

23 JUN 1969



SEATO

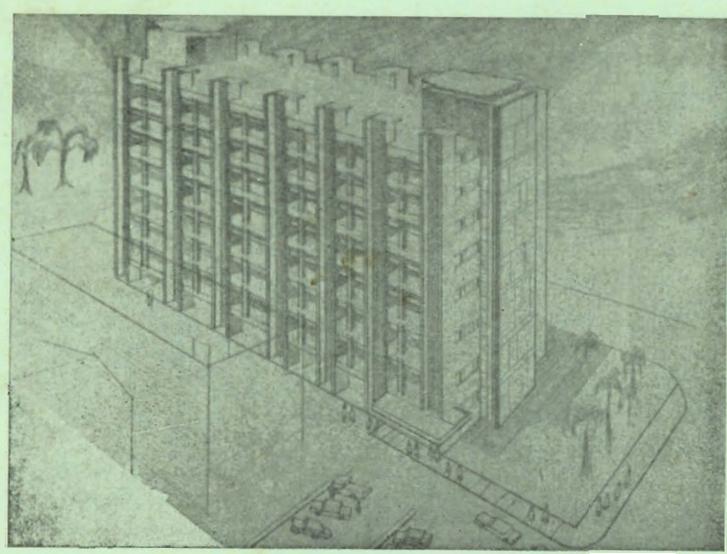


MEDICAL RESEARCH PROJECT

FOUNDATION-STONE LAYING

BY

**HIS EXCELLENCY — THE PRIME MINISTER
FIELD MARSHAL THANOM KITTIKACHORN**



MEDICAL RESEARCH PROGRAM

SEPTEMBER 2, 1966

BANGKOK

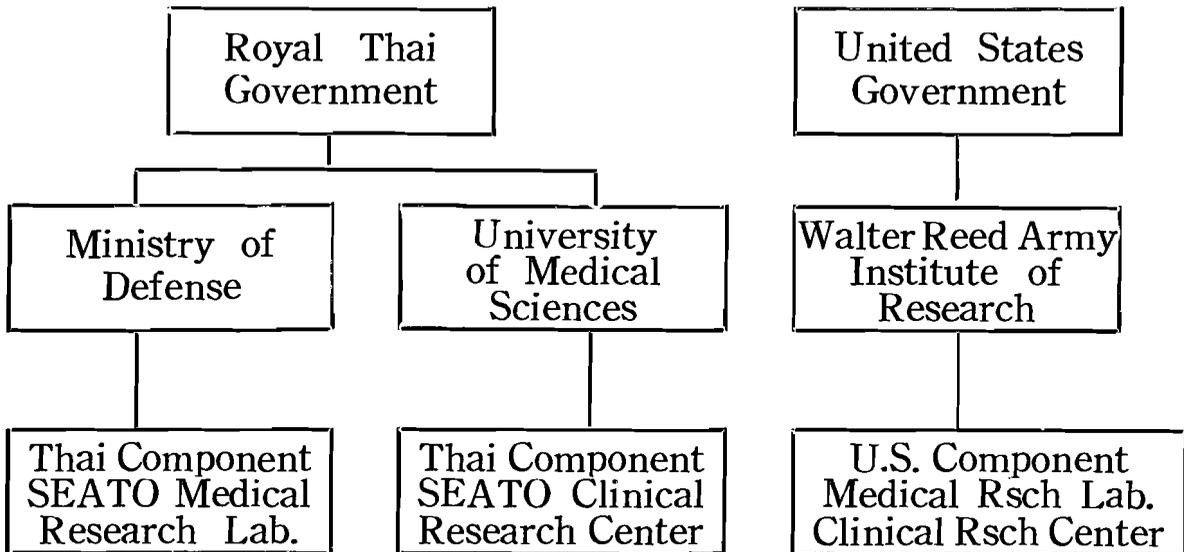
SEATO MEDICAL RESEARCH LABORATORY

HISTORY: The SEATO Medical Research Laboratory, composed of a Thai and a U.S. Component, was established in December 1960. This was the result of a proposal at the 6th Council Meeting of Ministers in 1960, that the SEATO Cholera Research Laboratory in Thailand (activated in 1959) be converted into a SEATO General Medical Research Project and other Member Governments be encouraged to participate. The second portion of the SEATO project, now known as the SEATO Medical Research Program was the Clinical Research Center, jointly established by the Royal Thai Government and the U.S. Government in April 1963.

