Blora Regency, the plan carrying the slogan "Indonesia Free of PMK" by 1984 must be postponed.

Disease Spreads to East Java

Jakarta HARIAN UMUM AB in Indonesian 13 Aug 83 p 9

[Excerpts] Foot-and-mouth disease which broke out in July, striking some 4,000 cows in the Kedung Tuban area, Blora and Cepu Regencies (Central Java), has now spread to Baureno, Bojonegoro Regency (East Java).

Prof Dr J. H. Hutasoit, vice minister in charge of increasing production of cattle and fish, gave this information to newsmen at the Juanda Airport in Waru on Wednesday afternoon [10 August] as he was departing for Jakarta.

Vice Minister Hutasoit has been touring several areas of East Java since Monday, including Lamongan, Bojonegoro, Sidoarjo and Malang, to collect material for work being done to increase cattle and fish production.

He noted that in the area where the cattle disease was beginning to be concentrated the people seemed to be working hard to prevent and eradicate the disease. Inoculation as a preventive measure was started on 1 August. The epidemic was reported on 20 July, the minister said.

Thirty-thousand doses of the vaccine were administered and mass inoculation is planned for the 7 regencies of Lamongan, Tuban, Bojonegoro, Ngawi, Madura, Magetan and Gresik for which some 500,000 doses of the vaccine are needed. The goal is to inoculate 410,000 cows, 35,000 water buffalo and 55,000 milk cows.

Vaccine for this purpose is urgently needed while the veterinary pharmaceutical center charged with the task of producing the vaccine is not prepared to produce the vaccine in such a large quantity or in so short a time.

Total production capacity of the vaccine by the center is 350,000 doses a month, but the center is unable to produce it soon enough to meet current requirements. Therefore the vaccine is being imported, the minister said. A foot-and-mouth disease epidemic occurred in East Java in 1975 and the area was said to be free of the disease in 1981.
BLACKFLY REPORTED CONTROLLABLE WITH BIOLOGICAL LARVICIDE

Pretoria SCIENTIAE in English Jul-Sep 83 pp 16-17

A sporadic killer of young lambs, the *Simulium* midge or blackfly, can now be effectively controlled by means of a biological larvicide.

The larvicide, known as Teknar, has been tested by researchers at Onderstepoort working in collaboration with scientists of the CSIR's National Institute for Water Research (NIWR) and the Veterinary Division of Hoechst SA.

Teknar, which contains a bacterium, *Bacillus thuringiensis*, causes the death of *Simulium* midge larvae and is more selective than any chemical larvicide.

Carefully monitored tests on the effectiveness of Teknar were conducted by Dr Manfred Car of the Onderstepoort Veterinary Research Institute and Dr Ferdy de Moor of the NIWR.

'According to questionnaires submitted by farmers, the *Simulium* midge not only kills lambs, but can cause losses of up to 60 per cent in total production from farm stock', said Dr Car.

'Experiments have established that milk production, for instance, has been cut by as much as 55 litres per cow per week', he said.

'Furthermore egg-laying can be seriously affected - by a reduction of at least one egg per hen a week', he added.

Various methods of control of the *Simulium* midge have been examined over the years. At Onderstepoort, scientists have been investigating the problem since 1965.

Aerial application of an insecticide on the Vaal River by the Onderstepoort Veterinary Research Institute in 1967 successfully controlled the midges but was abandoned because of the disadvantages of chemical control and the fact that it affected the ecology of the river detrimentally.

From 1978 to 1980 Dr De Moor undertook intensive studies on the effect on the larvae and pupae of variations in water flow in stretches of the river where blackflies breed. It was found that manipulating the flow of water effectively limited the population of *Simulium* midges at practically no cost. However, in areas where water flow manipulation is ineffective, it is impossible to stop the fly from breeding without using biocides', said Dr De Moor.

According to the Department of entomology at Onderstepoort, the
new larvicide could be used for controlling *Simulium* in rapids on the Orange River over a total distance of 150 kilometres.

Recent tests undertaken by the research team showed a marked decrease in the *Simulium* larvae 14 hours after application of Teknar in the Vaal River at the Margaretha Prinsloo bridge near Warrenton.

'Sixteen hours after application at least 50 per cent of the larvae up to 100 metres below the bridge had been killed', said Dr Car.

In a second test at a nearby farm, Wilrand, a noticeable decrease in blackfly larvae could be seen on marked stones four hours after application.

'This second test was a great deal more successful and within nine hours of treatment the mortality of blackfly larvae was just over 80 per cent.

