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This serial publication, based on worldwide press and radio reports, contains information on the epidemiology of human, animal, and plant diseases. Disease incidence, reported outbreaks, and various related epidemiological factors are included. Items are presented by country of occurrence rather than by country of original press report.

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I. HUMAN DISEASES

AFGHANISTAN

MALARIA CONTROL PROGRAM

Kabul THE KABUL TIMES in English 7 Mar 77 p 3

[Article by Dr M. K. Nushin, Part I]

[Text] Despite all the efforts and the improved working of the Malaria Control Programme during the last few years, the malaria situation in Afghanistan is giving rise to very considerable concern. Because of the continual assessment of the programme and the judicious use of the available resources by the Malaria Institute, the situation has not deteriorated as seriously as in some neighbouring countries. However unless more insecticides are made available soon very grave epidemics will almost certainly occur, particularly in the agriculturally important irrigated areas of North-eastern Afghanistan (Kunduz, Imam Sahib, Baghlan, Khanabad), in Nangarhar, Paktia and in the south and south-west, particularly in the Helmand Valley scheme. The epidemics could reach such proportions that they will seriously affect the agricultural output of these areas and the overall economy of the country as a whole. Lesser epidemics will return in the hill and mountain valley zones as the vector anopheline mosquito re-establishes itself, now that insecticidal spraying has had to be withdrawn.

The vector mosquitos in the east, south and south-west are resistant to DDT and the much more costly insecticide Malathion, is now required to achieve control of malaria in these parts of the country.

In the irrigated zones of the north-east of the country other technical problems with the vector species complicate the application of successful control measures.

The Malaria Control Programme (MCP) in Afghanistan covers all the areas of the country where malaria is endemic and protects a population of

approximately 9 million people in the country. During the past 8 years the situation has deteriorated and over the last three years this has been greatly aggravated by the very steep increase in costs of insecticides, without the corresponding addition to the aid given to the programme from outside sources.

Some idea of the incidence of malaria during the last three years can be gained from a study of the following table. This shows the annual incidence (API = the number of microscopically diagnosed cases of malaria per 1000 population per annum) for the whole country under the MCP, as well as in some of the most important provinces. The total number of cases for each year is also shown.

API% (No. of positive cases/1000 population/year)

<u>Whole country under protection</u>	<u>Kunduz</u>	<u>Jalalabad</u>	<u>Helmand</u>	<u>Taloqan</u>	<u>Total positive cases</u>	
1974	6.7	13.6	8.0	16.2	3.1	60,546
1975	8.8	8.8	88.9	20.4	3.4	80,557
1976	14.3	29.8	123.9	30.3	12.9	127,046

The provinces of Kunduz, Jalalabad and Helmand are all important, highly irrigated, agricultural areas and it can be seen that malaria is increasing rapidly, and this is true of the neighbouring provinces with similar ecologies. The province of Taloqan [sic] is indicative of the hill zones and here too the malaria incidence is increasing significantly. During the three year period the total number of malaria cases in the country as a whole has increased by 110 percent.

This situation requires the application of many anti-malaria activities amongst which the most important are:

a) Residual spraying with insecticides: DDT in the hill and mountain valley zones, and Malathion in the east, south and south-west of the country. However, because of lack of foreign resources, inadequate supplies have been available in 1975-76, and are unlikely to be available in 1977. The Plan of Action for 1976 called for 108 tons DDT and 417.5 tons of Malathion, but only 24 tons of DDT and 196 tons of Malathion were available. During 1977 the insecticide requirements have been estimated at 67 tons of DDT and 347 tons of Malathion, but the most that can be expected are 50 tons and 240 tons respectively.

b) Case finding: This activity is divided into two parts: [as published]

ANGOLA

EXTENSIVE ANTIPOLIOMYELITIS CAMPAIGN TO BE CONDUCTED IN ANGOLA

Luanda JORNAL DE ANGOLA in Portuguese 25 Feb 77 pp 1, 2

[Text] As of next 7 April and at the initiative of the Ministry of Health, an extensive vaccination campaign against poliomyelitis, the clinical condition commonly known as infantile paralysis, will be launched throughout the national territory.

The goal is to create conditions to combat this disease, which traditionally affects a large number of Angolan children because of the apathy that always characterized the attitude of the colonial medical authorities with respect to the elimination of the sources of this disease. In the spirit of unrelenting defense of the public health which the Popular Movement for the Liberation of Angola (MPLA) advocates in its statutes, and which in practice has been initiated in the extensive zones liberated from Portuguese domination, conditions have now been created for a wide-scope offensive against poliomyelitis by means of the vaccination of all Angolan children, particularly in the rural areas, where, in spite of everything, protection against infantile paralysis was always more deficient.

According to the plans of the campaign, all children under 10 years of age will be vaccinated, and the vaccine will be administered by means of a soluble hard-sugar candy.

In more general terms, it can be asserted that this campaign of vaccination against poliomyelitis forms part of the spirit of assistance to mother and child which constitutes one of the principal concerns of the present national medicosanitary activity, and which was even decided on with a certain emphasis during the last MPLA Central Committee Plenum.

Infantile paralysis constitutes a social scourge urgently needed to be eliminated in the People's Republic of Angola, and the campaign which is now to be launched, by reason of its very extensiveness, will be supported by several other ministries and by the mass organizations of the MPLA as a contribution to the effectiveness of the ample task which will be performed in that regard.

This initiative, which will be designated as the First National Vaccination Campaign Against Poliomyelitis, has as its basic goal a reduction of infant mortality because of poliomyelitis and to protect Angolan children in general.

Children: The Future of the Revolution

Children actually represent the future of the country and, fundamentally, of the revolutionary process underway in the People's Republic of Angola.

Much the same as education, public health needs to be protected, and that circumstance assumes particular importance with respect to the infant population, in relation to which the Angolan future unfolds full of responsibilities in the support and the increasing development of the revolutionary perspectives which will permit the national construction of popular democracy and socialism.

In that sense, the First National Vaccination Campaign Against Poliomyelitis, which is essentially preventive in nature and seeks to create the conditions that will make possible a progressive reduction of the causes of infantile paralysis in our country, will bring about a great consolidation of efforts at the level of the various national sectors of activity throughout the territory of the People's Republic of Angola.

The campaign in question will be directed by a national committee which will be composed of representatives of the Ministries of Health and Education, Transport, Communications, the Secretariat of State for Social Affairs; and the Cabinet of the Presidency of the Republic; as well as of the mass organizations of the MPLA, namely, the Angolan Women's Organization (OMA), the Youth of the Popular Movement for the Liberation of Angola (JMPLA), the OPA [expansion unknown] and the National Union of Angolan Workers (UNTA).

Each one of these sectors will contribute, at the level of their respective spheres of activity, to the successful outcome of the campaign.

In fact, because it is a very big task to be carried out in the main Angolan urban centers, as well as in the rural areas of the interior of the country, it requires from the outset that organizational conditions be created which will permit the accomplishment of the vaccinations without wasted time and without a certain number of limitations which the Ministry of Health naturally would have, if it were to depend exclusively on its own means.

To achieve a certain decentralization of the extensive task to be carried out, however, provincial committees will be created to undertake the practical implementation of the vaccination of the infant population at the level of their respective administrative areas. By decision of the Ministry of Health, these committees will be set up locally by each provincial commissar, Provincial Health Office and provincial OMA.

Free Vaccination

The vaccines which are to be administered under the terms of the health policy in effect in the People's Republic of Angola are completely without charge. This is one of the fundamental principles of the task which is about to be carried out in our country, aimed at providing integral and gratuitous medicosanitary assistance to the popular masses, doing away with capitalist exploitation in the field of public health and opening up

new vistas which define the principles of socialist orientation defended by the Angolan people, under the revolutionary guidance of the MPLA.

The Campaign Will Last 3 Months

During this campaign, which will last about 3 months, the cooperation of the popular masses in connection with the task to be performed by the sanitary agents will be indispensable, and, to a certain extent, the very success of this First National Vaccination Campaign Against Poliomyelitis will depend on it.

To vaccinate our children against the threat of poliomyelitis, which constitutes a clinical condition that occurs widely in the majority of African countries and which is responsible for a significant portion of infant mortality in Angola, is an obligation which the MPLA and the medical authorities of our country cannot disregard.

Let us all, therefore, contribute to the limits of our capabilities to the success of this campaign for the protection of our infant population.

Luanda JORNAL DE ANGOLA in Portuguese 1 Mar 77 pp 1, 2

[Text] In accordance with the program of the vaccination campaign against infantile paralysis, a census of all the children who will be subject to preventive vaccination will be started throughout the national territory on 2 March.

As previously reported, it consists of an extensive vaccination campaign intended to combat this disease which is one of the principal causes of infant mortality in our country, and the means to counter it are simple.

The colonial medical authorities never performed a thorough preventive task to keep a large number of Angolan children from being exposed to the harmful effects of infantile paralysis, which affects mostly children under 12 years of age, and it is now up to the national Ministry of Health to carry out an extensive campaign capable of insuring a gradual reduction of the contagion indices of infantile paralysis.

The taking of a census of the children, which perhaps constitutes one of the most important stages of the vaccination campaign, will be done with the special participation of militants of the OMA all over the country, whose contribution will be undoubtedly important to achieve the anticipated results and for the census to be carried out in accordance with the requirements established by the vaccination campaign, in terms of advance estimates.

In each district or rural commune, different groups of OMA militants will take a census of children under 10 years of age at every home by filling

out suitable printed forms on which all the personal data of each youngster will be recorded, to wit, name, age and other information listed on the mentioned questionnaire.

This work must be done most conscientiously because it will serve as the basis of an estimate, as accurate as possible, of the number of children who will have to be vaccinated in each district, region, province and the country itself.

Population Should Cooperate With Campaign

The cooperation of the national popular masses themselves--particularly parents in charge of instruction, who must be fully aware of the usefulness of antipoliomyelitis vaccination and help to have the census of their children done without fail--is of the greatest importance to the entire campaign, but more so to this stage of conducting the census of the infant population in the age group scheduled for vaccination.

The medicosanitary preventive activity for mother and child care represents one of the main concerns of Angolan health authorities for rather obvious reasons: the Pioneers constitute the future of the nation and, in the light of the heavy responsibilities which are incumbent upon them in the development of the revolutionary process underway in our country, special precautions are about to be taken by the MPLA and government officials with a view to their healthy and normal growth.

This vaccination campaign against poliomyelitis forms part of that spirit, and, in that sense, it should deserve the support and the cooperation of all the Angolan people and, most of all, of the revolutionary militants.

In connection with the national vaccination campaign against infantile paralysis, the OMA, mainly responsible for the census work to be started tomorrow, issues the following appeal to all Angolan women:

"The Ministry of Health, in cooperation with the OMA and other mass organizations and state agencies, is going to undertake the First National Vaccination Campaign Against Infantile Paralysis.

"The vaccine will be administered by way of a hard candy to all children under 10 years of age in our country, from Cabinda to Cunene, with the first dose scheduled for 7 April and the second for 3 June.

"To perform such a big task, which is mainly intended to prevent our children from being affected by that disease, it is necessary to determine beforehand the size of the infant population included in the mentioned age group, a job which will be done by the OMA on 2-9 March.

"Thus, in view of the importance that the mentioned census has--for a well-conducted census is the guarantee of a well-managed mass vaccination

campaign--it is essential that the OMA mobilize all the women of Angola who can help by participating within the limits of their capabilities.

"We appeal, therefore, to all mothers, wives, children, grandmothers and aunts to provide their maximum cooperation to the census of all the children.

"To protect the health of the children is to defend the future of Angola."

AUSTRALIA

BREAKOUT OF CHOLERA IN QUEENSLAND

Melbourne THE AGE in English 23 Feb 77 p 1

[Article by David Broadbent]

[Text] Canberra--Australia could be declared a cholera area by the World Health Organisation, the Director-General of Health, Dr. Gwyn Howells, said last night.

Dr. Howells made his warning after a Queensland woman was found to have cholera.

If Australia was declared a cholera endemic area a number of overseas countries would require Australians to be immunised against cholera before they could visit.

Dr. Howells warned all Australians travelling overseas to have cholera vaccinations as a precaution against inconvenience if the WHO declared Australia a cholera endemic area.

The cholera victim, who has not been outside Australia for 13 years, is in a serious condition in the Royal Brisbane Hospital.

Health officials have examined more than 20 people who have come into contact with her. None had contracted the disease and none had had contact with travellers recently returned from cholera areas.

Doctors in Brisbane said the woman appeared to have harbored the disease for many years. A minor illness may have germinated it.

BRAZIL

TEN SUSPECTED CASES OF MENINGITIS REPORTED IN NATAL

Brasilia CORREIO BRAZILIENSE in Portuguese 2 Feb 77 p 5

[Text] An outbreak of meningitis is causing concern among the people of Natal, where 10 persons from three different locations were admitted to the Evandro Chagas Hospital "on suspicion of having meningococcic meningitis," with the result that three of them have died from the disease.

The majority of the cases occurred at Genipabu Beach, 6 kilometers from Natal, where six persons--five of them in a single home--were afflicted.

HEALTH SECRETARIAT SEEKS TO INTEGRATE LEPERS INTO SOCIETY

Rio de Janeiro O GLOBO in Portuguese 7 Feb 77 p 2

[Text] Sao Paulo--The State Health Secretariat is conducting a special pilot project for lepers in the city of Bauru, designed to integrate them into society and to provide them with medical attention in their own homes.

The project, known as the Program for the Reintegration of the Lepers of Bauru (PROREHAB), follows the Venezuelan pattern of assistance to the patients in which social work specialists (paramedics) play a role as important as that of the doctors.

When visiting the patient at home at least once a month, those specialists administer medicines, advise the patients and their families with regard to the disease, conduct epidemiologic surveys among the population, and promote educational programs and vaccination campaigns.

Against Isolation

The project follows the recommendations of the latest international congresses and the Ministry of Health, which condemn any kind of segregation. To that end, a special, nongovernmental entity was created for the purpose of providing employment to incapacitated persons, generally turned down for regular jobs in the area.

At the same time, a survey is being conducted on the patients confined in leprosariums. They will be invited to participate in the program of the entity, and a workshop has been installed for lepers who are refused work by private employers to engage in a remunerative occupation.

The integration of lepers into society is generally hampered by the lack of overall coordination of their activities, of basic directives for a

patient rehabilitation program, on top of the fact that the leprosy service has not been tied to the general medical system up to now, which results in a poor quality type of assistance for the patients.

DISEASES IN AREAS FLOODED BY PARANA RIVER

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 11 Feb 77 p 13

[Summary] Cases of malaria and dehydration have started to appear in areas flooded by the Parana River. A woman died in Port Sao Jose yesterday, presumably from malaria in view of the very high fever she had suffered for days. Four cases of the disease were also registered in Port Rico yesterday. There are eight children presumably suffering from malaria on the Baia River. The waters rose another 30 centimeters in Icaraima, particularly affecting the district of Port Camargo and producing cases of dehydration. Yesterday, 22 women took their children to the prefecture, asking for help to cope with the problem. In addition to that, the children have measles and strange wounds over their bodies. A vaccination campaign against typhoid is already underway in the region.

NEW TEST TO DETECT CHAGAS DISEASE EMPLOYED

Rio de Janeiro JORNAL DO BRASIL in Portuguese 14 Feb 77 p 13

[Text] Sao Paulo--The "Dante Pazzanese" Institute of Cardiology, of the Secretary of Health of the State of Sao Paulo, announced yesterday that it is successfully using a new type of test designed to detect the presence in the blood of tripanosoma cruzi, the unicellular microorganism which causes Chagas Disease.

According to the head of the Zenodiagnosis Center of the institute, Dr Elias Baaainain, about 3,000 tests were done, considered more efficient than the conventional ones, on 500 patients, some of whom were cured thanks to adequate treatment possible after the tests.

The research process consists of allowing the patient suspected of carrying Chagas Disease to be bitten by artificially bred "barreiros" ["kissing bug," carrier of Chagas]. Put inside a special box with an adequate opening, the insects, which are not naturally infected and therefore do not transmit the disease, are put in contact with the arm of the person being examined, sucking his blood, described the doctor.

According to him, "after a month, the insect droppings are examined microscopically, with live tripanosoma cruzi found in positive cases. The test, essential to prove the presence of the microorganism, is repeated monthly, with the purpose of improving the drugs used to combat it."

IMMUNIZATIONS AGAINST POLIOMYELITIS, MEASLES TO BEGIN IN APRIL

Rio de Janeiro O GLOBO in Portuguese 14 Feb 77 p 11

[Text] In April, health centers and posts of the prefecture will begin giving vaccines against poliomyelitis and measles to children 2 to 4 years of age. For this purpose, 2 million doses are being imported at a cost of 1.8 million cruzeiros.

Aside from the centers and posts, the Municipal Secretary of Health will be able to create mobile vaccination units if necessity dictates. According to the secretary, 5 million cruzeiros were spent for purchase of equipment to reequip the health centers, with an end to enlarging service to the people.

Next month, health centers will be opened in Irajá and satellite units in Fazenda Coqueiro (Bangu) and in Cidade Alta (Cordovil).

STATISTICS ON INCIDENCE OF LEPROSY, TUBERCULOSIS RELEASED

Rio de Janeiro O GLOBO in Portuguese 20 Feb 77 p 2

[Text] Belo Horizonte--"It is estimated that there are about 300,000 lepers and probably some 500,000 sufferers of tuberculosis who face social marginalization in Brazil," stated state coordinator of transmittable diseases, Jose Maria Borges.

He revealed that for the last 2 years confinement has not been required for lepers and tubercular patients, who are treated at home. The coordinator explained that with a patient under treatment, practically speaking there is no possibility of transmission of the disease.

Jose Maria Borges explained that infectious-contagious diseases vary according to living conditions, because non-biological variables are just as important as biological ones: unemployment, underemployment, poor nutrition, and promiscuity for example make the disease picture much more serious.

As for transmittable diseases, such as diphtheria, whooping cough, tetanus, measles, and polio, they are being attacked through a systematic improvement in the vaccination system.

ATTEMPTS TO CONTROL MALARIA AND SCHISTOSOMIASIS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 25 Feb 77 p 18

[Text] In Boa Vista the Superintendency of Public Health Campaigns (SUCAM) is developing an intensive campaign against malaria which, according to

health officials in Roraima, has already affected more than 11,000 persons in less than 14 months in this region, the second greatest center of the disease in the country. The work consists of applications of DDT in city residences to eliminate the mosquito which transmits the disease.

In the meantime, SUCAM sources state that the insecticide-spraying teams are encountering difficulties in completing their duties because of the people's resistance. Many persons fear that DDT may be a carcinogenic agent, even though the DDT application was recommended by WHO itself.

Mujai, a village 300 kilometers from Boa Vista, is the area showing the highest incidence of malaria. Recently, of 1,000 persons examined, 200 were ill. When construction of the Manaus-Boa Vista highway was completed, more than 100 of the 400 workers had contracted the disease. In Boa Vista, occurrence of cases is so frequent that doctors are wont to say "malaria here is like colds in the south." Because the shortage of hospital beds is critical, the majority of the sick are usually treated at home.

Schistosomiasis

Minister of Health Almeida Machado will be in Touros, 84 kilometers from Natal in Rio Grande do Norte, the first week in May, accompanied by 20 public health experts, to learn the results of the use in the last few months of a new medicine for schistosomiasis, with the commercial name of Mansil.

According to research done by SUCAM in the municipality of Touros, the wood rat is one of the carriers of *Schistosoma Mansoni*. This result was verified in laboratory tests on wood rats which live in the municipality, known as the location of the greatest concentration of carriers of schistosomiasis in the state.