MISSION: The mission of the Medical Program is to conduct medical research and research training with the major emphasis on medical problems of common interest to the SEATO participants.

This new building which is a portion of the SEATO Medical Research Laboratory is scheduled to be completed by the end of 1967. This will provide much needed laboratory space for the various investigators of the two national components and for investigators of other Member Governments who may wish to join the Program.

National Components in the SEATO Medical Program



Acting Director General, SEATO Medical Research Project:
Major General Pung Phintuyothin

Director General, SEATO Clinical Research Center:
Dr. Swasdi Skulthai

Director, U.S. Army Medical Component, SEATO:
Lt Colonel Stefano Vivona, MC

Other SEATO Member Governments have assisted with the Program. Material and equipment have been received from Australia and the United Kingdom. Research personnel have been assigned for brief periods from France, New Zealand, Pakistan, and the Republic of the Philippines. More participation by Member Governments would be most welcome.

Current Research Projects

On-going research activities of the SEATO Medical Program are concerned with the following:

1. Antimicrobials

- a. Bacteria found in surgical and traumatic, including war, wounds.
- b. Sensitivity and resistance of these bacteria and other bacteria, such as those causing gonorrhea, to antibiotics.

2. Arboviruses

- a. Dengue and Thai Hemorrhagic Fever
 - (1) Epidemiology, i.e., the interrelationships of the dengue viruses (agents), man (host), and the mosquitoes that transmit the infections and related factors (environment).
 - (2) Treatment of serious complications of dengue fevers, such as hemorrhagic fever.
 - (3) Basic mechanisms involved which determine whether an infected person reacts with classical dengue fever or hemorrhagic fever.
 - (4) Basic virological techniques.
- b. Chickungunya virus infections
 - (1) Epidemiology.
 - (2) Relationship to Thai Hemorrhagic Fever.
- c. Japanese Encephalitis
 - (1) Epidemiology, to include role of animals other than man in maintenance of the infection.
 - (2) Survey of its importance in Thailand as a cause of human disease.

3. Arthropods of Medical Importance

- a. Distribution and behavior of arthropods (mosquitoes, ticks, mites, and fleas) which transmit diseases such as malaria, dengue, and Thai hemorrhagic fever, scrub typhus, murine typhus, plague, dengue, and Japanese encephalitis.
- b. Establishment and maintenance of laboratory colonies of the more important mosquitoes for:
 - (1) Research on transmission of these diseases.
 - (2) Evaluation of insecticides and chemical repellents.
- c. Identification, description, and cataloging of these arthropods to make feasible publications of use to medical workers.

4. Bladder Stone

- a. Survey of the prevalence of the disease in Thailand.
- b. Evaluation of the dietary habits of persons in endemic and hypoendemic areas.
- c. Chemical studies of minerals and other substances in the urine.

5. Diarrheal Diseases

- a. Surveys to determine the responsible agents.
- b. Antibiotic sensitivity of organisms associated with diarrheal disease.
- c. Basic studies to determine how cholera organisms cause the symptoms, what can be done to prevent it, and how to treat the basic lesion rather than the symptoms.

6. Enteroviruses. Virus isolations from cases of disease compatible with a clinical diagnosis of herpangina and fevers of undetermined origin in young children.

7. Eosinophilic Meningitis

- a. Epidemiology of the disease in an attempt to determine how man gets infected. Certain snails are believed to transmit infection to man.
- b. Clinical study of this newly recognized disease, to include examination of post-mortem tissues.

8. Filariasis

- a. Study of skin tests and serological procedures for diagnosis of the disease in man.
- b. Serological procedures to study the natural course of disease.

9. Gnathastomiasis

- a. Surveys of the prevalence of this parasitic infection among humans in Thailand.
- b. Epidemiology of the causative parasitic agent (*Gnathostoma spinigerum*), the various hosts (such as man, fish, fowl, dogs, cats, etc.) and the environment to determine sources of infection and methods of transmission.

10. Growth and Development. Determination of bone age standards (age of ossification of bone centers) for normal Thais.

11. Hematology

- a. Study of Thai subjects with a deficiency of various blood enzymes and effect of these deficiencies.
- b. Study of abnormal hemoglobins among Thais.
- c. Iron intake of adult Thais.