'The following day – about 17 hours after initial treatment – hardly any *Simulium* larvae could be found on marked stones', said Dr Car.

Asked about the effect of the larvicide on the ecology, Dr Car pointed out that Teknar is fully biodegradable and highly selective in killing *Simulium* midge larvae, leaving other aquatic fauna unaffected.

'It is unlikely to place any risk on the overall ecosystem of South African waters or on the insect life', he said.

'It has been established that Teknar kills certain mosquito larvae as well', added Dr Car 'but this effect has not yet been studied in South Africa'.
SOUTH AFRICA

BRIEFS

TRACES OF BUBONIC PLAGUE—Traces of bubonic plague have been found in routine blood tests done on dogs belonging to farm workers on three farms south of Graaff-Reinet. The Regional Director of Health for the Eastern Cape, Dr J Kysnaw, said the situation was completely under control. [Text] [Johannesburg SUNDAY TIMES in English 11 Sep 83 p 21]

CSO: 5400/348
BRIEFS

BLACK QUARTER DISEASE QUARANTINE--The Mbeya Regional Livestock Development Officer, Dr. Cletus Kapinga, has declared the whole of Ilomba Division in Mbeya District under quarantine due to an outbreak of black quarter disease. According to a quarantine notice issued on Friday, it is prohibited to move into, out or through the area any cattle, sheep, goats, swine or their products without a written permission from an authorized officer of the Veterinary Division. [Text] [Dar es Salaam SUNDAY NEWS in English 18 Sep 83 p 1]

TABORA RINDERPEST VACCINATION CAMPAIGN--Tabora--Tabora Region has launched a rinderpest vaccination campaign scheduled to start today. A Spokesman of the Livestock Development Department in the region told Shihata that vaccines had been received from Dar es Salaam and that 600,000 head of cattle would be vaccinated in Igunga District alone. Tabora Region has 1,200,000 head of cattle. [Text] [Dar es Salaam DAILY NEWS in English 12 Sep 83 p 3]

CSO: 5400/347
SCIENTISTS FIND FUNGUS CAUSING DROP IN PASTORAL YIELDS

Melbourne THE AGE in English 20 Aug 83 p 5

[Article by Peter Roberts]

[Text] Victorian agricultural scientists have isolated the fungus largely responsible for steadily declining yields in pastoral areas throughout southern Australia.

They believe that a fungus of the Phytophora family is the main cause of a 20-year decline in productivity of subterreanecn clover, the plant on which the pastoral industry is based. Another Phytophora fungus caused the potato blight in Ireland last century.

More than 20 million hectares of clover pasture have been sown in southern Australia and in some regions more than 50 per cent of farms are affected by declining yields.

Farms in the worst affected areas could be suffering a halving in milk or meat yield in bad years, according to Dr Peter Taylor, of the Irrigation Research Institute at Tatura in northern Victoria.

He said yesterday that the newly discovered fungus was a close relative of the fungus Phytophora cinnamomi, which has decimated eucalypt forests in Western Australia and parts of Victoria and which has attacked commercial crops including avocado, macadamia nuts and pineapples. The new fungus has yet to be named.

"Last year was a good year for root rot and a bad year for clover," Dr Taylor said. "A very small amount of fungus can do a lot of killing."

The discovery, announced at the International Congress of Plant Pathology being held at Melbourne University, was only confirmed in May. It was isolated from trial crops at Tatura and has now been confirmed from several areas around Victoria.

The Nestle milk company estimates that 50 per cent of dairy farms in irrigation areas in northern Victoria are affected by clover decline.
Dr Taylor said the fungus attacked the roots of the clover, eventually cutting off the plant's supply of nutrients and water. Pastures free of the fungus have been shown to produce more than four times as much clover by weight as infected pastures.

Dr Taylor said that now a cause of the decline was known, pastoralists could move to two clover species known to be resistant to the fungal parasite. He said this made it easier to treat than fungal infection in Australian forests.

Professor George Zentmyer, the University of California biologist who identified the cause of the forest die-back in Western Australia, is also at the congress. He said yesterday that treatment with fungicides was too expensive when Phytophthora hit a native forest.