The choice of the wood rat for these tests was made last December by Minister Almeida Machado. This discovery should facilitate the holding of the National Schistosomiasis Control Campaign, already begun in various states in the north and northeast.

HEALTH MINISTER REPORTS DECLINE IN TUBERCULOSIS INCIDENCE

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 10 Mar 77 p 26

[Text] Brasilia--Health Minister Paulo de Almeida Machado yesterday disclosed that the number of tuberculars in Brazil dropped from 500,000 in 1974 to 300,000 this year. He considered the result as "most spectacular" and said that he is engaged in a more accurate assessment of the decrease of tuberculosis.

Although he still views that reduction with certain reservations, Almeida Machado explained that the Ministry of Health regarded the decrease in the

number of confinements as an improvement in the general situation of tuberculosis in Brazil. That is so much so, he asserts, that the Tuberculosis Hospital owned by the ministry in Belem will be converted into a general hospital.

Almeida Machado also reported that about 10,000 tuberculars were taken care of by the Special Public Health Service (SESP) Foundation last year, 8,500 of whom were totally cured and another 1,500 are still under treatment this year. According to him, the SESP Foundation has adopted ambulatory treatment which makes possible to cure the patients at a cost of 700 cruzeiros each, including expenditures for medicines and the wages of the sanitary agents going from house to house seeking out tuberculars who have given up treatment or fail to show up for appointments.

The drop in tuberculosis, according to the advisers of the ministry, proves the correctness of the Ministry of Health policy of treating the patients in ambulatory fashion, without the need of confining them in specialized hospitals, which increases the cost of treatment. Since last year, the Ministry of Health has been promoting ambulatory treatment of tuberculars and lepers because the medicines available at this time permit the treatment of patients while they live with their families and form part of the community, without danger of transmitting the disease.

Although the Ministry of Health has not conducted any survey to verify the decrease of the disease, Minister Almeida Machado said that he also attributes the drop in the number of patients to the stimulation of the infant vaccination programs, which in late years have had no problems with lack of vaccines to administer to the population.

And, in addition to the ambulatory treatment and the infant vaccination against the disease, another measure to combat tuberculosis currently being used by the Ministry of Health is the vaccination of patients with intradermal BCG, the results of which are still under study.

State Control

After checking upwards of 1,424 clippings from more than 600 Brazilian publications concerning the Ministry of Health, the Cabinet's Social Communications Coordination Office informed Minister Almeida Machado that it had not uncovered any statement from a ministry adviser in favor of handing over Brazilian health and medical services to the states.

The survey comprised material published in newspapers, magazines, pamphlets, printed matter and other kinds of information written in the past 60 days, and it reassured Minister Almeida Machado, who had vowed to eliminate from his team all advisers who had manifested themselves in favor of handing over health matters to the states, which is contrary to the pluralist principle endorsed by the government and adopted by the relevant ministries.

"I am relieved to know that my team is attuned to the government's directives and that, consequently, I can continue to rely on the cooperation of all my assistants," said the minister. The period of verification was concluded last week.

LABORATORIES ESTABLISHED IN NORTHEAST TO COMBAT SCHISTOSOMIASIS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 10 Mar 77 p 44

[Article by Mauro de Carvalho Mello]

[Text] For the purpose of devising a strategy to reduce to a minimum the incidence of schistosomiasis in the country, four places in the northeast were converted into laboratory cities designed to test jointly and separately the weapons available to combat the disease: treatment of patients, control of snails, basic sanitation and sanitary education. As a result of that experience, a massive attack will be launched in 1978 in the endemic areas, where more than 12 million Brazilians are afflicted with the disease. That was the mission proposed by the Ministry of Health, which will spend on the project more than 2.5 billion cruzeiros until 1979. Some steps have been already taken in Touros, Rio Grande do Norte, where the incidence of schistosomiasis, which formerly afflicted half of the population, has dropped to only 16 percent. However, that situation is not firmly settled because conditions which favor the spread of the disease have not been eliminated, and various operational difficulties still have to be confronted. As Minister Almeida Machado himself points out, one is not dealing with a problem similar to that of meningitis, which can be eliminated with a mass vaccination campaign. Among the main obstacles to the program is the low socioeconomic level of the people, who frequently need to resort to fishing for sustenance in contaminated waters of rivers and lakes, where bathing is also one of the few leisure alternatives.

Conclusions Expected This Year

In view of the complexity of the factors involved in the schistosomiasis chain of transmission between man and snail, it is necessary to know if the weapons available to combat the disease must always be employed together, or if in some cases it is possible to obtain good results by using them individually. That answer should be available by the end of the year with the results of the tasks which are being performed in the four laboratory cities of the northeast, where the Ministry of Health is testing the treatment of patients, the control of snails, basic sanitation and sanitary education.

In Touros, Rio Grande do Norte, the oldest laboratory is only providing treatment to the patients, and sanitary education does not extend beyond the minimum of advising the people to bring in excrement for examination and receive medication.

In Santo Antonio das Trempes, Pernambuco, a small community of 800 inhabitants in an area of difficult access, all the homes already have piped water, latrines and laundry tubs. As a corollary, medication, the control of snails and sanitary education will also be used there. In Alagoa de Dentro, Paraiba, the treatment of patients and the use of molluscocides will be the only activities. Finally, Capela, Sergipe, will receive only the basic sanitation already carried out, and the sanitary education currently underway.

Minister Almeida Machado regards as most important a comparison of the implementation of the program with its four weapons, as is being done in Santo Antonio das Trempes, with the application of partial measures consisting of one or two components, as is being done in the other three laboratory cities. "The thing is that we are going to operate in a very large area from Ceara to Sergipe," he explains, "and it could happen that we could be prevented from implementing the total program in all locations because of difficulties of a material nature. If that actually happens, we will be able to insure the flexibility and adaptability of the program."

Another concern of the minister of health relates to the continuity of the Special Schistosomiasis Control Program under future administrations. "We are certain," he avers, "that we will reach the goals established for the next 2 years, but the program will not be completed in that period because there still will be work left to be done in Bahia, Minas, Espirito Santo and probably certain areas of Maranhao. That problem cannot be confronted like the one of meningitis, which was eliminated with massive vaccination, because it is an endemia which requires an attack on a long-term basis." In those circumstances, Almeida Machado says that he seeks to conduct the program with scientific preciseness, setting up solid foundations so that "no one will dare reject it in the future."

The program against schistosomiasis, which still could be modified as a result of the research being conducted in the laboratory cities, basically comprises two phases: the preparatory and the attack. The former consists of the geographic survey of the areas affected by the illness, control of the snail population, and the installation of operation centers for the work of basic sanitation. These have already been instituted in 46 percent of the municipios included in the project.

The attack phase, which will be started next year, consists of the intensive treatment of patients during the most favorable seasons, which will be accurately determined by the surveys conducted until the end of 1976.

BULGARIA

PROTECTIVE MEASURES AGAINST INFLUENZA

Sofia RABOTNICHESKO DELO in Bulgarian 19 Feb 77 p 3 AU

[Article by Zdravka Nikolova, doctor of medicine, head of the National Influenza Center: "The 'Flu' and How To Protect Ourselves Against It"]

[Text] In the last 7 years "flu" epidemics have become annual. This is connected with the more frequent spreading of the new varieties of viruses "A" and "B" to which the population is not immune. In 1975 varieties of the "A" type of virus reappeared in the world. Laboratory research showed that in the serums of our population there are no antidotes against these varieties. This has made the spreading of the virus possible during the winter 1976-77 in our country. In our country cases of acute respiratory infections caused by "flu" became frequent in January 1977. The flu viruses "A" and "B" have been isolated. They are the same as those that are causing flu throughout the world today. The influenza epidemic in our country has not yet spread throughout the country, it does not have the virulence or intensity of great influenza epidemics. So far a "flu" epidemic has been declared in Blagoevgrad and Veliko Turnovo okrugs, in Vidin, Vratsa, Kurdzhali, Lovech, Pazardzhik, Pernik, Pleven, Plovdiv, Sofia, Stara Zagora, Khaskovo, Shumen, Yambol, Turgovishte okrugs and in Sofia City.

CONGO

RECRUDESCENCE OF SLEEPING SICKNESS

Dakar AFRICA in French Feb 77 p 11

[Text] Health: One hundred cases of sleeping sickness, 10 of which were fatal, were reported in the Ngabe area north of Brazzaville.

EAST GERMANY

SURGICAL TRAINING RECEIVES PRIORITY

Bonn IWE-WIRTSCHAFTDIENST in German 3 Mar 77 p 2

[Text] According to Ludwig Mecklinger, GDR minister of health, in future years many more medical students than in the past are to be trained in the

various specialized fields of surgery, so as to remedy the conspicuous shortage of qualified surgeons in GDR hospitals. At a recent central conference of kreis physicians, Mecklinger stated that by 1980 about 7,000 interns, physicians, and dentists will start work, of whom 800 will be engaged in surgery, including surgery for emergency cases and children, 350 in gynecology/obstetrics, and 200 in anesthesiology. According to Mecklinger, GDR health policy is now primarily directed toward making up the losses in terms of material and personnel in inpatient facilities, after past efforts were concentrated on the organization of adequate basic medical care in the outpatient sector.

ECUADOR

TYPHOID FEVER REPORTED IN CANAR

Quito EL TIEMPO in Spanish 28 Jan 77 p 1

[Text] Canar, 27 Jan--More than 20 cases of typhoid fever have been detected in this city, an epidemic outbreak which has exceedingly alarmed the community and could very rapidly spread to other places in the province.

The sanitary authorities are diligently putting into practice the prescribed measures to eradicate the disease, letting the population know about all the precautions that they should take to avoid contagion.

Those afflicted with the disease were treated at the hospital of this cantonal seat. There has been no official report of any fatality.

LARGE NUMBER OF PERSONS BENEFIT FROM VACCINATION DRIVE

Quito EL COMERCIO in Spanish 11 Feb 77 p 24

[Text] Guayaquil, 10 Feb--Dr Silvio Torres Sanchez, chief of the epidemiology department, officially announced the cessation as of this date of all the educational and immunizational activities of the antimeasles vaccination campaign which the Guayas health office started in the rural area on 26 January 1977.

More than 397 villages, places, parishes, communities and hamlets have benefited from this rural sanitary service financed by the Ministry of Public Health, the state agency which is conducting massive programs of human health protection without charge in all the provinces of the country.

The places where children will be immunized against the terrible disease are Samborondon, Tarifa, Bellavista and Las Islas.

FRANCE

VIRAL HEPATITIS OUTBREAK

Paris LE FIGARO in French 16 Feb 77 p 9

[Text] About 100 cases of viral hepatitis have been diagnosed in Labegude-de-Vals (Ardeche Department) and, in spite of the steps taken last week, the epidemic is spreading. Most of the ill are children and young adults. It appears that the water supply is the source of infection and additional tests are being run on it.

GREECE

CHILDREN ENDANGERED BY SPREAD OF INFECTIOUS HEPATITIS

Athens TA NEA in Greek 27 Jan 77 p 7

[Article by Kostas Resvanis]

[Excerpts] Alexandreia--Some 3,000 children in Alexandreia (Gidas) [Imathia Nome] and in the surrounding villages are endangered by infectious hepatitis, which is now endemic in this area! From December to the present, 15 symptomatic cases have appeared, without--fortunately--any of them having developed into a fatality.

"Most likely, only when there is a dead child will they decide to take radical measures...."

"For some time now, we have noticed that all sorts of unsanitary substances have been collecting in the rain water conduits. All of these impurities end up in a stagnant pool a few meters from the school. The children who play there wade in the mire, and for this reason new cases appear every day.

"But how has the rain water 'come together' with such refuse? Very simply, certain fellow-townsmen of ours have joined up the sewer mains of their houses with the central canal, because Alexandreia is totally lacking in a sewer network. Thus, the wastes of hundreds of homes pass through the drains, lie stagnant further on, and result in making our city appear to be a gypsy camp. All of the children here are likely candidates for sickness."

What actions have been taken by the residents?

"For months now, we have sent messages to all quarters. Everyone has understood the magnitude of the danger, but they have all stressed that 'it is a municipal matter.' Now, why the municipality does not take drastic measures is another, very curious, matter. Can it perhaps be that it fears that the names of those who have connected their house mains to the city's network will be revealed?"

Official Admission

[At this point the article reports a memorandum submitted on the problem to the nome authorities by local physicians in early 1975, which was officially forwarded to the Ministry of Social Services.]

The dates show the extent of this indifference: The nomarchy has been pointing out this danger since March 1975! Today, after 2 years, the residents have become aroused. And the parents feel anew every day the magnitude of their anxiety as they put a hand to the foreheads of their children.

Some 3,000 children of Alexandria and the surrounding villages each day risk their health and their life. And it is not only the very young residents of the city. Children from the villages around this city also attend the gymnasium, so that the danger exists that the virus (the doctors of the area characterize it as viral hepatitis) could be communicated to the entire area.

Save Our Children

Khr. Stergiopoulos "gave me a tour" of the sources of this sickness and this shame: Dirty water, mire, and filth at the edge of the town, in the gypsy camps, and a few meters away from the courtyard of the school.

"Even my own child was stricken by this cursed sickness. Had he been any worse I would have lost him. And all that you see is because of indifference and the self-interests of certain people."

Whom do you mean?

"If the appropriate authorities look for it, they will get to the bottom of it. Let be done what can be done, before we have to put on mourning clothes. Look at this slime. It is here that children will come to play. If they put their hands in their mouths they will take to bed like wounded birds. Before long, every home in Alexandria will have at least one sick little child. Let the authorities hear the voice of a father: Save our children...."

Accountability Great

As we have seen, the nomarchy offices are referring the matter to the appropriate municipality.

"The upshot has been that the municipal council has called for the abolishment of the sewer control committee," Dr Oikonomopoulos said to me yesterday.

From the nomarchy to the municipality, from the municipality to the nomarchy.

In our opinion the nomarch ought to give his attention mostly to the following:

Is it true that what we have here is a classic case of bureaucratic confusion, or are there perhaps certain people who are intentionally covering up this matter so that their failings will not be exposed?

Personally, subsequent to the investigation which TA NEA sent me to make, I believe the latter.

Dear nomarch, or dear authorities, whoever you are: Three days ago, Dionysis Karanikolopoulos, 10 years old, became the 15th victim in the last 50 days. He almost did not survive, and he is being treated at the infectious diseases hospital. If tomorrow another child dies, you will be held accountable. Is it the case that you have not properly gaged the magnitude of these accountabilities?

INFANT MORTALITY LEVEL CONSIDERED TOO HIGH

Athens TA NEA in Greek 29 Jan 77 p 1

[Excerpts] The reproductivity rate of Greeks is decreasing! And the most optimistic forecast is that the Greek population will increase at a slow rate in the future.

If, indeed, this is coupled with the flow of people out of Greece, as well as with the high reproductivity of certain of our neighboring countries, then the above realization should cause serious concern.

This warning is an official one, and for that reason, the concern it causes becomes even greater. The warning is contained in the confidential report of the Health Group, which was created under decree of the government by the KEPE [Center for Planning and Economic Research], in cooperation with the Ministry of Social Services, within the framework of the 1976-1980 development program.

At the same time, the Health Group has ascertained:

That abortions, which are done almost freely in our country, constitute to a large extent the means of birth control in Greece.

That the actual dimensions of fetal mortality (from 7 months on up) are unknown, because more than 50 percent of dead births are not registered, especially in the rural areas of the country.

That infant mortality continues to exist at unacceptably high levels.

Infectious Diseases

For infant mortality in particular, the report points out that this is chiefly caused by infectious diseases.

That is, to diseases which can be prevented or treated with success, by maintaining a sanitary environment and by medical-social measures, and also in situations where what is needed for proper treatment is:

A complete organization of nursing care.

Properly trained paramedical personnel.

But in these two basic areas involving the health of the people, we are lagging behind, as is pointed out in the special sections of the report.

In the section on general mortality, the findings of the Work Group are more encouraging:

Whereas the infant, preschool, and to some degree childhood mortality are relatively high, the mortality rate for adults is one of the smallest in the world, a fact which is caused by the low mortality from ischemic disease of the heart: Out of every 1,000 Greeks, 220 are expected to die from coronary and other heart diseases, whereas for Englishmen it is 380 and for Swedes the expectation is 450.

This means that between the ages of 35 and 55 years old, Greek men and women can look forward to more years of life on the average than other Europeans.

It is pointed out that vascular diseases of the central nervous system are the chief causes of death in our country.

HEALTH GROUP COMPLETES STUDY OF DISEASE, MORTALITY RATES

Athens TA NEA in Greek 29 Jan 77 p 5

[Text] Of exceptional interest is the confidential report of the Health Group about which we give a report on page 1. It presents the following "geographical distribution" of mortality in our country.

The largest mortality rate is found in Thraki, while the smallest is in Crete.

The conclusions of the report on mortality rates between men and women and between the country's urban, suburban, and rural populations are of considerable interest.

According to the data of this group:

The mortality rate among men is significantly greater than that among women.

This difference becomes even greater among the urban population--a fact which means that this difference will be intensified in the future.

Mortality from all causes, for all age groups together, is slightly larger in the urban than in the rural population, despite the fact that among young people generally the mortality rate is larger in rural regions.

And this means that medical care, which is definitely better in the urban areas, cannot offset the increased effect of a number of serious diseases in the urban population which are a consequence of the environment of the cities and of the way of life in them.

In its proposals, the Work Group points out that it is necessary to limit abortions, not by effecting legislation, but by an organized enlightening, above all of adolescents and young people, about birth control methods, as well as by distributing contraceptives under medical supervision--despite the fact that their use will be difficult on the part of the young unmarried persons who have a special need for them.

The Work Group emphasizes that especially for late infant mortality and infant mortality, it is not merely sufficient that there be a general raising of social and economic conditions. Rather, what is more immediately required is to raise the medical care which is given and its technological substructure, as well as to increase the number of sister nurses and other health personnel, because infant mortality and the health of the population more usually depends more on the sufficiency of paramedical personnel than on a superabundance of doctors.

According to the findings of this group, the following situation exists, according to categories of diseases:

Infectious diseases: In general, these do not constitute a significant cause of death, but in any event these diseases are more frequent in rural areas, where public health conditions are not good.

And at this point it is noted that the difference in medical coverage between urban and rural areas may play a significant role in infant mortality from acute respiratory infections, which is greater in the rural population.

Cancer of the stomach: Mortality from this cause is greater in the rural areas. And this is a phenomenon which is generally observed in developed countries, for unexplained reasons.

Lung cancer: In Greece, this is the most frequent cancer among men, the chief cause of which is smoking.

The mortality rate from lung cancer is 50 percent higher in the urban areas--a difference which may be caused by pollution of the environment.

Breast cancer: The mortality from this cause is significantly greater in the urban population--a difference which is caused by as yet unexplained factors of living conditions in the cities and in the villages which are perhaps connected with differences in diet.

Cancer of the cervix of the uterus: This is more frequent in the cities, where sexual relations begin earlier as a rule and are more diversified, and where abortions are more frequent.

Cancer of the prostate: This appears with greater frequency in the urban areas, as is also the case in the economically developed countries.

Diabetes mellitus: The mortality from this cause is significantly greater in the urban population.

Ischemic heart disease: Mortality is significantly greater among men and in the urban areas, for reasons which are attributable to the food, to the amount of exercise, and to other psycho-social factors.