12. Hepatitis

- a. Histopathological study of the liver in diseases in which involvement of the liver occurs (e.g., leptospirosis, infectious hepatitis, dengue, malaria, etc.).
- b. Incidence of viral hepatitis among military personnel.

13. Laboratory Animals

- a. Ecology and colonization of the tree shrew (*Tupaia glis*), a low type of primate.
- b. Ecology and colonization of the gibbon (*Hylobates lar lar*).
- c. Nutritional and health requirements for development and maintenance of conventional animal colonies (mice, hamsters, rats, guinea pigs, rabbits).

14. Leptospirosis

- a. Epidemiology of leptospirosis with special emphasis on livestock animals.
- b. Serological survey for leptospirosis among special groups of personnel.

15. Malaria

- a. Clinical complications such as cerebral malaria, blackwater fever, and renal failure with special emphasis on mechanism, treatment and prevention of complications.
- b. Infection of laboratory animals, including non-human primates, with human strains of malaria parasites.
- c. Studies concerning the immunology of malaria in human disease and in laboratory animal models.
- d. Search for natural malaria infection among non-human primates.
- e. Mosquito vectors of malaria.

16. Melioidosis

- a. Distribution of the organism (*Pseudomonas pseudomallei*) causing this disease in soil and water samples from various parts of Thailand.
- b. Serological survey of persons for antibodies against the organism to detect previous non-fatal infections.
- c. Search for clinical cases.

17. Molluscs. A general survey and systematic classification of the fresh-water snails and other intermediate hosts of parasitic disease organisms in Thailand.

18. Mycotic Diseases

- a. A general survey to determine the prevalence and distribution of human systemic diseases caused by fungi in Thailand.
- b. Study of dermatophytoses (skin infections caused by fungi) in Thailand to determine etiologic agents and distribution.
- c. Operation of a diagnostic laboratory.

19. Neurology and Neuropsychiatry

- a. Neurological complications in malaria.
- b. Hereditary familial neurological diseases.
- c. Medical beliefs and behavior in culture, social structure, and internal and external group relationships.
- d. Advisor-counterpart relationships in a civilian and military environment.

20. Nutrition and Metabolism

- a. Epidemiological, clinical, and biochemical studies of beriberi (Vitamin B deficiency) in infants and adults in Thailand.
- b. Laboratory animal models for Vitamin B deficiency.

21. Rabies

- a. Study of the role of bats in dissemination of rabies.
- b. Diagnostic laboratory facility for the diagnosis of rabies in animals.

22. Renal Diseases.

- a. Determination of normal renal physiology among Thais to include study of body compartments.
- b. Study of renal physiology in diseases such as malaria and Thai hemorrhagic fever.

23. Respiratory Virus Infections. Diagnostic laboratory facility for identification of respiratory virus causing febrile respiratory illness in Thailand with special reference to influenza organisms.

24. Rickettsial Diseases

- a. Survey of the distribution of scrub typhus organisms in man, animals, and mites which transmit the infection.
- b. Survey of the distribution of other rickettsial diseases in Thailand among both humans and animals.

25. Venereal Diseases. Determination of the antibiotic sensitivity of the organism causing gonorrhea to assist with the treatment regimen.

26. Zoonoses

- a. Diagnostic capability for anthrax and leptospirosis.
- b. Serological survey of wild rodents for detection of plague antibodies.

27. Diagnostic laboratory services in all of the areas in which current research is being undertaken.

28. Teaching. Members of the national components participate in the various medical teaching programs in Thailand.

A brief discussion of a few of the more important studies appears on the following pages.