CSO: 5400/7501
COLORADO BEETLES SURVIVE WINTER—By Professor Martti Markkula. Throughout the summer there have been repeated statements in the mass media that the Colorado beetle is not capable of hibernating in Finland or at least it has been argued that it is not known whether it can survive a Finnish winter. The fact is that the hibernating capability of the Colorado beetle has been researched in Finland and the results are known: The Colorado beetle can survive a Finnish winter. Hibernation experiments were conducted at the Agricultural Research Center in Vantaa in the winter of 1973/74 and the results were already made public at that time. The beetles used in the experiment were freely allowed to dig into the ground, and several of them went to a depth of 30—50 cm in the fall. In the spring a number of the beetles climbed out to the surface, began to eat potato leaves and subsequently even to lay eggs. I told about these experiments in interviews on the Colorado beetle during the summer, but the word did not seem to go any further. This issue has even more general connections with the destructiveness and the reproductive capability of insects. Winter frost are persistently considered to be a vital question for insects. However, the shortness and coolness of summers in the Nordic area limit the reproduction of insects and even other species more than the cold winter. In Finland there would only be time for the development of one generation of Colorado beetles during the summer so that their reproduction and destructiveness would remain less than, for example, in Central Europe where the Colorado beetle produces two or even three generations during one potato growing season. Thus it can even be said that the Colorado beetle and many other destructive insects can survive the winter, but not Finland's short summer. [Text] [Helsinki UUSI SUOMI in Finnish 28 Aug 83 p 5] 10576
WAR ON INSECTS KEY TO REVIVAL OF COCONUT INDUSTRY

Bridgetown CARIBBEAN CONTACT in English Sep 83 p 12

[Article by Chaitram Aklu]

[Text] GUYANA, (IDRC Feature)—An ambitious plan has been put into effect to raise Guyana's coconut industry to the status it enjoyed until little over a decade ago. The key to the plan is the use of parasitic insects to destroy the pests that are partly responsible for the industry's decline.

Coconut palm is cultivated on about 140,000 hectares along the coastal plain of Guyana, the most fertile region of the country. It is a prolific bearer, with an average life span of about 50 years. On well-tended plantations the average annual yield can be as high as 5,280 mature nuts per hectare. But the average in Guyana today is only about 1,400 nuts per hectare.

The industry, which at one time produced a surplus for export, is plagued by a number of problems that have led to a severe decline in production. An estimated 50 million nuts were harvested in 1970, but by 1979 the harvest had fallen to only about 33 million.

The result is that edible oil imports have been rising steadily over the years, reaching more than 2,600 tonnes in 1980 and 1981, at a cost of G$6 million (approx. US$2 million). Imports now account for 63 percent of the total demand for edible oils in the country.

Among the causes of the present poor state of the industry are increased consumption of young nuts for their water, theft of both young and mature nuts, failure to improve the industry by introducing new varieties, neglect of present holdings, insect pests and diseases. Control of pests and diseases is a major priority in the new programme being undertaken by the Ministry of Agriculture with financial and technical assistance from the United Nations Food and Agriculture Organization (FAO).

Scientists at the Central Agriculture Station at Mon Repos, in collaboration with FAO consultants, have embarked on research aimed at developing biological control of pests in the industry. It is the first time such a programme has been undertaken in Guyana.

There is a world-wide research on the coconut, a staple crop in many tropical countries. The International Development Research Centre (IDRC) supports the Coconut Research Institute in Sri Lanka in the development of an international centre on coconut information.

Coconut palms are monococious—capable of producing both male and female flowers on one tree—and bloom throughout the year at intervals of 20 to 25 days. The flowers produce abundant quantities of nectar. Honey bees are frequent visitors and are the main agents of pollination. Honey production has developed into an important small industry in coconut cultivating areas.

The major pests that attack the palms are the coconut caterpillar, the moth borer and a hispid leaf minor, as well as ants, mealy bugs and scale disease. The caterpillar strips the trees of their leaves, while the moth borer tunnels into the leaf and truss bases of the palm. The two are the most destructive of all. Moth borers alone have been found to be responsible for reductions in yield of 32-46 percent in recent studies.

Severe outbreaks of pests and disease have been countered by spraying insecticides such as aldrin, fenitrothion and malathion. Often several applications were necessary. More recently, monocrotrophos was found
to be the most effective treatment. It is administered by injection into the tree trunk.

But chemical control also has its problems. Monocrotophos is an expensive imported chemical costing about US$20 per litre. It is extremely dangerous to handle, and has led to ecological problems. Research conducted in 1977 in an area noted for its honey production showed that honey bees visiting the palms shortly after application of monocrotophos died within five to eight hours. One week after the treatment, however, the bees no longer appeared to be affected.