Vascular diseases: Vascular diseases of the central nervous system constitute the chief cause of death for Greeks of both sexes, with a significant difference between urban and rural areas.

Respiratory diseases: Chronic respiratory diseases are not more frequent in the urban areas. In fact, the opposite is observed.

This is a fact which can be interpreted as an indication that the indisputable polluting of the environment in the cities has not yet assumed such dimensions as to be able to affect the mortality rate in this sector significantly.

Cirrhosis of the liver: Mortality is greater in the urban population. And this difference is in agreement with the difference in mortality from primary cancer of the liver, which is very frequent in our country.

Traffic Accidents, and So Forth

External causes: Deaths from these causes are of the same frequency in urban and rural areas. Mortality from traffic accidents is predominant

in the urban and rural areas. Mortality from traffic accidents is greater in the urban areas, there is an equal distribution of mortality from falls and other such accidents, and there is a noteworthy greater mortality rate from suicides in the rural areas.

At any rate, it should be noted that the accuracy of diagnoses in Greece is not satisfactory.

As is pointed out in the report, 12 percent of deaths in Greece do not have a scientifically acceptable diagnosis, whereas the corresponding percentages in the Netherlands, England, and Sweden are 3.6 percent, 0.7 percent, and 0.5 percent.

Comparisons

Comparisons among the various regions of the country give the following picture:

Capital area: The overall mortality rate in the capital area is slightly greater than that in the urban population of Greece as a whole.

Relatively higher are the mortality rates from ischemic heart disease, diabetes mellitus, cancer of the breast, of the prostate, of the intestine, and of the respiratory system, as well as from neoplasms of the hemopoietic system.

Mortality from infectious diseases, cancer of the stomach, respiratory diseases, and cirrhosis of the liver is lower.

Stereia Ellas-Evvoia: The overall mortality rate of the urban population in this region is seen to be lower, especially among women. The mortality rates from infectious diseases and from cancers of the prostate, of the stomach, and perhaps of the respiratory system are relatively smaller. On the other hand, mortality from cirrhosis of the liver is higher.

Peloponnisos: Mortality from cancer of the stomach, of the intestine, and of the respiratory system is relatively lower, while in the urban areas mortality from diabetes mellitus, ischemic heart disease, and cancer of the breast is also lower. Mortality from acute infections and from "other diseases" of the respiratory system is greater, as is the mortality, especially in the urban population, from cancer of the uterus and of the prostate.

Among the women of the rural population, mortality from injuries, and especially from accidental falls and suicides, is seen to be greater.

Ionian Islands: The overall mortality is lower in the urban population and higher in the suburban and rural population as compared with the other regions. Mortality is greater from cancer of the prostate, diabetes

mellitus, and other diseases of the circulatory system, and--particularly in the rural population--from diseases of the vessels of the brain, acute infections, and from injuries (mainly falls).

Tuberculosis

Ipeiros: Mortality in the urban population is lower and mortality among men of the rural population is higher. Particularly increased is the mortality rate from tuberculosis and other respiratory diseases, while in the rural areas mortality from suicides is also great. The proportion of deaths which are attributed to uncertain or undiagnosed causes is large.

Thessalia: The mortality rate is lower in the urban population and higher in the rural population. In the urban population, the mortality from cancer of the stomach, peptic ulcer, and cirrhosis of the liver is greater, and in the rural population it is greater for cancer of the stomach, ischemic heart disease (among men), and various respiratory diseases.

Here also, a large proportion of deaths is attributed to uncertain and undiagnosed causes.

Makedonia: The mortality is higher in the urban population and very slightly higher in the rural population. Relatively greater is the mortality from infectious diseases (chiefly infectious hepatitis and, in the rural population, tuberculosis), from cancer of the stomach, of the intestine, of the esophagus, of the respiratory system, and other.

Highest Mortality Rate

Thraki: The highest mortality rate in Greece is observed in this region. Relatively greater is the mortality from infectious diseases (tuberculosis, meningitis, tetanus, whooping cough, and water- and food-borne diseases), whereas it is less for cancer of the uterus and peptic ulcer, and--especially in the rural areas--for cancer of the prostate.

Aegean Islands: The overall mortality is slightly smaller than that in Greece generally, above all in the rural areas and more so among men. Relatively greater is the mortality from cancer of the uterus and of the prostate, and somewhat greater is the mortality from diseases borne by water and food.

Crete: The smallest mortality rate in Greece is observed in this region. This is because of the relatively small mortality from ischemic heart disease, from diseases of the vessels of the brain, and from "various diseases" of the circulatory system, from cancer of the stomach, of the intestines, of the breast, and of the respiratory system, from infectious diseases, and from diabetes mellitus. The mortality from acute infections of the respiratory system is seen to be somewhat greater, especially in the urban areas.

At any rate, it is pointed out in the report that these observations have only an indicative nature, because their value is limited by deficiencies in the death certificates.

But it is stressed that these findings are contributing to the clarification of the problem and to the understanding of what needs exist for each region in the sector of health and medical care.

As a quite radical solution to the problem of medical care, the Work Group proposes the nationalization of health care, which upsets--as it notes--the classical and traditional framework of the free practice of medicine.

PHARMACISTS REPLY TO CHARGES ON HIGH HOSPITAL COSTS

Athens TA NEA in Greek 29 Jan 77 p 5

[Article by Sonia Zakharatou]

[Text] The attempt of Mr Kefalogiannis, deputy minister of social services, to throw the blame for the increase in medical care costs of civil servants upon the pharmacists and those insured was one of the most important issues discussed yesterday in the course of a press conference at the offices of the Pharmaceutical Society of Attiki.

Mr Perkizas, president of the Administrative Council of the society, responded both to statements made by Mr Kefalogiannis and to statements made before the appointed Administrative Committee of the Panhellenic Pharmaceutical Society. He noted: "The deputy minister presents the issue of the increase in medical care costs as a responsibility of pharmacists and those who are insured, and he forgets the continuous price rises for drugs and the fact that other categories of insured persons have come under medical care--and very properly so."

For example, we will mention the case of insulin, which a year ago cost 46 drachmas and at present has reached 130 drachmas. In 1970, 252 million drachmas were spent for the purchase of drugs, whereas in 1975 this sum amounted to 841 million drachmas!

Role of Industries

The speaker continued:

It seems that it is not accidental that this problem has been shifted to the pharmacists or the doctors. The aim of this is to create tension among the public health branches, so that the industries can once again emerge as the gainers.

And the pharmacists are saying:

That the chief blame lies with the Ministry of Social Services, which has never taken into consideration the positions of the public health societies which have been proposing solutions.

It seems that the entire issue of the government vis-a-vis the pharmacists is directly connected to the elections which will take place in the Panhellenic Society on the 30th of the current month. Because as of now the appointed Mr Balezos continues to be its president, and on the ballot the day after tomorrow he is once again contesting for this position and must find support.

Also working for this slate--charge the speakers--is the president of the Salonica Royalist Union, Mr Argyropoulos.

Licenses Rented Out

The law forbids the advertising of any drug. Nevertheless, this ban has never been enforced, and consequently the people are suffering from confusion in regard to drugs, and a dangerous competitive situation is being created.

Furthermore, the freedom from accountability of the Greek market and the large number of packaged brands--10,000 drugs are in circulation!--aggravate the problem even more. It should be noted that in the other European countries, the number of drugs on the market fluctuates between 1,000-1,200 drugs.

Further harm is done by the leased-out pharmacies. Out of 1,400 in Athens, 400 are leased, and many of these operate in an unorthodox manner.

As an example the pharmacists brought up a pharmacy where--as they said--fraud perpetrated against the state was revealed. One day it was closed up and the next it was opened again, leaving many questions unanswered for everybody.

Another panhellenic demand of the pharmacists is the signing of the unified collective agreement with all of the insurance funds.

The pharmacists are also calling for a stable retail price for drugs, and continuous hours of operation of the pharmacies between 0800 hours and 1500 hours.

HONDURAS

POLIOMYELITIS OUTBREAK

Panama City ACAN in Spanish 1934 GMT 12 Mar 77 PA

[Text] Tegucigalpa, 12 Mar (ACAN-EFE)--The Honduran Public Health Ministry today announced that 45 cases of poliomyelitis had been reported in the country as of yesterday. It also expressed its alarm over the incidence of the epidemic in the country.

It said that the cases have been reported over the past 60 days but that the majority have been detected during March.

The authorities said that 22 of the total number of cases were found in Yoro Department, in northern Honduras.

Concern has begun to be noted among the population, which is constantly urged by the news media to vaccinate children under 7 against the disease.

Tegucigalpa VOZ DE HONDURAS in Spanish 1200 GMT 14 Mar 77 PA

[Text] Public health authorities have announced to the Honduran people that the poliomyelitis cases throughout the country have been controlled as no further cases have been reported.

Out of the 45 cases reported, most of the children will probably remain crippled, the same sources said.

The health officials again urged the Honduran population to take their children to the vaccination posts, as it is unfair to expose them to this dreaded disease because of the negligence, ignorance or indifference of their parents.

INDONESIA

BOJONEGORO HEMORRHAGIC FEVER EPIDEMIC WANING

Jakarta ANGKATAN BERSENJATA in Indonesian 26 Jan 77 p 5

[Excerpts] Bojonegoro (AB)--Bojonegoro Regency, East Java, particularly its densely populated areas and areas along the highways, has been attacked by hemorrhagic fever since October 1976. More than 500 persons were recorded as suffering from the disease as of this report.

The majority of those suffering from hemorrhagic fever are children under 15 years of age and 30 percent of all those suffering from the disease are in the serious category or have what is called the D.S.S. (Dengue shock syndrome). Regions heavily attacked by the hemorrhagic fever are the Bojonegoro, Kapas, Balen, Sumberrejo subdistricts and other areas.

At the beginning of November 1976, 20 sufferers were recorded, rising to more than 400 by the end of December but by mid-January 1977 only slightly more than 500 were recorded. Therefore it can be concluded that the hemorrhagic attack in the Bojonegoro area is apparently waning.

IRAN

NEW 50-BED HOSPITAL TO BE BUILT IN DARAB

Teheran RASTAKHIZ in Persian 16 Feb 77 p 2

[Text] A 50-bed hospital is to be constructed in Darab, Fars Province, which will be expandable to 100 beds. During a meeting held in Shiraz, attended by Dr Hoseyn Khatibi, managing director of Red Lion and Sun Society of Iran, and other RLSS officials, the building of the hospital was announced. Attending the meeting were also Dr Farpur, RLSS managing director for Fars Province, and Mansur Sarfaraz, RLSS managing director in Darab.

At the conclusion of the meeting, Mansur Sarfaraz elaborated on the hospital to a RASTAKHIZ reporter, saying that the 50-bed RLSS hospital in Darab will be built on land which the Ministry of Agriculture and Natural Resources has placed at the disposal of RLSS. Dr Khatibi has issued instructions that construction on the hospital is to begin as soon as possible.

He added that the hospital, due to future expectations, will be expandable to 100 beds. With the building of the hospital, the medical treatment needs of the citizens of Darab and the surrounding areas will be met.

DATA ON HOSPITALS GIVEN

Teheran ETTELA'AT in Persian 25 Jan 77 p 3

[Text] According to the latest census of the medical system, there are now 503 private and public hospitals in Iran, with a total of 48,800 hospital beds. Whereas throughout the country there is one bed per 648 persons, in Teheran that number is one per 218 persons.

According to the statistics, of the total number of hospitals, 377--about 75 percent--are public or state hospitals, and 126--about 25 percent--are private. Also, in the public hospitals there are 41,990 beds, while the private hospitals have a total of 6,810 beds.

The number of hospitals in the capital is 121, of which 69 are state and 52 are private. In greater Teheran there is a total of 16,940 beds in state hospitals, and 3,970 beds in private hospitals.

Of all the hospitals in the country, the Red Lion and Sun Society has the most, running 40.6 of the total. The Ministry of Health has 13.2 percent, 7.4 percent are run by universities, 25.2 percent by private foundations, and 13.6 percent by government or government-related charities.

The number of specialized hospitals, according to type of activity, is broken down as follows: 13 pulmonary, 16 psychiatric, 8 for drug addicts, 6 for the mentally handicapped, 3 cancer, and 2 for mentally retarded children.

BROAD VACCINATION PROGRAM PLANNED

Teheran ETTELA'AT in Persian 30 Jan 77 p 3

[Text] Health centers, numbering over 1,000, are being set up at various points throughout Teheran to carry out vaccinations of children against polio.

In carrying out the public vaccination program, which will begin the first part of February, 400,000 Teherani school children covered by the health measures will be vaccinated.

The Central Province Regional Health Organization announced today that the public vaccination program against infantile paralysis has been prepared and will be carried out during the second half of Bahman [21 January-19 February].

According to their program, about 400,000 kindergarten and elementary school children will be vaccinated by health officials of the Central Province Health Organization. For this purpose 1,000 permanent and mobile centers will be established in hospitals, clinics, schools, and shopping centers.

In addition to these groups, health officials will go to people's homes to vaccinate children there.

An official of the Teheran Health Organization said regarding this matter that health information for parents has been printed and will be sent by officials to families. Parents are urged, for the sake of their children,

to take them to health centers and clinics to be vaccinated against polio. According to the outlined program, Teherani children must be vaccinated three times: the first time during the second half of Bahman, the second time during Ordibehesht [21 April-21 May], and the third time during Khordad [22 May-21 June].

Concurrent with the polio vaccination program, the Central Province Health Organization is requesting, especially during the cold season, that people also have their children vaccinated against diphtheria, tetanus, whooping cough, and measles. If this was done last year, they should notify their local vaccination official.

NATIONAL HEALTH CARE AND WELFARE PLAN

Teheran TEHRAN JOURNAL in English 28 Feb 77 p 4

[Article by Ali Reza Jahanshahi]

[Text] To signify the attention national budget experts and planners have focussed on the nation's health care and the provision of various kinds of social welfare, it's enough to note that a total of 162,080 million rials is earmarked for these sectors in 2536 national budget. The same sectors received a total of 121,817 million rials in the current year.

It is also noteworthy to take notice of the total amount spent on these sectors last year--99,055 million rials--which indicates that over a two-year period, spending on these sectors has increased by more than 1.5 times.

Although the reasons for this increased attention should be quite clear to any objective observer of Iran's social development trends, nevertheless, it is important to remember that in order to have a progressive and advancing society, it is indeed vital that its members enjoy the best possible health and social welfare facilities.

The other fact that has attracted the attention of budget planners is that with the national trend toward urbanization, larger groups of people, unlike in the past, are now in daily contact in the cities and this has accentuated the need for preventive actions in regard to various diseases.

The other vital element noted fully in the budget is the essentiality of proper food for the people. This was the driving force behind His Imperial Majesty the Shahanshah's decree providing school children with one properly balanced meal a day at school. This plus the provision of free medical care for the people have formed the foundation of next year's spending on health and social welfare.

The far-sightedness of the national social planners is apparent in the manner in which family planning has been receiving close attention over

the recent years. This is not to say that the population of the country at the moment is too large or that Iran is faced with a problem arising from population explosion. It simply indicates that we are going to be prepared for the coming decades, and that we hope to be already meeting the various socio-economic needs of the future generations of the country according to long-term plans.

In the coming year, a total of 2.324 million rials will be spent on family planning which compared to the allocation in the current year of 1.878 million rials indicates considerable increase. The money is going to be spent on a number of wide-ranging projects from providing the female population with the kind of check-up and advisory services that they require in their efforts in not having unwanted babies, to the provision of medical accessories such as contraceptive pills. It is forecast that such services would be provided to 15 million callers at the family planning clinics and institutes across the country.

Educating the people in the proper methods of family planning and the socio-economic benefits of having smaller families will also be receiving close attention in 2536 and more attention is going to be paid to urban female population--fully three million of them will be provided with advisory services. Still in the same field, 200,000 members of revolutionary corps will also be provided with adequate training in advance so that when in the country's urban regions, they will be able to provide these services to the indigenous population.

In addition to this training program, another 5,000 technical medical staff will also be trained.

In the field of preventive medicine and hygiene services, the Government plans to spend 10,088 million rials over next year. The main projects in this field include the continuation of nationwide efforts aimed at finding isolated cases of venereal diseases, tuberculosis, leprosy and intestinal infections for a total of six million people, continuation of fight against other types of illnesses through administering 40 million doses of vaccines, construction of 36 hygiene centers in the cities and the start of construction of another 400 such centers across the country.

A total of 36,575 million rials will be spent on establishing the necessary facilities needed for increasing the number of hospital beds. It is planned to complete the current work for setting up a total of 16,000 hospital beds while another 3,400 hospital and sanatorium beds would become operational. This year, only 28,677 million rials was spent on this objective.

A major reason that has always encouraged the emigration of rural population to the country's urban centers has been the scarcity of medical facilities. In the past several years steps have been taken to combat this shortage and in the same line, a total of 9,486 million rials will be

spent on constructing 800 rural medical and hygiene centers, re-equipping another 200 rural clinics while another 1,800 rural clinics would start functioning in the same period. The budget allocation in this field has increased by about 50 per cent over current year's allocation.

The proper feeding of babies, mothers and school children will receive 16,246 million rials in 2536, and specific objectives to be carried out include providing one properly-balanced meal to 7.3 million school children across the country while a total of 50,000 babies and 50,000 mothers will also be provided with nutritional advice and food.

Realizing the need for continuous research on new methods of improving hygiene and nutrition, a total of 881 million rials is earmarked for research projects in 2536.

In the field of social welfare, the state plans to realize a wider spread of various kinds of social insurance such as medical, unemployment, retirement, and life insurance. Families without breadwinners will also be receiving close attention.

A total of 48,300 million rials is earmarked for the provision of social insurance to workers in the country. The total number of workers and their family members to be covered by such insurance in the next year is set to reach 1.9 million while another one million workers will be covered by indirect health insurance and enjoy the same kind of amenities like Government employees.

Social insurance for the rural population is going to receive 448 million rials in 2536 and the money will be spent on extending social insurance to rural population from this year's figure of over 650,000 to 1.2 million.

Government employees and the retired ones and their families will also receive greater attention in respect of social insurance. By spending 24,651 million rials next year, the Government plans to increase the number of Government employees and their families covered by medical insurance from 2.2 million this year to 2.7 million by the end of next year.

Welfare services which are aimed at providing some of the basic needs of groups which because of various reasons are not in a position to enjoy them are going to receive 6,441 million rials next year, and the main programs planned for 2536 are setting up day nurseries in regions populated by lower income working class families; looking after orphans in special permanent centers where they are taken care of from birth to the time they reach maturity. The construction of 21 childcare centers in central Mazandaran, east and west Azarbaijan, Kermanshah, Khuzestan, Fars, Kerman, Khorassan, Isfahan, Hormozgan, Sistan and Baluchestan, Kurdistan, Hamadan, Lorestan, Zanzan, Chaharmahal Bakhtiari, Yazd and Bushehr provinces will be completed while a special children's summer camp will also be set up.

In addition to these centers, feasibility studies for the construction of 20 various centers for children will be carried out in the cities of Damghan, Hamadan, Borujerd, Ahvaz, Khorramshahr, Tehran, Isfahan, Kerman, Zahedan, Kermanshah, Zabol, Iranshahr and Farahabad Sari. A total of 15 family welfare centers will also be built in the cities of Hamadan, Shiraz, Ahvaz, Isfahan, Kashan and Bandar Abbas while 14 socio-cultural centers for Government employees will be started in various cities.