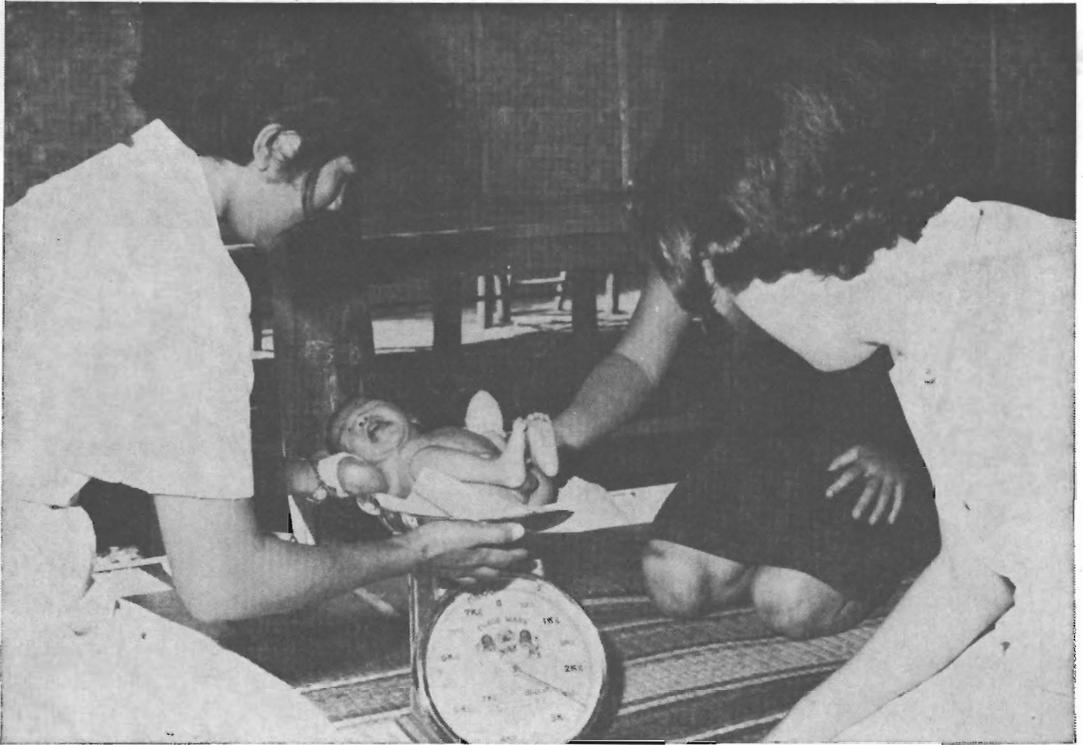
RICKETTSIAL DISEASES



Rickettsial diseases include scrub typhus, epidemic typhus, murine typhus, Rocky Mountain spotted fever, tick fever, rickettsial pox, and Q fever. These diseases continue to be serious health problems; and, in South east Asia, scrub typhus is commonly encountered. This disease, transmitted by the bite of infected mites, can be quite serious in untreated cases with fatality varying with locality from 1 to 40 per cent. The primary emphasis of the SEATO studies is concerned with determining the distribution of this infection in man, animals which serve as a source of infection, and the mites which transmit the infection. In addition, an attempt is being made to determine the distribution of other rickettsial diseases in Thailand.