The researchers at Mon Repos have collected sample species of the pests from three major coconut producing areas where the greatest damage was reported, and are studying them under laboratory conditions. Findings so far have been described as encouraging.

If the experiments at Mon Repos are successful, biological control methods could be directed at every stage in the life cycle of the caterpillar. It would be a major breakthrough for the coconut producers. The idea is to eventually rear the parasites by the millions in the laboratory, to be released when there is an outbreak of pests.

The government's decision to place restrictions on imports of edible oil makes it imperative for the industry to become economically and ecologically viable. If the biological control of pests leads to rehabilitation of the plantations, coconuts may soon become a source of foreign exchange again.

CSO: 5400/7505
SEEDLING CATERPILLAR INFESTATION—Comrade Soukhaseum, chief of the cultivation department under the Ministry of Agriculture, Irrigation and Agricultural Co-ops, told us that in this year's rice growing season the produce, e.g., the young wet rice plant of the people in 3 districts around Vientiane Capital, Hatsaifong, Nasaithong and Saithani, were infested in some areas by seedling caterpillars. These caterpillars are dangerous because they can increase very fast. They infested the plant leaves making them short and curly and leaving the plant tops yellow, rotten and dead at the ends. On seeing this the farmers hurriedly and energetically reported the situation to the agricultural officers. At once the cultivation department organized technical cadres along with equipment to the incident site. Moreover, in some places that already have cadres and tools, they sent insecticides in a timely manner and started to suppress immediately. After the attentive, determined and urgent infestation suppression by the specialized task cadres and also the people and the farmers they scored a great achievement. Comrade Soukhaseum said that if they did not hurry to suppress them in a timely fashion it would be a serious blow to this year's harvest. Text Vientiane PASASON in Lao 2 Aug 83 p 27 9884

CSO: 5400/4476
LOCUSTS DESTROY DAVAO FARMLANDS

Manila BULLETIN TODAY in English 12 Sep:83 p 12

[Text] KAPALONG, Davao del Norte (PNA) — Swarms of locusts destroyed at least 70 hectares of farmlands in two barangays of Kapalong, Davao del Norte this week, Leonardo Balino, provincial agricultural officer reported.

Balino said vegetable plants in barangays Florida and Katingan, Kapalong were infested by the insects since last Sunday and are fast spreading to neighboring barangays.

Like what field technicians encountered in the towns of Nabunturan, Compostela, and Panabo, people of the place also refused to drive the hoppers with pesticides because they were catching the pests for sale.

Balino said mobile sprayers loaned to them by the provincial government and by the Ministry of Agriculture were not used by farmers and their farmlands. Most of them were busy catching the hoppers for sale, he said.

CSO: 5400/4302
BRIEFS

AUTHORITIES DOWNPLAY ARMYWORM DAMAGE—Zamboanga City—Damage made by armyworms in the autonomous region of Western Mindanao is negligible and not alarming as reported in the national papers, according to Ministry of Agriculture regional director Victoriano A. Sindayen, Sr. Sindayen reported that armyworm infestations, particularly those in several Zamboanga del Norte towns, were immediately placed under control by field pest control technicians. Sindayen said that based on a report by Zamboanga del Norte provincial agricultural officer Zerna, only about 15 per cent of local corn plants was damaged by the armyworms which reportedly emerged after the drought in the southern Philippines. [Text] [Manila BULLETIN TODAY in English 19 Sep 83 p 16]

LOCUSTS DAMAGE SUGAR PLANTATIONS—Bacolod, Sept. 19—Locusts have damaged more than 1,000 hectares of sugarcane plantations in Negros Occidental province, sugar planters said yesterday. They said the situation could deteriorate unless the government provided help. Association of sugar cane growers president Enrique Roxas told reporters the locusts had stunted the growth of the crop and reduced production. Some 200,000 hectares are planted with sugar cane in Negros Occidental, which supplies 56 per cent of an estimated 3.5 million tons of sugar produced by the Philippines every year. Roxas said the locusts were first spotted last month but were contained by insecticides. Technicians traced the recent outbreak to an abandoned farm which had become a breeding ground for the locusts, he added. (Reuters) [Text] [Manila BULLETIN TODAY in English 20 Sep 83 p 13]
BANANA WEEVIL PESTICIDE SHIPMENT

Dar es Salaam DAILY NEWS in English 8 Sep 83 p 3

[Excerpt]

SOME 120 tonnes of furadan weevil-ecticide for banana weevils—has been sent to Kagera Region to combat the pest, Shiha reported.