A total of 4,095 million rials will be spent on caring for handicapped people and the state plans to carry out the following projects in this respect:

- The completion of Karaj Agricultural Center for the physically-handicapped.
- Start of construction of a special center for the deaf and the dumb in Karaj and Ahvaz.
- Construction of 12 special centers for retarded children.
- Construction of centers for blind people in Qom, Mashad and Ahvaz.
- Renovation of Tehran's Khazaneh vocational center.
- Construction of a special center in Tehran to look after 400 physically-handicapped people.
- Construction of centers to take care of minor delinquents in Tabriz, Ahvaz, Isfahan and Shiraz.
- Construction of a center in Tehran to look after the [word illegible] with incurable illnesses as well as mental patients.
- Construction and renovation of a physiotherapy center in Tehran.
- Completion of Zahedan's vocational training center and completing other such centers.

A total of 155 million rials will be spent on encouraging people to volunteer their services.

KENYA

FIVE DEAD IN CHOLERA OUTBREAK

Kampala VOICE OF UGANDA in English 1 Jan 77 p 1

[Text] The new outbreak of cholera in Siaya District, near Kisumu in Kenya last month, has killed five people and over 150 cases are believed affected by the killer disease.

During Christmas time the people of Siaya District were ordered to celebrate indoors due to over spread of the epidemic disease to other parts of the country.

Before the outbreak of cholera a ban on funeral celebrations and other tribal gathering had been imposed.

There is no free movement out of the district unless cleared out of cholera by the officials. Suspension of leaves for government officials in the district has also been imposed until the disease is completely under control.

The government claims that it has spent about 20m/- in the province to fight the disease but it seems as if the fight has failed.

Most hotels, schools, bars, and other places without proper sanitary facilities their licences are cancelled and will not be renewed or permitted to function unless required instructions about anti-cholera campaign measures are followed. [sentence as published]

MALAYSIA

NEW STRATEGY TO FIGHT DENGUE TO BE ADOPTED

Kuala Lumpur NEW STRAITS TIMES in English 27 Feb 77 p 10 BK

[Text] The Ministry of Health is adopting a new strategy to fight dengue, its acting director-general, Dr Raja Ahmad Noordin Shabuddin, said today.

The ministry will carry out "intensive" antidengue campaigns every 3 months beginning in April, he said.

The present year-round campaign has been found to be ineffective, he added.

All state health departments will be asked to submit plans of action to the ministry for preparing a nationwide campaign.

Under the new campaign, the ministry will encourage the people to use "Abate," the chemical strongly recommended by the World Health Organization for preventing dengue.

Dr Raja Ahmad Noordin said the conference on the review of the antidengue campaign, which ended today, had found that one of the main reasons for the failure of the year-round campaign was the lack of Abate.

The other was that there was no effective enforcement of the Disease-Bearing Insects Act against those found breeding the aedes mosquito--the dengue fever carrier--by local authorities.

To overcome these problems, the conference has recommended that Abate be available at all clinics and health centres and local authorities, and that effective enforcement of the act be carried out in cooperation with the Ministry of Local Government and Environment.

Dr Raja Ahmad Noordin said that a total of 51 cases and four deaths had been reported since the beginning of this year.

The majority of the cases were from Selangor and the Federal Territory, therefore, the conference had recommended that the whole of Selangor be gazetted under the Disease-Bearing Insects Act.

He also said that dengue would be prevalent in May. This forecast was based on the trend of the dengue epidemics in the past.

NICARAGUA

NEW POLIOMYELITIS CASES BRING TOTAL TO 27 FOR YEAR

Managua RADIO CORPORACION in Spanish 1720 GMT 2 Mar 77 PA

[Text] The Health Ministry has reported three new cases of poliomyelitis in children under 3 years of age. The first case was that of a baby girl of just 3 months who has been under observation since last week. The other two victims are 20 months old and 2 1/2 years old.

The tragedy lies in the fact that, despite the large-scale propaganda campaigns for mass vaccination against poliomyelitis, none of the three small victims has received even one dose of the lifesaving vaccine.

With these three new cases, the tragic list of children struck by poliomyelitis increases to 27 so far this year.

PERU

SMALLPOX ERADICATED

Lima EL COMERCIO in Spanish 9 Feb 77 p 1

[Text] Not a single case of smallpox has been registered in the entire national territory in the past 10 years, which means that that dreadful disease has been definitely eradicated in the country.

The chief of Transmissible Disease Eradication and Control, Dr Pedro Russac Poves, said that this achievement is due to the extraordinary effort exerted by the Ministry of Health in its fight against smallpox.

He stated that by the elimination of that scourge, which in other regions causes the death of one out of every four persons, Peru "has helped to demonstrate that the eradication of smallpox is technically feasible."

He explained that the task performed by the Ministry of Health in that respect has basically consisted of well planned and executed nationwide vaccination and sanitary education campaigns.

1976 POLIOMYELITIS FIGURES REPORTED FOR LIMA AND CALLAO

Lima LA CRONICA in Spanish 8 Feb 77 p 4

[Excerpt] The provinces of Lima and Callao registered 77 cases of poliomyelitis last year, three of them fatal, according to an announcement made by the Health Region of Metropolitan Lima.

The same source points out that the incidence in question is the result of the neglect of parents who do not have their children vaccinated. It adds that one case of this nature has already occurred so far this year, which indicates that the scourge of poliomyelitis will continue to undermine the health of our children if the indolence persists.

Regarding its task, the Health Region is determined to give effect to the programs to protect the children by means of vaccination against such diseases as poliomyelitis, measles, whooping cough, diphtheria, tetanus and tuberculosis.

SAUDI ARABIA

MALARIA ERADICATION EFFORTS COORDINATED WITH YEMEN

Riyadh AL-RIYADH in Arabic 22 Feb 77 p 2

[Text] A Saudi-Yemeni work group has been formed to combat malaria and to increase the number of malaria control stations in some parts of the kingdom. New malaria control stations have also been set up in Bishah, Maha'il, al-Layth and a number of other areas in the kingdom.

Ahmad al-Zunaydi, the assistant director of the Malaria Eradication Administration, made this statement by AL-RIYADH, adding that the administration is persistently trying with all its might to eradicate malaria. To achieve this, new malaria control stations have been set up in Bishah, Maha'il, al-Layth, Najran, and al-Ha'it, which is within the jurisdiction of Najran Province. Other stations are being set up in al-Qunfudhah and al-'Aridah, which is within the jurisdiction of Jizan. He added that the Ministry of Health will form a central group in Riyadh, consisting of specialists and technicians. One of the tasks of this central group will be to provide the stations with the specialists and technicians that they need in the field of malaria control. The central group will also re-survey the central province to make sure that it is free of malaria. Al-Zunaydi added that the ministry is attempting to organize and coordinate the work among the various stations existing in the country. This is why the directors of the control stations held a meeting in which they discussed the conditions, problems and needs of the stations, their work plan and the means to develop malaria control in the future. They formulated a number of recommendations which will have a big impact on malaria eradication. Moreover, a Saudi-Yemeni work group was formed in the wake of the meeting between the Saudi and Yemeni health ministers. The team has already surveyed the border area and familiarized itself with the malaria situation there. Branch malaria control stations will be set up in the border areas to carry out the work necessary to curtail and eradicate malaria.

ANTICHOLERA AND SMALLPOX CAMPAIGNS

Riyadh AL-RIYADH in Arabic 9 Mar 77 p 2

[Report by Mansur 'Ali Ahmad]

[Text] The Ministry of Health is organizing a cholera vaccination campaign which will be conducted next month. Hospitals and health centers have already been supplied with large quantities of the vaccine. The anti-smallpox vaccination campaign was completed recently in the southern area of Riyadh. Dr Hashim Salih al-Dabbagh, the general director of

preventive medicine, has stated that the anti-cholera vaccination campaign which will be carried out next month does not mean that there are any cholera cases in the kingdom. It is only intended to boost the citizens' immunity against this disease. The Ministry of Health has supplied all the health establishments in the country with the vaccine and has asked them to begin vaccinating the citizens as of the beginning of the month of Rabi' al-Thani. Dr al-Dabbagh also stated that the Ministry of Health and the preventive medicine section have completed the smallpox vaccination campaign in al-Kharj area and in the southern area of Riyadh and that this disease disappeared from the country more than 12 years ago.

SOLOMON ISLANDS

SUCCESS REPORTED IN CONTROLLING MALARIA

Kampala VOICE OF UGANDA in English 24 Mar 77 p 5

[Article by Mehr Kamal: "The Solomon Islands Are Winning Their Malaria Battle"]

[Text] Editor's Note: After nearly a decade of spectacular success in malaria control the World Health Organisation (WHO) reports a resurgence of the disease in many parts of the world. In the Solomon Islands in the Pacific, however, the authorities are winning their battle against the disease. A VOICE News Service correspondent files this despatch from the Islands' capital, Honiara.

The British Solomon Islands Protectorate, a scattered archipelago of mountainous islands and low-lying coral atolls 1,200 miles north of Australia, has achieved good success in controlling malaria which was rampant on the islands only six years ago.

Although the Solomons have not "licked" the disease yet, they are on the verge of doing so and are very conscious that any relaxation of effort at this stage could undercut the success achieved so far.

A similar relaxation of effort in some countries and not enough attention to the problem because of excessive cost in others, has led to a worldwide resurgence of malaria even in areas where it had been dramatically reduced.

Malaria has proved to be very stubborn, defying all calculations and time limits set for its eradication. In many areas of the world it is hampering development efforts and taking a devastating toll of the health of the people, especially mothers and children.

In Africa an estimated one million children under the age of five are dying every year from malaria. In India the incidence of the disease had fallen to 100,000 cases by 1965 after an intensive eradication campaign. But by 1975 the figures had climbed back to five million.

Setbacks have also occurred in Latin America.

Malaria, with its high fevers, frequent deaths and debilitating after-effects, is caused by four different species of parasites, transmitted from person to person by the Anopheles mosquito. Its eradication is a complex and costly operation involving clearing all areas of the mosquito and interrupting the transmission cycle of the parasite long enough to allow it to die off. The situation is further complicated when mosquitoes develop an immunity to insecticides and the parasite develops a resistance to drugs.

In the Solomon Islands malaria control is mainly a problem of logistics, as the mosquitoes have not yet developed an immunity to insecticides and the parasite can be killed with drugs.

The islands are extremely scattered and the population very mobile--it is common for families to own two or three houses in different places and to move from one to another, nullifying attempts to track down and treat them.

The children are the most vulnerable--an estimated 60 per cent or more of those who suffer from malaria are children under 15. The younger ones who do not wear clothes are especially exposed to mosquito bites at dusk when they play outside.

In spite of these problems, one of the country's four divisions--the Western District--has already been cleared, and a case-detection system is mopping up the last few infectious cases there. In two other areas, Malaita and the Eastern District, the incidence of malaria has been drastically reduced.

Before the start of the programme malaria was the major killer disease and between 40 and 60 per cent of the people in the islands suffered from it. So difficult was it to get away from mosquitoes and malaria that people in Malaita built artificial islands on the floor of lagoon. Coral boulders were transported from the reef to make up an island, far enough away from the main land to afford protection from the insects.

The largest of these artificial islands, Sulufou, is in the Lau Lagoon of Malaita and is 80 yards long and 30 yards wide. It is surrounded by smaller islands, some of which have only one house.

An intensified malaria eradication programme began in the Solomons in 1970 and the entire malarious area of the Protectorate was sprayed for the

first time in 1972. The Government spends half a million Australian dollars every year and employs hundreds of people to carry out spraying and surveillance.

The effort has paid off. Malaria has now been reduced to two per cent and most cases are confined to the northern Guadalcanal coastal plain, including Red Beach and other swampy areas which saw some of the fiercest fighting in the Pacific during World War II. Many American and Japanese soldiers died here from the disease.

The rapid improvement in the malaria situation has resulted in some complacency to the control effort. Dudley Cook, Clerk to the Malaita local council, says: "People are rapidly forgetting what malaria was like. This is making the programme difficult at this stage." More and more people resist having their houses sprayed with DDT as malaria loses its immediate relevancy to them.

SUDAN

EFFORTS TO COMBAT MALARIA IN AL-JAZIRAH OUTLINED

Khartoum AL-AYYAM in Arabic 15 Feb 77 p 3

[Text] Malaria is a chronic disease that has a malignant microbe which gnaws at [people's] bones. It was not a nightmare that threatened us and impeded our course in this great pioneering province, thanks to the closely knit and united efforts to eradicate it completely. In order to set off the major role that the Malaria Campaign Administration played, we must review together the report that the Administration of the Malaria Department in al-Jazirah prepared about the fight against malaria.

The plan drawn up by the World Health Organization [WHO] for fighting malaria stated that the pesticide malathion be sprayed on the inside walls of homes throughout the province. The first malaria eradication experiment began on 21 June 1975. [It was to be done] in two stages during the year. The third experiment began on 21 June 1976. It can be said that through these three experiments the Fight Against Malaria Program in the province of al-Jazirah altered the pestilential nature of the disease in the province by controlling the contagiousness of malaria during the traditional peak period. This was in spite of the occurrence of some changes in the game plan. These changes took place as a result of unexpected circumstances which may be summarized [as follows]: the lack of fuel for some time and the delayed arrival of pesticides from the harbor to the province.

Pestilential Assessment

After spraying operations were completed, blood survey units took action to evaluate the pestilential condition of malaria. A number of villages throughout the province were selected; and their representativeness was considered. The blood of children ages 2-9 was surveyed. The result of this survey was tantamount to basic information upon which future pestilential evaluation can be based. After the first round of spraying was completed in 1975, a blood survey was conducted for the same villages. A comparison of [the results of the two surveys] revealed a direct decline in the contagiousness of malaria. A blood survey was also conducted at the same time and for the same villages and age [groups] after the first spraying stage in 1976--the pestilential evaluation statement clarifies this. The continuing decline in the contagiousness of malaria will also be noted--the table below explains this.* For the first time a blood survey for infants in selected villages was also carried out during this first stage as part of the pestilential assessment. [This was done] to find out [the extent of] the continued transmission of infection in the province and compare it with entomological reports. That was a rate of 1.1 percent. The rate was zero in 22 out of 26 villages. This affirmed that the transmission of infection had stopped in about 85 percent of [the cases] in the province. An entomological and a pestilential study of the four villages where cases of malaria among infants have appeared will be made.

Entomological Assessment

The purpose of entomological assessment is to measure the effectiveness of the pesticide that is used in selected villages to kill the malaria carrying mosquitoes. Its second purpose is to conduct tests to measure the sensitivity of the [disease] carrying mosquitoes to the pesticide which is being used.

The third purpose is to conduct tests on surfaces which have been sprayed in order to determine the relationship between the spraying and the fatal dose. All these tests are important in investigating a disease.

The Results of the Investigation

In general, the density was low. [The disease] began in the villages known for their high density before long-term pesticides were used. Most villages yielded negative results in spite of the fact that more than 6 weeks had gone by since the spraying began.

But the sensitivity and vitality tests were not measured because the mosquito density required to complete these tests was lacking. This was also proved by studies of the habits of carrier mosquitoes in fishing grounds.

[*Table not reproduced]

Entomological studies undoubtedly have their important role in malaria combating operations. We were hoping that the entomological department would expand its activities so as to include most of the villages in the area. Considering the shortage of fuel, however, we have restricted the work program of this department to what is very essential.

Conclusion

We had previously alluded to the importance of seriously fighting the disease of malaria in the province of al-Jazirah. We are grateful to God for [helping us] achieve this by providing the necessary requirements. As the fighting campaign began with the use of long-term pesticides and drugs, we had to monitor the infectiousness of the disease in order to compare it with the efforts that are being spent in order to determine the work grade and means. This is to be done by means of the following:

1. Entomological survey
2. Evaluating the contagiousness of malaria
3. A blood survey for children 2-9 years old
4. A blood survey for infants

We are also in the process of introducing another method for measurement: conducting a survey of the percentage of spleen enlargements among children 2-9 years of age. Malaria laboratories throughout the province are also conducting an analysis of blood samples of fever cases. They are recording the positive rate among these cases. We are also watching the number of fever cases that are being treated inside hospitals.

Together, all these measurements determine for us the efficiency of the methods used in fighting malaria. We must also study the work plan this year regarding the changes that have taken place in the dates on which the spraying campaigns began because of the obstacles that were mentioned in this report. We must also review the number of spraying rounds that are necessary.

After it conducts more studies, these decisions will be left to the Malaria Administration at the Ministry of Health. Central capabilities are, until now, considered inadequate. We recommended that the number of malaria laboratories in the 1976-1977 budget be increased and that jobs to manage them and to strengthen the Malaria Central Review Laboratory in Madani be created. Unfortunately, this was not approved in this year's budget, and that will increase the burden on existing laboratories. We have also asked approval for construction of a building for a malaria department in the province, but it too was not approved in spite of the fact that all the inspectors and the officers who are employed in the fight against malaria have no offices or [business] housing. They conduct their business from their [own private] homes whose rent they pay out of their own pockets. Those who are working in the Wad al-Shafi'i area are an exception. Offices and housing had been built for them in the 1974-1975 budget.

The Pestilential Nature of Malaria

Providing remedies for malaria in health institutions is a supplementary method for fighting malaria. It must be pointed out here that these remedies are also available in privately owned pharmacies throughout the province. But it might be noticed that the disease of malaria is more than the cases that occur during a [given] year. These cases are always accompanied by severe complications of nausea and high fever that could lead to a loss of consciousness. Therefore, the notion of studying the effectiveness of the drug (chlorchoine) against the prevailing parasite came into being. We are proposing that a scientific study be conducted as soon as possible so we would not be surprised to discover [that the parasite] is immune to the pesticide that is being used. Finally, this is the third report in 2 years since the campaigns for fighting malaria began in the province of al-Jazirah. There can be no doubt that the return from the experiment is clear for citizens, for workers and for increasing production in all facilities.

TOGO

LEPROSY PROGRAM DISCUSSED

Lome TOGO PRESSE DENYIGBA in French 31 Jan 77 pp 1, 3

[Excerpts] Col Djafalo, minister of public health and social affairs, calls for social and actual rehabilitation of lepers. World Leprosy Day was celebrated on Sunday, 30 January 1977. Once again, it is apparent that the problem of leprosy goes far beyond the boundaries of our continent. It has for decades encompassed the entire world.

We owe this day to the famous and imaginative practitioner of charity, the French philanthrope Raoul Folereau, whose historic appeal in 1954 continues to resound throughout the world. This 24th World Leprosy Day should constitute an additional reason for us to mobilize for a new spirit of solidarity. But in particular, it should enable us to make an accounting in order to determine what each individual was able to do to alleviate the suffering and misery of lepers. General Eyadema's government, which is aware of its responsibilities, is not sparing any effort to continue the fight against all the diseases that are still ravaging rural and urban areas. The restructuring of the leprosy service continues thanks to the active collaboration of our friends from CATHWELL and a number of German volunteers. It should reach all regions of the country in the very near future and thus permit rapid detection of all cases and administration of adequate therapy. It should be noted here that encouraging results have been obtained. Togo has more than 7,000 lepers. The disease is managed in more than half of these patients; some of them have been placed under

observation for therapy with a view to being permanently controlled. They will be able to take their place in society once again and make their contribution to the national construction. Others are still under supervision, patiently and regularly taking their treatment because this is the price of recovery. They must rid themselves once and for all of the complex which turns them into quasi-pariahs. As we have said, leprosy, this secular historic disease, is a disease just like any other. Moreover, this old belief which makes cursed beings out of these unfortunate individuals should be refuted at every opportunity.