BLADDER STONE



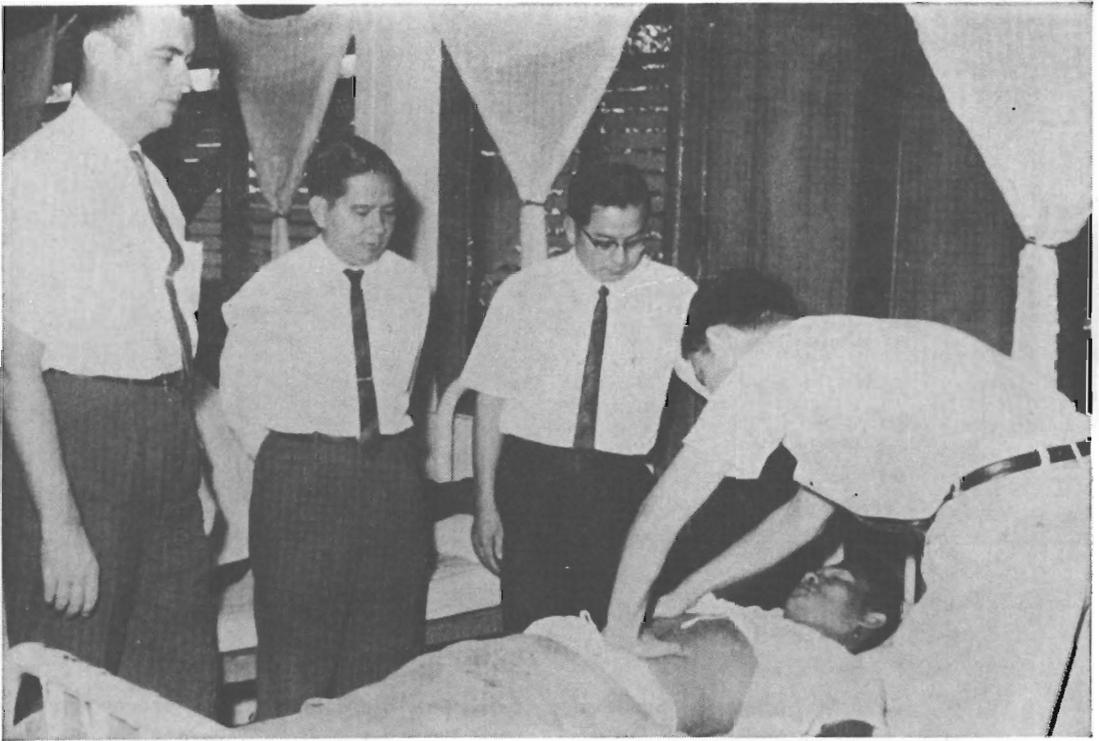
In the Northeast part of Thailand, approximately one per cent of the people have bladder stones. It is estimated that surgical operations for the removal of bladder stones constitute over 50 per cent of all major surgical procedures in Thailand. This condition is not limited to Thailand and is known to occur in Pakistan, Indonesia and China. This disease has been studied now for several years in the Clinical Research Center in an attempt to determine those factors associated with and possibly causing the disease. Studies conducted to date include a survey of the prevalence of the disease in various areas of Northern and Northeastern Thailand, an evaluation of the dietary habits of the inhabitants of both endemic and hypoendemic areas, and chemical studies of minerals and other substances in the urine of both those affected and those not affected. Several potential causative factors have been identified, including dehydration and very low protein intake in early life. Further detailed metabolic studies are in progress. The aim of this research is the development of feasible prophylactic measures.