The Kagera Regional Agricultural Development Officer, Ndugu Joseph Shiha, said in Bukoba recently that the chemical would be reaching Bukoba shortly, but did not say when.

Ndugu Shiha said the chemical would be sold to peasants of Kyamitware, Bugabo and Kiziba divisions, whose farms are said to have been hit most by the weevils.

Ndugu Shiha said the last time the region received the chemical was during the 1979/80 financial year, giving room to the weevils problem to increase year after year.

In February this year, experts sponsored by the European Economic Commission (EEC) made investigations on the damage caused the pest. They reported that 19,000 hectares of banana plantations had been attacked in the region.

Ndugu Shiha said the amount of chemical to be sent to the region, however, would not suffice. He said there were plans to combat the pest in the entire region. He did not elaborate.
LEAFHOPPERS RAVAGING MEKONG DELTA RICE CROP

BK280338 Hanoi Domestic Service in Vietnamese 2300 GMT 26 Sep 83

[Text] At present, leafhoppers are developing vigorously in the Mekong River delta region. Hundreds of thousands of hectares of 10th-month rice seedlings and summer-fall rice have been ravaged by these insects.

Apart from a delivery of 2,000 metric tons of insecticides to various provinces, in the first weeks of September alone, the southern insecticide corporation quickly delivered another 1,500 metric tons to Cuu Long and Hau Giang Provinces to help them stamp out leafhoppers and other insects. Since 10 August, various establishments of the corporation have produced 150-200 metric tons of insecticide for use in the elimination of leafhoppers.

In addition to guiding Can Long and Vung Liem districts in using insecticide to protect rice against leafhoppers, the corporation has sent cadres from its biological section to the ricefields to study and test the effectiveness of some types of insecticides which were produced without the addition of certain ingredients. If tests prove that these types of insecticides are effective, the corporation will go ahead to produce more.

CSO: 5400/4301
BRIEFS

INSECT PROBLEMS IN SRV PROVINCES--Nearly 320,000 hectares of rice country-wide, including some 280,000 hectares in the northern provinces, have been infected with stem borers, leaf folders, rice hispa and brown planthoppers. Ha Bac, Thanh Hoa, Ha Nam Ninh, Hai Hung, Thai Binh and other provinces have organized nights of eradicating harmful insects. Brown planthoppers have appeared this year in a number of southern provinces. [Text] [Hanoi Domestic Service in Vietnamese 1100 GMT 20 Sep 83]

HA NAM NINH INSECTS--As many as 90,000 hectares of 10th-month rice in Ha Nam Ninh Province are being affected by insects and blight. The province has launched a widespread campaign to protect this rice against insects under the guidance of responsible committees at the district and grass-roots levels. [Summary] [Hanoi Domestic Service in Vietnamese 0400 GMT 20 Sep 83 BK]

INSECTS INFEST SRV RICE CROP--The area of rice affected by insects and blight has also expanded. "To date, the area of 10th-month rice affected by insects and blight in the entire country has reached 430,000 hectares, with the north accounting for more than 300,000 hectares. The provinces heavily affected by insects in the north are Nghe Tinh, Thanh Hoa, Ha Nam Ninh, and Thai Binh--30,000-47,000 hectares each. The hardest-hit province in the south is Minh Hai, 38,000 hectares." [Excerpt] [BK021242 Hanoi Domestic Service in Vietnamese 2300 GMT 30 Sep 83]

MINH HAI LEAFHOPPERS--As many as 9,200 hectares of rice and rice seedlings in Minh Hai Province have been ravaged by leafhoppers. The province has sent all technical cadres of the agricultural service to the affected districts to help them form many teams fight these insects with insecticide. [Summary] [Hanoi Domestic Service in Vietnamese 2300 GMT 24 Sep 83 BK]

CSO: 5400/4310
BRIEFS

'MAJOR' TSETSE SPRAYING OPERATION—THE Rural Air Services (RAS), a subsidiary of the Rural Development Corporation (RDC) has launched a major tsetse spraying operation in the infested areas of Petauke district in Eastern Province. This was confirmed in Lusaka yesterday by an RDC spokesman who said the operation would cover 2,000 square kilometres using two aircraft. He could not say how much the exercise would cost and for how long it would last but noted it was financed by the World Bank through the Government. "The operation which started in the middle of last month is intended to rid heavily infested areas of tsetse flies and ultimately open up the land for intensive agricultural development." [Excerpt] [Lusaka TIMES OF ZAMBIA in English 15 Sep 83 p 4]