All of these favorable results have been obtained thanks to the good will and understanding of all of you. The pioneers in this fight are all of those, large and small, who have worked every day for the improvement of our "leprosy" brothers. Among them are the scientists, the indefatigable and persistent investigators who are performing detailed studies in their laboratories to discover new drugs that are better suited to the management and prevention of the disease.

The essential factor at this time is the social and actual rehabilitation of all the cured patients. Each of us must stretch out a hand to them without pride or any idea of complexes, so that they can regain their confidence. In a world torn apart by egotism, are there still men of good will dedicated to the creation of a society where life is good? In this regard, we can say that many things have been accomplished but there is still a long way before the final victory will be achieved.

Lome TOGO PRESSE DENYIGBA in French 4 Feb 77 p 4

[Excerpts] Particularly encouraging results have been obtained in the areas of hygiene, public health and physical and moral welfare. Even though the road is still a long one, we are justified in rejoicing with the minister of public health and social affairs, Col Menveyinoyu Djafalo. With regard to the battle for eradication of leprosy, "the results obtained are encouraging." This was his observation in a message presented on the occasion of the 24th World Leprosy Day.

It was on this occasion that we met Father John Connolly, director of CATHWELL in Togo, for a conversation on leprosy and the battle against leprosy being waged by the CATHWELL Project under the direction of the Ministry of Public Health.

We know that CATHWELL, the American Catholic agency dedicated to foreign aid and development, focuses its attention on promotion of self-help projects dealing with foodstuffs, infant nutrition and the national campaign for leprosy control, among others.

Leprosy is not very contagious; at any rate it is much less so than small-pox.

Father Connolly emphasized that the form of leprosy representing the principal cause of contagion constitutes less than 10 percent of the total number of cases in West Africa. Consequently, the disease does not require the isolation which is at present outmoded. Moreover, leprosy is not hereditary and it is less severe than the diseases encountered here, such as malaria and tuberculosis. Leprosy does not kill. Nor does it cause epidemics. From the epidemiological standpoint, leprosy is less serious than for example cholera or measles.

The reason that it is feared and important and that it must be stringently combated is that it can make the patient disabled and mutilated, to the point where he becomes a social case.

A Disease Like Any Other

One of the tasks incumbent on the personnel involved in controlling leprosy in our country consists of combating the entirely unjustified prejudices surrounding leprosy. These are as old as man himself.

Patients suffering from leprosy must be accepted as human beings enjoying the same rights in the Togo community, as was advocated 10 years ago by the New Togo's Guide, General of the Army Gnassingbe Eyadema. The Togo Government in the person of the minister of public health and the German Volunteer Service (DED) administered by CATHWELL are devoting their attention to this point.

A Well-Organized Project

Under the direction of Public Health, i.e. of the Department of Major Endemics, a national campaign for the control of leprosy has been organized in Togo. This is CATHWELL's most important project in our country.

The pilot project involving the systematic detection and treatment of leprosy is financed by the "Deutsches Aussatzigen Hilfwerk," or the German Association for Aid to Lepers.

The project is being implemented here by 14 volunteers from DED who are nurses, and 60 Togolais aides. The group is headed by Father Schaller, who is a technical assistant in the Department of Major Endemics. He supervises and trains the project personnel. He also gives courses at the University of Benin to physicians and future physicians.

CATHWELL administers the personnel and manages the budget for the project.

This project, which started in 1969 in the Kara region, now covers some 15 zones in the north, as far as Notse. This year, it was to extend to the area of Tabligbo and then Kpalime, to cover the entire maritime region.

Father Connolly pointed out that the project is well thought out and effective because the Public Health Ministry handled the organization of this battle against leprosy in a very efficient manner. He is aiming for exhaustive detection and total eradication of this disease.

The plan of action calls for consecutive attention to each area and the building of a small center including a laboratory, an office, examination room and storeroom. A mobile team of one or two nurses and at least five Togolais paramedical assistants will be set up to cover each village.

Education, Detection, Control

The method of operation includes three stages. First, there must be an education campaign on leprosy for the population. The causes of the disease and the possibilities for recovery must be explained. The superstitions and prejudices about the disease, which were mentioned above, must be made to disappear. That is the first assignment for the mobile team which will visit the schools and villages.

Then there is the stage of detecting the leprosy cases. A list will be made up of the individuals showing symptoms of the disease. These patients will undergo physical and bacteriological examinations. An individual chart is prepared for each patient containing the person's present condition, the results obtained and the progress or remission of the disease. Finally, a list is made of doubtful cases and of those with lepromas.

The leprosy cases must be cared for until they are cured. This is the task of the mobile team, which each week goes to every village in the pertinent area, giving care and performing regular examinations of the cases under observation until a certificate of recovery is issued. Patients requiring special care are referred to the nearest medical center. At this time, mobile teams are already in place and operating from the north to the area of Notse. Detection and listing have been completed in the 15 areas and the mobile teams are administering therapy to patients weekly in each village.

The fact that the teams move from village to village constitutes the great difference from past procedure. The advantages are immediately apparent. In the two centers of Koloware (Tchaoudjo) and Akata (Kloto), patients come to the medical personnel and they have to be able to get there. Kiloware has in a sense been transformed into a leper village, a nest of leprosy. Risks of contagion are greater and hygiene is more difficult to maintain.

Patient Rehabilitation

In the final analysis, the CATHWELL project for leprosy control means protection for the entire population of Togo by making lepers non-contagious. On an individual basis, i.e. for the leprosy patient, it

means rehabilitation via a social program set up to motivate patients by giving them a sense of usefulness and removing their misery and dependence.

There is generally a re-education center in each village. Lepers are not lodged and fed there as is the case in Koloware or Akata. Patients there live in a state of dependence and even idleness. In the villages, the project provides re-education for leprosy patients so that they can again use their arms and legs. They braid mats, weave material, make furniture, brooms, jewelry, etc. The most severely handicapped are not idle either because they break the palm nuts from which oil is extracted for soap making. These handmade products are sold and proceeds help to buy food for the patients. Lomiens still remember the sales exposition which was held last year in the French Cultural Center. The products exhibited were numerous and varied. Making patients work in this manner gives them the impression of being useful and not living in a state of dependence, a burden to society.

"No one has the right to be happy all alone." These words by Raoul Follereau were understood by men of good will. At any case, they were heard by the Father of the New Togo and his government who, with CATHWELL, are doing everything in their power so that patients suffering from leprosy will be accepted as human beings enjoying the same rights in the Togo community, happy to be living in the Togo of the New Frontier.

UGANDA

GRAVE CONCERN OVER RABIES NECESSARY, PEOPLE WARNED

Kampala VOICE OF UGANDA in English 17 Mar 77 p 4

[Editorial article in the "Editorials and Features Column"]

[Text] The VOICE OF UGANDA of March 8, 1977, carried a report of an outbreak of rabies in Tanzania which has claimed the lives of at least 50 people. According to the report these victims were registered cases up to the end of February and there could be other victims unknown to the authority.

In 1976 we voiced our concern about the seriousness of the disease in Uganda and gave out sincere warning to the public about the dangers and misery that rabies can bring to our society.

Those who have travelled between Jinja and Kampala may have observed two large notice boards, one at Njeru and the other at Namanve, warning people that they are entering a rabies area.

Everybody all over the world is worried about rabies because it is a fatal disease. As far as we know no person or domestic animal suffering from rabies has ever survived. It is no use running around looking for a medical doctor or even a witch-doctor, after the victim has developed rabies. It will not help. The victim is bound to die a very painful death.

The control of rabies and its eventual eradication is the concern of everybody. It is the responsibility of the authorities to provide suitable facilities for the control of the disease. It is the responsibility of the public to ensure that facilities offered are utilized beneficially.

A person who is known or suspected to have been exposed to rabies should be delivered to the medical authorities immediately so that the necessary treatment may be started without delay. The animal which is known or suspected to have bitten the patient should be captured if it is still alive, and handed over to the veterinary authorities who will confirm whether or not the animal is infected. If the animal has already been killed its head must be handed to the veterinary authorities who will try to confirm whether the animal was infected or not.

Immediately after the presence of the disease is confirmed, the usual procedure of control is:

--All dogs within a reasonable radius are vaccinated. All stray dogs should be destroyed. It is usually cheaper to destroy them by shooting than by other means. The chemicals used for humane destruction are difficult to get and they are expensive. By use of these chemicals it may cost as much as 150/- to destroy each dog.

In fact, according to the Tanzanian report "more than 300 stray dogs have been shot in Dar es Salaam since an anti-rabies campaign was launched a week ago."

Our sincere advice to the public is that every stray dog or any dog seen running around should be treated with suspicion. Avoid it as much as possible. Do not take chances. Once you fall a victim, that might be the end of your road.

USSR

SWINE FLU: AN IMAGINARY OR REAL THREAT?

Ashkhabad TURKMENSKAYA ISKRA in Russian 25 Jan 77 p 4

[Article by Eleonora Gorbunova, science commentator of the Novosti Press Agency]

[Text] Cholera, plague and swine flu are three diseases which have become for all mankind a symbol of lethal danger. Although in the last half century these infections have not headed the "black list" of enemies to our health, the terrible epidemics brought on by them in the past are so soundly retained in the memory of people that any mention of even single illnesses causes "public shock." In recent times the "symptoms" of the return of a virus of the group, which in 1919-1920 was the cause of swine flu, alarmed the inhabitants of the planet. It carried away 20 million human lives--more than World War I. Is this alarm justified? Is the "specter of the past" returning?

"I cannot assert that there is no threat of a new outbreak of swine flu, but at the same time I doubt this will happen in the near future," stated Petr Burgasov, the chief state public health physician of the USSR and member of the USSR Academy of Medical Sciences, at a Moscow press conference for foreign and Soviet journalists.

The contradictoriness of this position is not hard to explain. If swine flu is indeed impending, it is necessary urgently to set up the production of a new vaccine, which requires the mobilization of enormous forces and capital. But what if the threat is imaginary?

"I believe that we should neither overestimate the threat of swine flu, remembering that we bear the responsibility for the health of millions of people, nor underestimate it," Petr Burgasov noted. "Indeed, in 1976 cases of illness, which were caused by viruses of the group that are very similar to the pathogen of swine flu, were recorded in one state of the United States. We cannot be certain of their complete identity--when this disease raged, there were not yet any methods of isolating viruses, and in our laboratory museums there is no pathogen of swine flu. However, we have some indirect data which make it possible to presume that in the period of the 1919 epidemic the virus which caused swine flu was the cause of an epizooty--the outbreak of sickness among swine."

The "swine" virus has come down to our day. The culprit of flu illnesses which occurred in the summer of this year in the United States was similar to it. Naturally, fears arose of a possible revival of swine flu. Fears which are forcing us to study carefully the characteristics of this virus. In the event of its outbreak, we have prepared a series of sera for

diagnosing illnesses. We have created a reserve of a specific gamma globulin for treatment.

The complexity of flu control is determined by the fact that it is necessary to find individual means of control of each variant of the virus (and it constantly "drifts"--changes its characteristics). The pathogen similar to swine flu has not yet appeared in our country. But the A-2 variant, which we are already familiar with, can during this season provoke an increase in illnesses. We do not expect a large outbreak. However, an increase in the number of illnesses caused by flu by even a few percent is tens of thousands of cases.

How has our medical service prepared for the "flu season"? The drug-stores of the country have been restocked with supplies of antibiotics and interferon. The production of remantadin has begun. Developed by scientists of the Latvian SSR, this preparation demonstrated great effectiveness in experiments, successfully underwent clinical tests and, perhaps, will become in the future the first effective medicine against flu.

Vaccinations have been given to 50 million people--to one inhabitant in five of the country. Above all, the workers of the service sphere and the workers of large industrial enterprises, that is, people with the most contacts and, thus, the greatest risk of falling ill. As scientists believe, the vaccinations will reduce the number of illnesses by two times.

The experience of controlling epidemics of past years has shown that the spread of flu can be contained if patients are isolated in time. Therefore, the USSR Ministry of Health has adopted measures on reinforcing the service which reveals people who have become sick and gives them first aid. Every resident of the country, on feeling the first symptoms of illness, has the chance to call to his home a physician of the polyclinic serving the region where he lives. All patients are given a certificate--release from work.

There is an old joke: If you treat the flu, it goes away in 7 days, if you do not treat it, it goes away in a week.

"Of course, there is an ounce of truth here," answered Petr Burgasov. "Our means of influencing a flu virus which has already entered an organism are still quite modest. However, the system of releasing sick people from work and their following the course of treatment prescribed by a physician make it possible to sharply reduce the number of complications for which the flu is dangerous."

We are trying to convince patients to reject the attempt characteristic of many people to get through the flu "on their feet" and recommend to all who have become ill what is called "staying in bed." That is, we are deliberately agreeing to enormous expenses connected with the payment of medical certificates and with the increase during the flu "season" of the number of physicians attending patients at home. And we consider all the expenses justified when it is a matter of people's health.

VIETNAM

CAUSES OF POLIOMYELITIS IN 1975 DETERMINED

Hanoi Y HOC THUC HANH in Vietnamese No 204, Nov-Dec 76 pp 44, 45

[Article by Do Quang Ha and Pham Thi Ngoc Oanh, Institute of Sanitation and Epidemiology: "Causes of Cases of Poliomyelitis in North Vietnam in 1975"]

[Text] I. The beginning:

Since 1960 in North Vietnam, poliomyelitis has basically been limited because of the use of Sabin vaccine; however, every year, a number of scattered cases of poliomyelitis still appear. Because of this, in order to contribute to control of the disease, we have determined the causes of these cases of poliomyelitis and, with the results presented below, we hope that taking poliomyelitis vaccine every year will be organized even better and more thoroughly in order to limit this disease to the lowest possible level among children.

II. Materials and methods:

1. Specimen: Feces was obtained by inserting a Nelaton catheter deep into the anus of the sick child and preserving it in a Hanks solution containing penicillin and streptomycin.
2. Isolating the virus was done according to methods normally used in laboratories. After being shaken carefully, the specimen was placed in a refrigerator; after that the fluid was drawn off and placed in a centrifuge at 2,500 revolutions per minute for 10 minutes; the fluid on top was then drawn off and antibiotics were added in order to have a final concentration of 1,000 units of penicillin and 1,000 micrograms of streptomycin per milliliter. It was left at laboratory room temperature for 1 hour and then, under refrigeration, again subjected to a centrifugal force of 3,000 revolutions per minute for 1 hour; after that the fluid on top was put in 3-4 test tubes containing a Rhesus monkey kidney cell culture in a Melnick's B culture medium. Cell destruction was watched for 2 weeks. The specimens were cultured and transmitted continuously three times before it was concluded whether they were negative or positive.
3. Typing: The viruses which were isolated were typed through a neutral reaction on the cells with three isolated poliomyelitis antisera, using 100 TCD [median tissue culture dose] 50/0.1 milliliters of virus and 20 units of antibodies in the antiserum.
4. Temperature check rct [reaction control test]/40: The titer strengths of the viruses were separated at 37 and 40 degrees centigrade. The

difference of the two virus titers at 37 and 40 degrees centigrade were recorded according to the following stipulations:

If the difference was greater or equal to 2 log 10, it was called a rct (+) test.

If the difference was greater than 2 but less than 5 log 10, it was called a rct (+) test.

If the difference was equal to or greater than 5 log 10, it was called a rct (-) test.

III. Results:

From 108 specimens--feces of children who had contracted poliomyelitis--from the Bach Mai Hospital communicable disease ward, Ha Ba, Hai Hung, Thanh Hoa, Vinh Phu, and Ha Tay provinces, and Hai Phong Municipality, we isolated 25 virus strains which destroyed cells in the culture of monkey kidney cells. Through a neutral reaction with the isolated poliomyelitis antisera, these 25 virus strains were determined to be a Type I poliomyelitis virus and among these four specimens were found to have both types I and II poliomyelitis viruses.

With the rct/40 temperature tests it was found that the difference between the two virus titers at 37 and 40 degrees centigrade was less than or equal to 2 log 10 and therefore the isolated virus types from children who had contracted poliomyelitis in this country in 1975 were virulent poliomyelitis viruses [polio virut doc luc hoang dai].

Table 1. Results of Isolating and Typing Viruses of the Intestinal Tract in Poliomyelitis Cases in 1975

Locality	Number of children sick	Results of virus isolation			rct/40
		Polio I	Polio II	Polio III	
Bach Mai communicable disease ward	39 (3 months-5 years)	14	3		14 (+)
Ha Bac	33 (3 months-2 years)	5	1		5 (+)
Hai Hung	13 (7 months-6 years)	3			3 (+)
Thanh Hoa	16 (9 months-5 years)	3			3 (+)
Vinh Phu	4 (2 months-4 years)	(-)	(-)	(-)	
Hai Phong	2 (9 months-2 years)	(-)	(-)	(-)	
Ha Tay	1 (4 months)	(-)	(-)	(-)	
Total	108	25	4		25 (+)

Concerning serology, we unfortunately did not receive enough serum from the localities. In all there were only four compound serums from the Bach Mai Hospital communicable disease ward. Using a neutral reaction, there was one compound serum which was positive regarding Type I poliomyelitis (one serum was negative and one serum had an antibody titer of 1/64).

Besides this, we also received a number of simple serums but the test results were of no diagnostic value.

IV. Conclusions:

1. The scattered cases of poliomyelitis which occurred in the provinces mentioned above between February and August 1975 were caused by a Type I virus and a small number were caused by a Type I and II virus.
2. As the result of investigations it was found that almost all of the children in the 4-month to 6-year-old age group who had contracted poliomyelitis and who were diagnosed through virology as mentioned above had not previously been given Sabin poliomyelitis vaccine.

HO CHI MINH CITY EXPANDS TUBERCULOSIS TREATMENT, PREVENTION

Ho Chi Minh City SAIGON GIAI PHONG in Vietnamese 6 Jan 77 pp 1, 4

[Article by Q.H.: "Seven More Tuberculosis Resistance Teams for City in 1977"]

[Excerpt] On 4 January, the Municipal Public Health Service held a conference to summarize tuberculosis countermeasures taken during 1976.

During the past year, the Tuberculosis Resistance Station (TRS) managed 12,033 people with tuberculosis, including 9,214 presently under treatment, 1,525 who are being observed and 1,293 who have been cured.

Concerning countermeasures, 272,469 children received BCG vaccinations. The TRS has established three resistance teams in the 5th and 10th precincts and Thu Duc District. In eight precincts and districts, 1, 4, 5, 10, Tan Binh, Go Vap, Binh Thanh and Nha Be, 146 self-management tuberculosis teams are in operation to stress the taking of medicine, sickroom isolation, urging each other to receive examinations, etc.

Proposing the tuberculosis resistance mission for 1977, the conference agreed to promote BCG vaccinations for newborn children to a level of 95 percent for 1977. Efforts will be made during the first quarter 1977 to establish seven tuberculosis resistance teams in the precincts and districts of: 3, 6, 8, 11, Go Vap, Nha Be, Hoc Mon and Cu Chi. Disease prevention sanitation will be intensified for five objectives (cadres,

workers, farmers, laborers and food establishment personnel) by inspecting food sanitation and the drinking and dining conditions, in order to have methods for preventing the spread of the disease.

Patients receiving treatment at tuberculosis prevention dispensaries in the area in which they reside need only present credentials from the ward public health station.

SOUTHERN ANTI-MALARIA DRIVE

Hanoi VNA in English 1445 GMT 24 Jan 77 BK

[Text] A systematic anti-malaria program is being carried out in southern provinces where the malaria situation, inherited from the U.S.-puppet regime, is considered to be serious. Ten million of the South's 25 million people are living in malaria-stricken areas. Malaria epidemics are year-round mainly in mountain and coastal areas. Three out of five outlying districts of Ho Chi Minh City also have the disease. Up to December 1976, 150,000 persons received medical checkups. More than 130,000 blood smears were taken. Some 200 tons of DDT were sprayed in essential areas to protect over 1 million people. Over 1.5 million others were cured of malaria. Five malaria research stations have been set up in Ho Chi Minh City and the provinces of Song Be, Nghia Binh and Thuan Hai.

II. ANIMAL DISEASES

ANGOLA

ANTIRABIES CAMPAIGN

Luanda JORNAL DE ANGOLA in Portuguese 16 Feb 77 p 7

[Text] As is commonly known, the antirabies vaccination campaign conducted throughout the city of Luanda as a measure to insure public health protection against this dangerous disease recently came to a close.

The task performed in all sections of the city with the cooperation of the respective Neighborhood Popular Committees surpassed all initial expectations, and brought about the immunization of 3,452 dogs and 221 cats against the rabic virus.

According to information furnished to this newspaper by sources close to the veterinary department of the Provincial Agriculture Office of Luanda, the vaccination just carried out will provide greater assurance in relation to possible cases of cholera [sic] because in many instances of persons bitten by animals, it will be easy to determine immediately if there is a danger of contracting the disease by establishing whether the animal has been vaccinated.

As a matter of fact, the appeal to vaccinate domestic animals was well received on the part of the population, and the cooperation of the Popular Neighborhood Committees also contributed to the success of the mentioned antirabies vaccination campaign.

As was announced at the start of the vaccination campaign, the task performed in Luanda constitutes the first phase of a big offensive against this dangerous disease, which is most common in African countries although no clinically confirmed case in a human being has occurred in our midst for several years.

In a subsequent phase, the task of prevention will include the hunting of stray animals and, on the other hand, the strict control of the movement into and out of the country of animals susceptible to the transmission of rabies, namely, dogs, cats and monkeys.

Vaccination Proceeding Throughout the Country

According to statements also of sources close to the veterinary activity in Luanda, an equally ample job of vaccination of domestic animals susceptible to the transmission of the mentioned disease is about to take place in the remaining provinces of the country, particularly in Huambo, Benguela, Mocamedes, Malanje and Lubango, where the capture of stray dogs and cats is already under way.

They are areas which have been considerably affected by the war and where there are many animals abandoned by their owners, who have fled our country. Thus, the importance of increased control over rabies is understandable in view of the fact that it is the stray animals which are most exposed to contracting the disease and which require more attention on the part of the sanitary authorities.

In fact, rabies is a disease which is normally fatal, and its cure becomes impossible if proper clinical precautions are not adopted within a very short period of time. This rather compelling reason in itself requires that there be permanent and effective cooperation on the part of the sanitary authorities and the population in general, in order to create all the basic conditions which will insure an effectual fight against this disease.

Capture of Stray Dogs Soon in Luanda

In Luanda, meanwhile, preventive measures will be renewed soon with the start of the capture of stray dogs and cats that is to be carried out in cooperation with the Municipal Commissariat, according to an arrangement made days ago between officials of that agency and the veterinary services. This is a matter of urgency for reasons which have been already repeatedly indicated.

On the other hand, one other matter should be brought into perspective in this situation: it is that the supply of antirabies vaccine is practically exhausted in Luanda on account of the large quantities sent to the rest of the national provinces.

Replacement will certainly be effected within a short time in view of the fact that new supplies could be requested by the veterinary services all over the country, and, moreover, that there are many animals in the city of Luanda which were not vaccinated during the recent campaign because they were under 5 months old, the age limit for receiving the vaccine without physical harm.

There were about 500 animals which could not receive the vaccine, and which will have to resort to the veterinary services of Luanda for this purpose.

BRAZIL

HOG CHOLERA IN SANTA CATARINA AND RIO GRANDE DO SUL

Sao Paulo FOLHA DE SAO PAULO in Portuguese 13 Jan 77 p 24

[Text] Blumenau--Hog cholera has been confirmed in animals slaughtered in the municipio of Itapiranga, which has been prohibited from selling pork by order of the Health Secretariat.

The disease is transmissible to man by the ingestion of the meat of an infected animal. But the Agriculture Sanitary Defense Coordination Office assures that such a possibility has been eliminated, inasmuch as the sale of contaminated meat has been banned. Technicians explained that the time between onset of the disease and the death of the animal is 5 days, so there is no possibility that the animal could be slaughtered before the breeder can detect the presence of the disease.

The symptoms of cholera include high fever and the emaciation of the animal, which dies within a maximum period of 5 days. When the disease occurs, the breeder can prevent it from spreading to the rest of the herd by burning the dead animals and burying them to a depth of 50 centimeters, besides vaccinating the other animals.

The outbreak of hog cholera reached Santa Catarina from across the border with Rio Grande do Sul, where the first sources occurred in the far- and middle-west municipios and have been eliminated to date. To prevent the spread of the outbreak, the Agriculture Secretariat established control units at strategic locations and banned the movement of hogs until cholera is eliminated.

Rio de Janeiro JORNAL DO BRASIL in Portuguese 15 Jan 77 p 22

[Text] Porto Alegre--"The incidence of hog cholera in the Rio Grande do Sul herds is limited to some sources in the area of Alto Uruguai, close to the Argentine border, and is currently under control," Afonso Martinelli, president of the Pork Products Industry Union, said yesterday. This information was confirmed by the president of the Brazilian Hog Growers Association, Elio de Rose, and by the local office of the Ministry of Agriculture.

When the breeders denied the existence of foot-and-mouth disease among the cattle last year, it was the office of the Ministry of Agriculture which cancelled the cattle expositions and shows to prevent the disease from spreading even more.

The hog herds of Rio Grande do Sul comprise 3,397,000 animals, 2.6 million of which are scheduled to be slaughtered in 1977. Rio Grande do Sul supplies the markets of Rio de Janeiro and Sao Paulo, and at least 10 percent of its butchering is done on the premises without the benefit of sanitary inspection.

EAST GERMANY

GDR, CEMA MEASURES TO ERADICATE EPIZOOTICS DESCRIBED

East Berlin PRESSE-INFORMATIONEN in German 17 Feb 77 pp 5-6

[Text] Altogether in the veterinary medicine service of the GDR 15,000 workers are concerned with the health of animals and qualitatively high-grade processing of animal products, including veterinarians, veterinary engineers, veterinary technicians, technical assistants in veterinary medicine, university and technical school cadres of other specialized directions, as well as other workers in veterinary medicine. Most of these employees work in the area of the protection of animal production in the LPG's [Agricultural Producer Cooperatives] and VEG's [State Farms] through veterinary hygiene. Here they see to it, through veterinary medical prevention and through the care of diseased animals, that high milk, meat, egg, and wool production can be attained.

Veterinary medical care is provided through 622 State Veterinary Cooperative Practices or through veterinary medical divisions in plants of industrial-type animal production. Three to five veterinarians and three to four veterinary engineers, as well as other trained veterinary technical personnel, work in a cooperative practice. About half of these practices are technical-organizing centers in the form of support points which have a cooperative pharmacy at their disposal. This insures an efficient use of materials and a rational employment of animal medicines. Every veterinarian in the State Veterinary Cooperative Practices on the average takes care of 3,281 large animal units; this corresponds to approximately 3,300 cattle or 13,000 pigs or 25,000 sheep.

About a third of the coworkers in veterinary medicine are employed in state veterinary hygiene inspections and in the Veterinary-Hygienic Services in the food products economy. These coworkers direct and supervise the work in the slaughter houses and in meat and milk processing plants with regard to storage, transportation, and trade in animal products. They strive for

high quality and guarantee the hygienic harmlessness of food products to prevent any damage to the health of the citizens through animal products. Veterinarians of the Veterinary Hygienic Services in the slaughter houses of the VEB [state enterprise] combines for meat production, for example, bear the responsibility for animals and the meat of these animals. Thus, a veterinarian supervises 45,000 slaughterings annually.

In the realm of scientific institutions, as well as in the scientific diagnostic centers, approximately 1,500 veterinary medical and other specialized university and technical school cadres are working. Their work is aimed at securing scientific advance as well as to transfer scientific insights and innovations into production. This realm includes three veterinary medicine institutes of the Ministry for Agriculture, Forestry and the Foodstuffs Industry, as well as three of the GDR Academy of Agricultural Sciences and 15 bezirk institutes for veterinary medicine.

The university and technical school training takes place at two sections for animal production and veterinary medicine, as well as in two engineering schools for veterinary medicine. Biology graduates receive their training at bezirk institutes for veterinary medicine. At various enterprise-based vocational schools in agriculture, skilled workers inter alia are being trained in the basic profession of zoo-technician-mechanizer --specialization direction veterinary technology--who are exclusively employed in industrial-type animal production plants.

For the care of small domesticated animals--on the average every third citizen of our republic keeps a domesticated animal--55 specialized state veterinary medicine institutions are available. In addition, the veterinarians of the State Veterinary Cooperative Practices, especially in the kreis cities, help to take care of the domesticated animals of citizens. For the veterinary medical care of horses the specialized center for horse health care in Hoppegarten is available.

For the still better prevention of animal diseases and their control and for the identification of animal diseases, 20 vaccines, 48 medicines for animals, and 4 tests [Diagnostika] were developed in the scientific institutions of veterinary medicine in our republic and introduced into practice.

From the countries of CEMA, especially the Soviet Union, 12 vaccines, 26 drugs and 3 tests [Diagnostika] have been adopted within the framework of scientific technical cooperation. Three of the vaccines developed in the GDR can be used for the first time without injection--the animals take them through fodder or through drinking water. The national economic gain from the use of these vaccines amounts to more than 100 million marks annually.

The foundation for international cooperation in veterinary medicine are the Complex Program of CEMA and several agreements and decisions of the

CEMA Permanent Commission for Agriculture. Thus an agreement was reached concerning the specialization and cooperation in the production of veterinary medical preparations. Forty preparations are already being produced in specialized fashion.

A series of topics are being worked on multilaterally, for example, the prevention and control of foot-and-mouth disease (MKS)--for this there is a coordinating center--as well as problems of the relationship between animal and environment, and the prevention and battle against young animal diseases, leukosis and mastitis. Bilaterally there is very intensive cooperation, above all, with the Soviet Union; it encompasses all areas of veterinary medicine.

In the 45 sessions of the Permanent Commission for Agriculture there have been held questions relating to veterinary medicine have been dealt with at almost every second session. This insures a uniform procedure in the prevention of, and battle against, animal diseases and in the development of industrial-type animal production. The GDR is a member of the OIE--the International Animal Disease Office--an organization for the prevention of, and battle against, animal diseases on an international scale.

INDONESIA

SOUTH CELEBES LIVESTOCK ATTACKED BY NGOROK DISEASE

Jakarta SUARA KARYA in Indonesian 21 Jan 77 p 5

[Excerpts] Ujungpandang (Antara)--Septichaenia epizootica (SE or ngorok disease) is attacking cattle in 16 regencies and municipalities in the South Celebes region.

Pagama Adam, chief of the Bina Program Bureau of the South Celebes Animal Husbandry Service, said that total livestock recorded as having been attacked by SE in South Celebes last year number 897 cows, 584 water buffalo and 210 pigs. Deaths resulting from this disease include 112 cows, 50 water buffalo and 10 pigs.

Meanwhile livestock recorded as having been inoculated number 200 horses, 226,934 pigs, 164,376 water buffalo, 8,598 sheep and 18,879 pigs.

According to Pagama Adam, after medication had been given livestock with the disease, 583 cows, 564 water buffalo and 210 pigs were cured.

Since 1975/1976, mass inoculations have been given in all the second level regions and municipalities to fight the SE disease in South Celebes.

In 1975/1976, under the livestock protection project, 418,987 of the targeted 400,000 animals (104 percent) were given the SE inoculation, according to the chief of the Bina Program Bureau of the South Celebes Animal Husbandry Service.

MOROCCO

BENI-MELLAL INFECTED BY FOOT-AND-MOUTH DISEASE

Rabat L'OPINION in French 20 Feb 77 p 8

[Text] Like some of the other provinces in the country, Beni-Mellal has also been declared an area infected with foot-and-mouth disease.

Fifty-five cases had been reported up to 16 February 1977; 47 of these were in Fquih Ben Salah, four in Ouled Youssef (K. Tadla District), three in Zaouiat Cheikh and one in Beni-Mellal (slaughter house).

Moreover, the disease was reported in seven foci, four in Fkih Ben Salah, two in Ouled Youssef and one in Zaouiat Cheikh.

This animal disease, the virus of which was allegedly transmitted from the West, was reported in our province on 7 February 1977. The first case occurred in Sidi Jaber Caidat.

Because of the severity of this raging disease and the unfortunate consequences that may result from it, major preventive measures have been taken by the Stockraising Service, by which massive vaccination and information campaign has been launched in all the communes of the province.

The provincial authorities are providing their valuable support for the prevention of this alarming disease. Starting from there, a work session was held in the capital of the province and important safety measures were decided on, including a provincial decree, an excerpt of which is attached.

Therefore, we will call the attention of our readers, who are consumers of cows' milk, especially to the fact that despite the precautions already taken by the authorities with regard to sales of this food, which are authorized only if there is evidence of vaccination, it is essential that milk be pasteurized or at least sterilized.

There follows a communique on this subject from the municipality: In view of Decree No 272-66 of 24 May 1966 of the minister of agriculture and agrarian reform prescribing measures to be taken against foot-and-mouth disease (BULLETIN OFFICIEL 2705, p 549):

In view of the detection of a case of foot-and-mouth disease on 7 February 1977 in the Beni-Mellal Province (Beni-Mellal District, Sidi Jaber Caidat) and of one on 8 February 1977 at Zaouiat Cheikh (El Ksiba District):

The Governor of Beni-Mellal Province decrees:

Article I. Beni-Mellal Province is declared to be an infected area.

Article II. All entry into and movement out of the province by animals of the following species, cattle, sheep, goats, camels, and pigs, is subject to presentation of a pass issued by the competent veterinary inspector. To this end, checkpoints will be set up by the competent authorities at the main roads serving the province.

Article III. Transportation of cattle is prohibited except to slaughterhouses.

Article IV. Assemblages of animals are prohibited.

Article V. Any farm that is infected must be quarantined:

- 1) None of the animals of the susceptible species may leave the farm (except for the slaughterhouse);
- 2) Milk, forage, materials used in the handling and care of the animals, manure and any other materials having been in contact with the animals on the farm may not leave the farm;
- 3) Owners or other persons on the farm should not leave the premises without disinfecting their hands and shoes;
- 4) Entry to the premises is prohibited for all visitors except authorized agents and those from the technical services of the Ministry of Agriculture and Agrarian Reform;
- 5) Animals destined for slaughter can leave the farm provided that:
 - They are taken to the nearest slaughterhouse;
 - They are accompanied by a pass issued by the inspecting veterinarian;
 - They are transported in a sealed truck, disinfection of which will be undertaken at the consignee slaughterhouses.

Article VI. When animals from the infected farm have been slaughtered, the declaration of infection can be voided after disinfection measures have been effected by the Governor's decree and upon request of the competent veterinary inspector.

When the animals have been vaccinated, the above-mentioned measure can be put into effect within 2 months.

Article VII. The Stockraising Service, local authorities, Royal Gendarmerie, Regional Security Forces are all charged with implementation of the present decree to the extent of their competence.

TANZANIA

ANTI-RABIES MEASURES

Dar es Salaam UHURU in Swahili 24 Mar 77 p 4

[Text] The government was asked for emergency funds totaling 10,070,000 shillings to prevent rabies in the country. This request was made by experts of the ministries of health, agriculture and home affairs after a 2-day meeting, which was held in Tabora concerning means of preventing rabies, came to an end yesterday. It was requested that this money be sent to the regions before 2 weeks so that the work of preventing this disease might continue as scheduled. Of this amount, the regions were asked for 4,150,000 shillings to purchase 500,000 bullets to kill dogs and cats, to pay transport costs and the cost of implementing the campaign to prevent rabies. The department of agriculture was asked for 4.5 million shillings to purchase bullets and anti-rabies serum for dogs at a cost of 3 million shillings. The department of health was asked for 1,420,000 shillings to purchase serum. This department has ordered 130,000 measuring instruments at 1.3 million shillings. These experts also recommended that a regulation be passed requiring everyone to keep no more than two dogs. When he opened the meeting, the chairman of the Revolutionary Party [CCM] for Tabora Region, Peter Sizya thanked these experts for holding the meeting in Tabora, a region which has been very much affected by this disease. He asked that all means be used to prevent the spread of the disease in Tanzania.

UGANDA

VACCINATION PROGRAM FOR RABIES BEGINS

Kampala VOICE OF UGANDA in English 18 Dec 76 p 1

[Text] A spokesman of the Ministry of Animal Resources announces that rabies has been confirmed in Kigungu and Kitoro areas of Entebbe Township. The public is warned to be aware of any rabid animals which are likely to

behave in a queer manner and may bite humans. All dog owners are advised to tie up their dogs.

Vaccination programme for rabies in and around Entebbe has started and will continue up to December 21 in the following places: Kigungu Township, Kitoro [?Trading] Centre, Nakiwogo, Entebbe Town Council, Abaita Ababiri and Small Animal Clinic (Veterinary Training Institute).

The vaccinations begin at eight a.m. The public is asked to cooperate so that we control this dreadful disease.

VIETNAM

RESULTS OF BRUCELLOSIS INVESTIGATION DETAILED

Hanoi KHOA HOC VA KY THUAT NONG NGHIEP in Vietnamese No 11, Nov 76
pp 837-843

[Article by Le Do: "An Investigation of Brucellosis in the Livestock Herds of Northern Vietnam"; manuscript received 7 November 1975]

[Text] Brucellosis is a disease common to humans and animals. In animals, it is also called Bang's Disease; in humans, it is called Undulant Fever, Malta Fever and Somnolent Fever. The livestock most frequently infected with brucellosis are cattle, swine, sheep, goats and horses; several other species of livestock are also susceptible to it.

Over the past several years, a number of countries have focused major economic and technical efforts on bringing this disease under control. Many other countries are conducting investigations and research to determine its extent.

In Vietnam, according to a number of papers that have been made public, livestock at several places are infected with brucellosis; however, the extent of the disease is not known. For this reason, continued verification of the presence of the disease is a pressing requirement. With the direct help of a group of Cuban veterinarians, the Veterinary Medicine Department conducted an investigation of brucellosis in several cattle and swine herds at a number of localities:

--The foreign bulls at the Ba Vi Foreign Bull Center;

--The foreign and crossbred dairy cattle at the Sao Do, Moc Chau, Phu Dong and Tay Hieu state farms and the Tu Dinh and Trung Ha cooperatives;

--The basic cow herds at the Ba Vi and Phu Man state farms in Ha Tay Province, the Dong Giao State Farm in Ninh Binh Province, the Ha Trung

State Farm in Thanh Hoa Province, the Dong Hieu and 19 May state farms in Nghe An Province and the Thanh To State Farm in Haiphong;

--The boar and sow herds at the Trang Due and Cau Nguyet farms in Haiphong and the Thanh To, An Khanh and Dong Giao state farms.

The investigation was conducted between 22 February and 31 August 1975.

I. Research Materials and Methods

1. Materials

--Serum: live, clear, non-hemolyzed and generally used immediately after the serum was freed; bacteriostatic agents were added to sera not used within 24 hours.

--Antigens and globulin fractions: all from Cuba.

--Agglutins: from live guinea pigs selected in strict accordance with standards that were raised and observed at the Central Veterinary Diagnostic Station.

--Red blood cells: taken from healthy male sheep more than 1 year old.

The bacillus was isolated through cultures taken from cattle and swine and confirmed through positive reaction to the tuberculin test or the Wright Test. Isolation medium: prepared by Cuban veterinarians and injected in guinea pigs (healthy guinea pigs that weighed 300 grams or more and were free of brucellosis).

2. Methods

a. Epidemiology:

--The epidemic investigation method;

--The clinical symptoms control method.

b. Serology:

--In cattle: the Ring Test was used to obtain an exploratory reaction.

The Wright Test was used to obtain a primary reaction.

Agglutination was used as the diagnostic reaction.

Swine: primary reaction: Wright Test.
diagnostic reaction: agglutination.

A 2-Mercaptoetanol reaction was used to determine the IgG level in test sera.

c. Bacteriology:

Slides were dyed by the Stam-Mitcherlich and Koster methods.

--Cultured on triptosa and dextosa with simple serum and bacitracin, polymyxin B and actidione; incubated at 37 degrees centigrade under normal conditions or with 10 percent CO₂ added.

--Test growth: 1-2 cc subcutaneous injections of minced tissue culture and blood were given to male guinea pigs; necropsies were performed and guinea pig sera were tested 14 and 42 days after inoculation.

d. Organization: necropsies performed to check for general symptoms of the disease and inspect the changes in bacilli.

II. Research Results

A. Serology

1. Number of livestock tested: 2,798 of the 14,381 head of cattle at the installations investigated were tested (18.8 percent of three installations tested 100 percent of their herds: the Ba Vi Bull Center in Ha Tay, the Sao Do State Farm in Son La and the Phu Dong State Farm in Hanoi).

--Three installations tested 90 percent or more of their herds: the Tu Dinh Cooperative in Hanoi, the Trung Ha Cooperative in Hanoi and the Thanh To State Farm in Haiphong.

--Only five installations tested less than 10 percent of their herds (primarily in key units raising brood cows).

With regard to swine, 814 hogs of the 3,057 at installations were tested (25.8 percent).

2. The Number of Tests and Results

a) Cattle: the 2,798 cattle mentioned above were tested 4,755 times; results showed the following number of reactions: 1015/4755, 21.1 percent, broken down as follows:

--Negative with reaction: 822/4755 = 17.2 percent;

--Suspect reaction: 186/4755 = 4.0 percent;

--Positive reaction: 6/4755 = 0.1 percent.

The installation at which the highest number of reactions was recorded was the 26/3 unit of the Tay Hieu State Farm; there, reactions comprised 53.8 percent and were broken down as follows:

- Negative with reaction: 35.9 percent;
- Suspect reaction: 17.0 percent;
- Positive reaction: 0.6 percent.

The installation recording the lowest number of reactions was the Phu Man State Farm: 6.3 percent, broken down as follows:

- Negative with reaction: 5.7 percent;
- Suspect: 0.6 percent;
- No positive reactions recorded.

b) Swine: the 814 hogs mentioned above were tested 1,059 times; the number of reactions recorded was 109, 10.3 percent, broken down as follows:

- Negative with reaction: $107/1059 = 10.1$ percent;
- Suspect: $1/1059 = 0.08$ percent;
- Positive: $1/1059 = 0.08$ percent.

The place which recorded the highest number of reactions was the Thanh To State Farm in Haiphong: 12.7 percent, broken down as follows:

- Negative with reaction: 12.3 percent;
- Suspect: 0.17 percent;
- Positive: 0.17 percent.

The place recording the lowest number of reactions was the Trang Due Hog Breeding Stock Farm: 3.2 percent, broken down as follows:

- Negative with reaction: 3.2 percent;
- Suspect and positive: none.

Generally speaking, the number of positive tests was higher in cattle than in swine, which was clearly evident at one installation, namely, the Thanh To State Farm: the number of cattle that reacted comprised 31.8 percent and the number of hogs only 12.7 percent of their respective herds.

All tests of cattle and swine resulted in negative agglutination reactions (Charts 1 and 2).

3. Comparison of Areas

a) Cattle: test results in six areas (recorded in Chart 3) showed:

- The area recording the highest percentage of reactions was the Phu Qui area in Nghe An Province: $203/439 = 46.2$ percent, broken down as follows:

Chart 1. Number of Cattle Tested and Wright Test Results

Name	No. of tests	No. of reactions	Negative with reaction				Wright Test results				Positive	
			1/25		1/50		Suspect		Total		Total	
			(+)	%	(+)	%	(+)	%	(+)	%	(+)	%
1 Ba Vi Center	188	43	34	22.8	3	19.7	5	3.1	1	6	3.1	
2 Ba Vi State Farm	351	22	12	6.3	8	5.7	2	0.6		2	0.6	
3 Sao Do State Farm	1057	120	97	11.3	4	9.8	12	1.4	1	14	1.4	0.08
4 Moc Chau State Farm	651	119	99	16.7	10	15.5	9	1.5		10	1.5	
5 Phu Dong State Farm	938	221	128	23.4	50	18.9	41	4.2	1	42	4.2	0.1
6 Tu Dinh Cooperative	250	64	34	25.6	13	20.8	14	4.6	1	16	4.6	0.2
7 Trung Ha Cooperative	165	28	20	17.0	6	15.8	2	1.2		2	1.2	
8 Thanh To State Farm	326	103	81	31.6	5	26.4	16	5.2		17	5.2	
9 Dong Giao State Farm	200	44	30	22.0	6	18.0	7	4.0		8	4.0	
10 Ha Trung State Farm	190	48	27	25.2	11	20.0	5	2.6	1	8	4.0	0.1
11 Tay Hieu State Farm	182	98	49	53.8	16	35.9	24	17.0	1	32	17.0	0.6
12 19-5 State Farm	128	49	30	38.3	5	27.3	11	11.0		14	11.0	
13 Dong Hieu State Farm	129	56	28	43.4	13	31.2	11	12.2	4	15	12.2	
Total	4755	1015	638	21.1	184	17.2	159	4.0	12	186	4.0	0.1

Chart 2. Number of Swine Tested and Wright Test Results

Name	No. of tests	No. of reac- tions	Wright Test results											
			Negative with reaction					Suspect					Positive	
			1/25		Total	%	1/50		Total	%	1/100		Total	%
			(+)	1/25 (+)			(+)	1/50 (+)			(+)	1/100 (+)		
1 Thanh To State Farm	582	74	12.7	71	1	72	12.3	1	0.17	1	0.17	1	0.17	
2 Trang Due Farm	125	4	3.2	4		4	3.2							
3 Dong Giao State Farm	93	8	8.6	7	1	8	8.6							
4 An Khanh State Farm	259	23	8.8	16	7	23	8.8							
Total	1059	109	10.3	98	9	107	10.1	1	0.08	1	0.08	1	0.08	

Chart 3. Comparison of Cattle Test Results by Area

Area	No. of tests	No. of reactions	Wright Test						Agglutination
			Negative with reaction			Suspect		Positive	
			%	reaction	%	Suspect	%		
1 Ba Vi	539	65	12.06	60	10.5	8	1.45	252	negative
2 Moc Chau	1708	239	13.4	214	12.4	24	1.4	1116	-nt-
3 Hanoi	1350	313	23.2	251	18.7	60	4.3	746	-nt-
4 Haiphong	326	103	31.6	86	26.4	17	5.2	101	-nt-
5 Dong Giao	390	92	23.5	73	18.7	17	4.3	92	-nt-
6 Phu Qui	439	203	46.2	141	32.1	61	13.9	201	-nt-

--Negative with reaction: $141/439 = 32.1$ percent;
--Suspect: $61/439 = 13.09$ percent;
--Positive: $1/439 = 0.22$ percent;

and, this was also the area that had the highest percentage of reactions to the tuberculin test.

The area with the lowest percentage of reactions was the Ba Vi area in Ha Tay Province: $65/539$ (12.6 percent), broken down as follows:

--Negative with reaction: $60/539 = 10.5$ percent;
--Suspect: $8/539 = 1.45$ percent;
--Positive: none.

b) Swine: The number of reactions averaged roughly 10 percent in all areas with no significant differences among areas (Chart 4).

4. The progressive changes in test results (Chart 5):

a) The cattle at the Sao Do State Farm were tested four times:

Time between the second and first tests: 48 days;
Time between the third and second tests: 45 days;
Time between the fourth and third tests: 38 days.

The average amount of time between tests was 30-45 days.

Total number of tests conducted: 1,057; number of reactions: $120/1057$ (11.3 percent), broken down as follows:

--Negative with reaction: $105/1057 = 9.8$ percent;
--Suspect: $14/1057 = 1.4$ percent;
--Positive: $1/1057 = 0.08$ percent.

The number of reactions declined as the tests progressed but the fourth test revealed one suspicious case and one positive case.

b) The bulls at the Ba Vi Center were tested three times:

Time between the second and first tests: 45 days;
Time between the third and second tests: 80 days.

Total number of tests: 188.

Number of reactions: $43/188 = 22.8$ percent, broken down as follows:

--Negative with reaction: $37/188 = 19.7$ percent;
--Suspect: $6/188 = 3.1$ percent;
--Positive: none.

Chart 4. Comparison of Swine Test Results by Area

Area	No. of tests	No. of reactions	Wright Test			Agglutination					
			Negative with reaction	%	Suspect	%	Positive	%	Total	Results	
1 An Khanh	259	23	8.8	23	8.8					259	negative
2 Haiphong	707	78	11.0	76	10.7	1	0.15	1	0.15	650	-nt-
3 Dong Giao	93	8	8.6	8	8.6					31	-nt-

Chart 5. Changes in Wright Test Results

Installation	Test I			Test II			Test III			Test IV		
	Negative reaction	Suspect	Positive	Total	Negative reaction	Suspect	Positive	Total	Negative reaction	Suspect	Positive	Total
Sao Do State Farm	15.2	2.8		18	12.1			12.1	11.7	2.6		14.3
Ba Vi Center	11.2	3.1		14.3	6.1	3.0		9.1	44.0	3.4		47.4
Phu Dong State Farm	13.5	3.2	0.4	17.1	21.8	5.8		27.6	21.1	3.6		24.8
Tu Dinh Cooperative	21	8.0		29.0	22.2	4.2		26.4	13.7	6.8	1.2	21.8
Trung Ha Cooperative	15.1	1.6		17.0	20.0	2.2		22.2	10.8			10.8
Thanh To State Farm	27.8	4.0		31.8	24.6	6.7		31.3				
Thanh To State Farm (swine)	15.9		0.4	16.3	13.3	0.3		13.6				

The number of reactions was higher during the third series of tests than during the second but there was not one positive or suspicious case.

c) The cattle at the Phu Dong State Farm in Hanoi were tested three times:

--Time between the second and first tests: 45 days;
--Time between the third and second tests: 80 days.

Total number of reactions: 221/938 (23.4 percent), broken down as follows:

--Negative with reaction: 178/938 = 18.9 percent;
--Suspect: 42/938 = 4.2 percent;
--Positive: 1/938 = 0.1 percent.

The number of reactions increased with the second series but declined with the third.

d) The cattle at the Tu Dinh Cooperative in Hanoi were tested three times:

--Time between the second and first tests: 40 days;
--Time between the third and second tests: 85 days.

Total number of reactions: 64/250 (25.6 percent), broken down as follows:

--Negative with reaction: 47/250 = 20.8 percent;
--Suspect: 16/250 = 4.6 percent;
--Positive: 1/250 = 0.2 percent.

The number of reactions gradually declined but one positive case was detected during the third series of tests.

e) The cattle at the Trung Ha Cooperative were tested three times:

--Time between the second and first tests: 40 days;
--Time between the third and second tests: 85 days.

Total number of reactions: 28/165 = 17 percent, broken down as follows:

--Negative with reaction: 26/165 = 15.8 percent;
--Suspect: 2/165 = 1.2 percent;
--Positive: none.

The number of reactions increased during the second series but decreased with the third.

f) The cattle at the Thanh To State Farm in Haiphong were tested twice:

--Time between the second and first tests: 47 days.

Total number of reactions: 103/326 (31.6 percent), broken down as follows:

--Negative with reaction: 86/326 = 26.4 percent;

--Suspect: 17/326 = 5.2 percent;

--Positive: none.

The number of reactions declined slightly during the second series of tests.

g) The hogs at the Thanh To State Farm in Haiphong were tested twice:

--Time between the second and first tests: 47 days.

Total number of reactions: 74/582 (12.7 percent), broken down as follows:

--Negative with reaction: 72/582 = 12.3 percent;

--Suspect: 1/582 = 0.17 percent;

--Positive: 1/582 = 0.17 percent.

The number of reactions declined with the second series of tests.

h) There was no clear evidence of a gradual increase or reduction in the number of reactions from one series of tests to the next; however, the general trend was one of a gradual reduction.

5. Progressive changes in Wright Test results of a number of animals: observation of 41 head of cattle, the majority of whom showed suspect or positive reactions to the Wright Test in the final test series, showed (Chart 6):

a) Of 8 head of cattle at the Sao Do State Farm tested four times:

--Two animals showed gradually increasing reactions, particularly animal number 412404 which showed a positive reaction to the fourth test at a dilution of 1/100.

--Three animals showed gradually decreasing reactions.

--Three animals reacted only once; of particular interest, animal number 18349 only reacted to the 1/100(+) dilution of the third test but showed no reaction to the fourth test.

b) Of the 17 head of cattle observed over three tests (7 bulls at the Ba Vi Center and 10 dairy cows at the Phu Dong State Farm):

--Five showed gradually increasing reactions;

--Eight showed gradually decreasing reactions;

--Four showed the same reaction to each test.

Changes in the Test Results of a Number of Animals

Installation and Animal's Number	Test I				Test II				Test III				Test IV			
	1/25	1/50	1/100	1/200	1/25	1/50	1/100	1/200	1/25	1/50	1/100	1/200	1/25	1/50	1/100	1/200
Ba Vi Center																
608	+	±			+				+	+	±					
261					±				+	±						
451	±				-				+	±						
450	+	±			+	±			+							
446	+	±			+	±			+	±						
215	+								±							
452	±				±				-							
Sao Do State Farm																
412404	±				+	±			+	+			+	±	+	
412465	±				±				±				+	±		
A.6573	+	±			+	±			+	±			+	±		
18313	-				+	±	±		+	±			-			
1223	+	±			+	±	±		+	±			-			
412743	-				+	±			-				-			
18349	-				-				+	+	±		-			
B.131	-				-				+	±			-			
Phu Dong State Farm																
12927	±				+	±			+	±						
12936	±				+				+	±						
13135	-				+				+	±						
13121	+	±			+	±			+	±						
12945	+	±			+	±			+	±						
12947	+	±			+	±			+	±						
12971	+	±			+	±			+	±						
13008	+	±			+	±			-							
12944	+	±			+	±			-							
12957	+	±			+	±			-							
Thanh To State Farm																
1112	±				+	±										
1157	±				+	±										
1160	±				+	±										
1165	±				+	±										
1122	+	±			+	±										
1158	+	±			+	±										
1183	+	±			+	±										
1301	+	±			+	±										
1171	+	±			+	±										
Tay Hieu State Farm																
02	+	+			+	±										
74	+	+			+	±										
300	+	±			+	±										
60	+	±			+	±										
201	+	±			+	±										
12	+	±			+	±										
62	+	±			+	±										

c) Of 16 head of cattle observed for two tests (9 at the Thanh To State Farm and 7 at the Tay Hieu State Farm):

- Four showed gradually increasing reactions;
- Four showed gradually decreasing reactions;
- Eight showed the same reaction to each test.

d) Thus, of the 41 head of cattle observed:

- Eleven showed gradually increasing reactions;
- Fifteen showed gradually decreasing reactions;
- Twelve showed the same reaction to each test;
- Three reacted only once.

6. Ring Test Results

Before testing sera, we tested 53 milk samples but all showed negative results.

Twenty-six guinea pig serum samples were tested for the purpose of tissue culture inoculations to isolate the brucella bacillus; however, the results of Wright Tests and agglutination tests on the samples 21 and 42 days later showed negative results.

7. General Observations and Serological Research Results

- Each test series produced negative reactions to agglutination tests.

- Although the number of positive reactions to the Wright Test only comprised 0.1 percent, the total number of reactions to this test was high; 21.1 percent in cattle.

- Phu Qui was the area which had the highest number of reactions (46.3 percent). Unit 26/3 of the Tay Hieu State Farm was the installation which had the highest number of reactions (53.8 percent).

- There was no clear change in Wright Test results during the series of tests conducted at each installation but the percentage of reactions generally declined.

- Generally speaking, the 41 head of cattle observed during the various tests showed gradually decreasing reactions, although to varying degrees.

- More reactions were recorded with cattle than swine.

B. Isolation of the Bacillus

The brucella bacillus was isolated from tissue cultures of 12 cattle and swine at seven installations but all produced negative results.

C. Organization

Not one typical indication of brucellosis was found in any of the 12 animals upon which necropsies were performed.

III. Conclusions and Discussion

The results of these series of brucellosis tests show:

--There was not one case of a positive reaction to the agglutination test nor was precipitate found in any milk samples following the Ring Test.

--The number of reactions to the Wright Test comprised 21.2 percent in cattle and 10.3 percent in swine but the number of positive reactions to this test was low: 0.1 percent in cattle and 0.08 percent in swine, and the changes in reactions from one series of tests to another were not proven to be changes in the brucella antibody.

Bacteriological and pathological research also produced negative results. However, we also see that there are several problems which must be discussed:

1. Why, at the installations investigated, was the percentage of livestock that reacted to the Wright Test rather high (21.2 percent) while negatives with reaction comprised 17.2 percent, suspect reactions 4 percent and positive reactions 0.1 percent? We maintain that this could possibly be the result of the following phenomena:

--The false positive reaction phenomena in healthy livestock (in Cuba, the percentage of false reactions has been determined to be 1.4 percent at a dilution of 1:25 UI, 0.15 percent at a dilution of 1:50 UI and 0.01 percent at a dilution of 1:100 UI of the antibody).

--The diagonal precipitate caused by leptospira or other causes, in other words, a precipitate not distinctive of brucella.

--It could also be due to the presence of precipitate brucella antibody which was in a dormant state and which, under the climatic and soil conditions of Vietnam and in view of its complex changes, could not be detected at high strengths, or the diagnostic strengths used were not completely suited to Vietnamese livestock.

--Although not one case of completely positive reaction to the agglutination test was recorded, there were a few cases of suspect reactions and this is also something deserving of our attention.

2. Why has the number of livestock infected with brucellosis and the number of miscarriages in livestock been increasing over the past several years?

The cause might be explained as follows: the number of animals being artificially inseminated by means of whole semen or freeze-dried semen tablets has been increasing but the techniques of extracting and preparing semen as well as the techniques of storing and using it are not very good; this has caused infections or injured the reproductive organs of livestock. Of course, we cannot exclude the possibility that the causes are other viruses, parasites and bacteria, including brucella; thus, it is necessary to continue the investigation on a broader scale and in greater detail.

The Veterinary Medicine Department

ZAMBIA

COPPERBELT FARMERS WARNED OF FOWL DISEASE

Lusaka TIMES OF ZAMBIA in English 9 Mar 77 p 5

[Text] Poultry farmers on the Copperbelt have been warned against a disease called "gumboro," which attacks fowls.

A spokesman for the veterinary department, who gave the warning in Ndola yesterday, said there had been isolated cases of the disease in Ndola, Luanshya and Chingola.

But he pointed out that the symptoms of the disease were a "little bit difficult" to notice, as they resembled those of other poultry sicknesses.

"One thing that is easily noticed is that a large number of chickens being kept in one room become sick in two days.

"But the major symptoms of 'gumboro' are that the affected fowls suffer from 'white or clear' diarrhoea, they tremble and eat their own tail," he said.

Some chickens might die and those that recover would do so in five or seven days.

The virus can only be killed by a solution called "formalin."

The medicine is applied by spraying the floor of the chicken run with it.

He appealed to poultry farmers noticing anything suspicious among their chickens to contact his office without delay.

III. PLANT DISEASES AND INSECT PESTS

BRAZIL

ATTACKS BY BEES

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 19 Jan 77 p 21

[Summary] A swarm of bees which had taken over a shack of Jardim Alvarenga, in Sao Bernardo do Campo, on the morning of 18 January 1977, was finally dislodged with smoke from burning rubber tires after thousands of them had been killed by being sprayed with gasoline. Jose Correa de Melo returned home to find it completely invaded by the bees, which, after stinging his wife and a 9-year-old daughter and forcing all of them to flee, proceeded to hover around the shack attacking the people who gathered nearby.

Sao Paulo FOLHA DE SAO PAULO in Portuguese 27 Jan 77 p 24

[Text] About 1700 hours on 24 January, 38 persons were attacked by a swarm of African bees on Brasil Ave, close to the Sao Lucas Clinic. Seven of them are in serious condition.

Buggy driver Benedito Rosseti was driving past the location when the bees attacked him and his animal, which dropped to the ground kicking violently and hitting a young man, who was not injured. At the time, Oswaldo Fontanez, a chauffeur of the prefecture, was also stung by the bees when driving a truck along the avenue. He ran away from the truck's cab and, pursued by the bees, took refuge in the Police Station nearby. The outcry of the victims drew the attention of passers-by, who were also attacked by the insects when they approached.

A detachment of the Fire Department was summoned, which managed to exterminate the bees although some members of the department were also stung. In total, 38 persons were treated at the Sao Lucas Clinic, the Sao Francisco Hospital and the Municipal First Aid Clinic. Buggy driver Benedito Rosseti

is in the worst condition of all, and another six persons are still hospitalized. It was determined that the swarm came from the Sao Lucas Clinic building, one of whose wings is under construction.

Suffocated

Fishermen from this city who were on the margins of the Moji Guacu River were also attacked by African bees on the 11th of the current month, and one of them died suffocated by the insects.

Lazaro Monteiro related that he was fishing when his companion, Antenor Ferreiro, inadvertently touched a thicket containing a beehive. The bees immediately attacked and everyone fled. Antenor Ferreiro, 61 years old, could not outdistance them and dropped unconscious. The bees completely covered his face and suffocated him by entering his nose. When the medical assistance that his companions summoned from the Piracununga Hospital arrived at the scene, he was already dead. He was buried in Americana.

HEAVY RAINS MAKE DISEASE CONTROL OF PARANA CROPS DIFFICULT

Rio de Janeiro JORNAL DO BRASIL in Portuguese 20 Jan 77 p 26

[Text] Curitiba--The heavy rains that are falling all over Parana since the beginning of the month are hindering the fight against diseases of the soybean crop and delaying the peanut harvest, whose estimated production of 67,000 tons could suffer a drop of 10 percent.

The 40 technicians of the Agriculture Secretariat in charge of making a survey of the situation have not been able to reach the fields because most of the roads are impassable.

Eugenio Stefanelo, director of the Rural Economics Department of the Agriculture Secretariat, reported that "Parana planted 2.4 million hectares of soybeans, and the rains at this time of the year favor the vegetative growth of the plant, but the incidence of diseases is increasing and the weather conditions do not permit them to be fought properly."

To attain the projected production of 5.2 million tons, the fields must give an average yield of 2,166 tons per hectare. Last year, the yield was 2,160 tons per hectare.

LARVAE OF YELLOW FEVER CARRIER DISCOVERED IN BELEM PORT

Rio de Janeiro JORNAL DO BRASIL in Portuguese 6 Feb 77 p 19

[Text] Belem--Larvae of the yellow fever carrier *Aedes aegypti* mosquito were discovered yesterday aboard the freighter Becena, in the port of this

capital, by the Epidemiologic Vigilance Service of the Ministry of Health. The larvae were found in 10 of the 840 drums of pitch that the Panamanian flag vessel brought from the port of Santa Marta in Colombia.

After eliminating the larvae with Baytex insecticide, a search was conducted over an area extending up to 400 meters from the edge of the port quay, in order to determine if the yellow fever carrier had invaded the city. The discovery was reported to Health Minister Paulo de Almeida Machado.

Details

The larvae were discovered during a routine inspection by Dr Zoenio Gueiros, regional chief of the superintendency of medical campaigns (SUCAM); Dr Moacir Pinto da Costa, port health inspector; and Dr Agostinho Haroldo Lameira, of the state Health Secretariat, who make up the Epidemiologic Vigilance Service of the Ministry of Health in Para.

"Because the drums do not have tops," explained Dr Zoenio Gueiros, "there was an accumulation of rainwater. The ship went to several places in the Caribbean with extant sources of the *Aedes aegypti* mosquito, and the water pockets became breeding spots for the larvae. Ten drums were full of them, and we immediately sought to eliminate the sources."

Normal

The captain of the Becena, Javier Montane, reported that none of the 31 crewmen had fever or any other illness. Nevertheless, the sanitary authorities applied Rodiasol to all compartments of the freighter as a precautionary measure.

The Panamanian-flag freighter departed from the Colombian port of Santa Marta on 28 November of last year, carrying on the deck 197 tons of pitch in 840 drums, in addition to other cargo. The vessel put into Freeport, Houston, New Orleans, Tampa (Florida) and Guaranau, from where it departed on 24 January to arrive in Belem only yesterday on account of a breakdown of the pistons of one of the engines, according to its captain.

Control

SUCAM regional chief Zoenio Gueiros sought to reassure the population by asserting that, in view of the prompt adoption of measures and the preventive effort and vigilance that the agency has been exerting, there is no danger that the mosquito which transmits yellow fever has invaded the city.

The last source of the *Aedes aegypti* mosquito discovered in Belem in 1972 was eliminated. A rigorous effort of vigilance and prevention has been exerted since then. "Last year alone," said Dr Zoenio Gueiros, "216,050

persons were vaccinated against yellow fever, and 3,478,808 breeding spots in 342,311 buildings, as well as 68,000 vessels, were inspected. In addition to that, we have 160 traps (clay containers with clean water where the females could deposit their eggs) distributed over the waterfront, the airport and the access road to the city."

PLANT DISEASE INFECTS CROPS IN MINAS

Rio de Janeiro O GLOBO in Portuguese 9 Feb 77 p 26

[Text] Belo Horizonte--The Technical Assistance and Rural Extension Enterprise of Minas Gerais State (EMATER-MG) reported yesterday that a disease caused by the virus known as the "golden mosaic" is affecting the bean crop in areas close to the large soybean plantations, such as in southern Minas, Upper Paranaiba and the area of Mata.

After causing the leaves of the soybean to dry up and drop, the disease brings about the migration of white flies to other legumes, putting in jeopardy the bean plantations.

The EMATER-MG says that a new mutant plant resistant to the virus has been already discovered in order to control that disease. To obtain that mutant, 20,000 plants of each commercial variety of bean were subjected to "nuclear radiation," and it turned out that only the "carioquinha" variety withstood all inoculations and proved fully resistant to the golden mosaic virus.

Research

The work of radiation was done at the Agriculture Nuclear Energy Center in Piracicaba by technician A. Tulman Neto, and the research was conducted by Alvaro Santos da Costa, chief of the virology section of the Agronomic Institute of Campinas.

The discovery of the mutant plant which resists the virus was reported to the EMATER-MG by Prof. Ciro Paulino da Costa of the Genetics Institute of Piracicaba, and it is being made known to its technical personnel, according to technician Sergio Mario Regina.

The mutant plant will be most useful in Minas Gerais in the areas of Upper Paranaiba, Minas Triangle, the zone of Mata and the south of the state.

FIVE NEW CROP PESTS IDENTIFIED

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 20 Feb 77 p 36

[Text] The president of the Brazilian Entomological Society, Milton de Souza Guerra, announced yesterday that five new pests, until recently

unknown in Brazil, have been found in the country, which is exposed to invasion by others which could cause serious damage to agriculture and ranching.

He stated that the pests are: pasture bedbug (*Blissus Leucopterus*), manioc cochineal bug (*Phenacoccus* sp.), a coleopteral (*Lagria Villosa*) originally from Africa which has appeared in Bahia, and two species of flies causing "miasas," one of them from Australia. The invasion, he added, is facilitated by the growth of commerce with other countries and by the opening of roads which link various regions of the country.

About the coleopteral he added that it is so violent that it is already being called Idi Amin, because it is destroying plantings in Bahia, Rio, and Sao Paulo, and is beginning to spread into southern Brazil. To combat the pests, Souza Guerra observed that various theses were approved and sent to the Ministry of Agriculture during the Brazilian Entomological Congress, recently ended in Goiania, in which he was one of the participants.

Among other appeals to the ministry, he pointed out one which demonstrated the need to re-equip the Plant Health Protection Program, for the "security of national interests."

In one of the proposals brought forth by Souza Guerra, experts meeting in Goiania lamented "the precarious state of quarantine and inspection measures in Brazil, exposing the country to entry of various species of pests which still do not occur in Brazilian territory." The cotton bug (*Anthonomus grandis*, or Boll weevil) is considered the greatest pest in the United States and is already seen in Venezuela, from where "it can pass into Brazil along the roads which disrupt the ecological barrier of the Amazon."

The entomologists sent several suggestions to the Ministry of Agriculture to avoid or retard the entry of *Anthonomus grandis*. They want the idea considered of having the army limit and control traffic on the Manaus-Caracas highway, which passes through the region where the pest occurs, the setting up of strong barricades on the road, supervised by technicians, the prohibition of cotton cultivation in Amazonia and in the regions next to the Manaus-Caracas road, and establishment of a sanitary check point at Ponta Pora. Two other suggestions depend on diplomatic accords: an immediate entomological survey in Bolivia to detect the presence of the Boll weevil, and establishment of an international commission to deal with the eradication of the pest in Venezuela. Finally, the experts want the immediate assignment of genetic factors resistant to the Boll weevil, and creation of an eradication program for initial sites of Boll weevil infestation, even including the importation of sterile males from the United States.

COFFEE CROPS IN PARANA THREATENED BY DISEASE

Rio de Janeiro O GLOBO in Portuguese 24 Feb 77 p 18

[Text] Experts in the coffee program at the Agronomic Institute of Parana, IAPAR, yesterday revealed that a bacterial disease is attacking the coffee plantings in Parana, and its effects "could be worse than the July 1975 freeze which affected practically all the coffee areas in the south of the country."

According to the experts, the characteristic symptoms of the disease, known scientifically as "pseudomas garcea," are defoliation and drying of the tips. According to the IAPAR experts who are researching the disease to find a way to combat it, "we do not as yet have an estimate on the damage done, but it appears to be as serious as the '75 freeze." This disease, the Parana researchers explained, was described for the first time in the municipality of Garca in Sao Paulo, 20 years ago.

"For this reason," they affirm, "we believe that this disease has always existed in the coffee plantings of Parana, but not in as great a degree or as widespread as at present."

The experts at IAPAR state that "today the disease is distributed all over the coffee growing region, including the littoral of the state."

After the last freeze which decimated the coffee plantings, with the good climatic conditions of the last 2 years, the coffee trees began budding with the partial recuperation of the planted areas. But, during the last months of recuperation, the problem of the bacteria in epidemic form surfaced, causing heavy damage.

The IAPAR experts went on to say that more than 90 percent of coffee growers who have visited the institute since September 1976 had the bacteria in their plantings.

The most serious bacterial attack came in the nursery of the rural economic society of the Londrina prefecture, killing about 800,000 seedlings. After this discovery, the disease began to alarm experts "because the bacteria prefer new trees, and the whole coffee area of Parana has been planted and rebudded for less than 2 years, and its proliferation is proceeding rapidly," the experts affirmed.

In nurseries, the symptoms begin to appear when the plant is in the cotyledon stage ("jaguar's ear").

Later it moves to other leaves, beginning its damage with small, wet, dark green patches, which later turn brown. The patches spread on the leaves and form extensive areas like a true burn, the experts explained.

Many times this form reaches the growth points and begins blackening the tips, thus being able to kill the seedling. Affected in the nursery and carried to the plantings, the seedlings can begin the epidemic cycle again, the experts warned.

In the fields, the symptoms can be identified in both recently planted or transplanted seedlings, up to 2- to 3-year-old plants in cultivation and in bud.

In some older fields which were not affected by the freeze, the damage is relatively small.

The experts say that all varieties of coffee trees cultivated at present in Parana are susceptible to attack by the bacteria. In order to try to find a solution to the problem, the Agronomic Institute of Parana will conduct various studies on the means of growing varieties resistant to the bacteria.

Some of those grown in Ethiopia are currently being tested by IAPAR and already show resistance to these bacteria. It remains now to prove the productive capacity of these varieties under regional conditions.

The bacteria causing this type of disease are most easily spread by wind and rain.

RESISTANT FUNGUS THREATENS CORN, SORGHUM CROPS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 16 Mar 77 p 31

[Text] Campinas--A fungus new to the region, resistant to agricultural means of defense and capable of surviving 5 years in the ground, was detected in the corn and sorghum crops of the area of Jaboticabal by technicians of the Prof Antonio Ruete School of Veterinary Medicine and Agronomy in the course of routine analyses. The plague, known as mildew (*Sclerotinia sorghi* fungus), originated from a shipment of sorghum seeds imported from Argentina and Texas, United States, and distributed in Goias, Parana, Rio Grande do Sul and the Minas Triangle.

According to reports of the technicians, the fungus attacks corn in short order preventing the formation of ears, and could completely destroy cultivation in 3 years. In view of this development, Lazaro Sampaio Leite, the official in charge of the phytosanitary section of the Ministry of Agriculture in Sao Paulo, convoked an extraordinary meeting of the Plague and Disease Committee of the state Agriculture Secretariat on 4 March.

Technicians of the Jaboticabal school, the Integrated Technical Assistance Coordinating Office (CATI) and the Agronomic Institute, and representatives of seed distributing firms participated in the discussions held in

the farm of the Biologic Institute in Campinas. No representatives of the Brazilian Enterprise for Agriculture and Livestock Raising Research (EMBRAPA) were invited to the meeting because of the urgency which the situation required.

In view of the seriousness of the situation, 14 topics were propounded and discussed at the meeting as a means to prevent the spread of the disease to other areas. Among them are the interdiction of all crops where the symptoms of the disease are noted now or in the future, the banning of the cultivation of sorghum in the state of Sao Paulo, and the prohibition of the import and sale of corn and sorghum seeds.

RHODESIA

WAR HAS PUT BACK BATTLE AGAINST TSETSE FLY 20 YEARS

Salisbury THE RHODESIA HERALD in English 3 Mar 77 p 19

[Text] The terror war has put back Rhodesia's battle against the tsetse fly 20 years. It will cost millions to regain the ground lost to the fly.

The situation is very serious. Tsetse is advancing "at a rate of knots," said Dr Bill Boyt, Chief Veterinary Officer (trypanosomiasis) in the Ministry of Agriculture.

"In the Mount Darwin area, we are faced with a major advance of tsetse," he said. Already several thousand head of cattle have died of nagana, and the advance threatens an area of 19,000 km² and 164,000 head of cattle.

He said that because of the terror war, tsetse and trypanosomiasis control teams were unable to operate. "We have been put back to a position we were in 20 or more years ago. It will take millions of dollars to put it right."

In 1973 Rhodesians were about to embark on a major spraying operation in Mozambique itself, down on the Rio Luia (in Rhodesia it is called the Ruya River) "which we regarded as the stronghold of the persistence of tsetse in that area.

Advance

"Although we had put in tracks, arranged camps and had the full permission of the Portuguese, this was denied as the security situation deteriorated. Now we are unable to work in the border area. We are facing a major advance of the tsetse fly."

Unchecked, tsetse would spread to the 1,500 m contour. "All we can do is our utmost to protect the cattle. We literally can do nothing at the moment to fight the fly. We cannot carry out conventional spraying or spraying of trees and bushes," said Dr Boyt.

The closest the fly has advanced to Salisbury is about 25 km to 35 km from Bindura.

"The tsetse fly is now on the Mazoe and may have crossed the Mazoe, which is 20 to 30 km north of Mtoko. There are possibly tsetse close to Shamva. But Mtoko, an area which we cleared with our efforts over the last 12 to 15 years, is now threatened again."

Similar

Asked about places such as Buhera, Gutu and Bikita, Dr Boyt said: "We are there faced with the possibility of a similar situation developing. East of the Sabi and south of Chipinga in the Lowveld we pushed the tsetse back into Mozambique, we eliminated them from Rhodesia, and we worked about nine or 10 km into Mozambique. Now this facility has been denied to us. The cattle in that area could be infected.

"It could cross the Sabi flood plain, it could cross the Sabi and could be in areas like the Sanga Reserve, Ndanga and so on.

"And further south, in Gona-re-Zhou, we have had a very successful campaign in conjunction with the Portuguese in Mozambique and the South African authorities [and] from 1963 to 1974 we pushed the tsetse completely out of Rhodesia and we were working 80 km into Mozambique.

"Had we been allowed to carry on we would now be within smell of the sea. And that would be the problem removed from that area. The threat to the Limpopo and Kruger National Park would have been removed.

Herds

"Now, we haven't even got any sentinel herds along the border. These were herds we kept as alarm systems to check the presence of fly and of the trypanosome parasite. So the first intimation we would have for the return of tsetse would be infection of cattle in Matibi No. 2 Tribal Trust Land, north of Gona-re-Zhou Game Reserve.

"Because we can't work along the border for security reasons, we can't even monitor the tsetse in that area. The whole of Gona-re-Zhou is closed to everyone except the security forces."

From Mount Darwin down to Vila Salazar very little work could be done, said Dr Boyt. "A quite serious position might develop anywhere, or everywhere along that border."

ZAMBIA

NEW GRANARY MAY SAVE CORN CROP FROM PESTS

Lusaka TIMES OF ZAMBIA in English 18 Mar 77 p 4

[Text] The Mount Makulu Research station near Lusaka has produced a new type of granary which will help reduce losses of grain experienced in rural areas.

The granary, developed with the assistance of the United Nations Development Programme, will in the next six months undergo final testing.

According to initial surveys conducted before the development of the granary called "ferrumbu," about one million bags of maize were lost each year as a result of attack by weevils, beetles, rodents and birds.

The attacks claimed about seven per cent of the total harvest each year.

The losses weighed heavily on peasant farmers, who constituted 65 per cent of the population keeping maize in granaries to feed their families throughout the year and seeds for the next season.

Problems

Among other problems was the deterioration of maize as a result of fungus infection which made the maize less palatable for consumption.

The ferrumbu, which can easily be built by villagers, has been developed at Mount Makulu by Mr K. N. Ostergarard, a Danish FAO expert in rural grain storage. He previously worked on a regional African storage project in Nigeria.

The ferrumbu is structurally stable, water-tight, fire resistant and impervious to insects, rodents and birds.

The bin can be emptied, cleaned and maintained easily, and is similar in shape to the existing granaries.

All the farmers require are stones, bush poles, chicken wire and cement.

The average cost of a ferrumbu has been calculated in the region of K15.

CSO: 5400

- END -