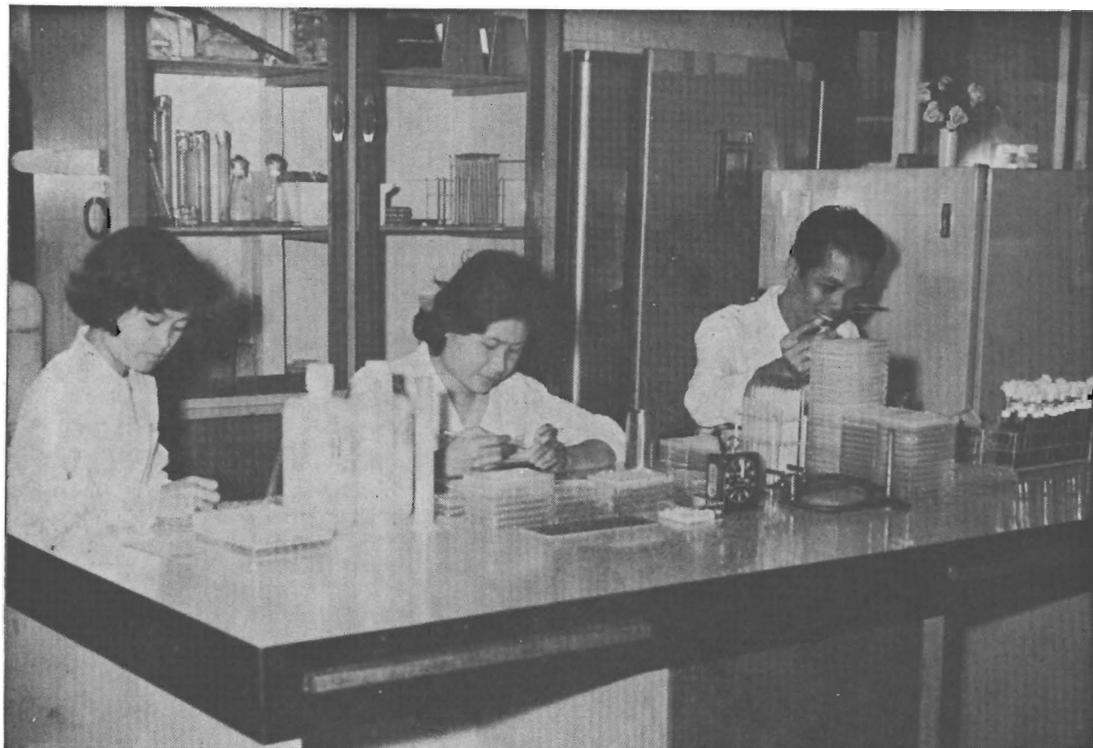
MALARIA



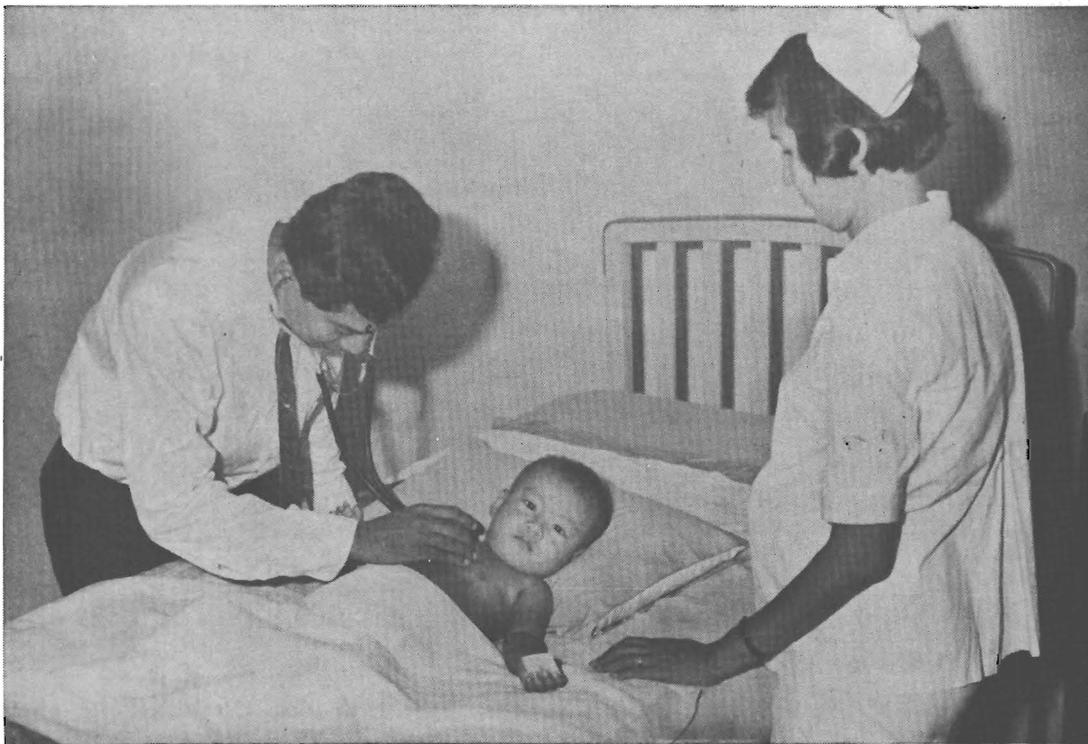
Malaria, a well known disease transmitted by mosquitoes, is one of the most serious health problems in this part of the world. Many difficulties have been encountered by public health authorities in the control and eradication of this disease; e.g., many of the mosquitoes transmitting the disease either have become resistant to the commonly used insecticides or have changed their habits so that they do not rest on the surfaces which have been treated with insecticides; and many strains of the malaria parasite have become resistant to most of the drugs used in the treatment of the disease. Studies of malaria being carried on at present are quite comprehensive and include those concerned with clinical complications, the biochemistry and immunology of the malaria parasite, the mosquitoes that transmit the disease, and laboratory animal models of human malaria.



THAI HEMORRHAGIC FEVER



This is one of the arthropod-borne virus (arbovirus) infections which occurs frequently in Thailand and other South East Asian countries. The disease is seen commonly among the local children and is a very serious disease with death seen in as high as 10 per cent of the patients. The same viruses that cause classical dengue fever among adults and children in other areas of the world would cause this serious hemorrhagic disease. Studies are concerned with attempting to determine why children in South East Asia react in such a manner to these viruses. Other studies in this general field are concerned with Japanese B encephalitis and chickungunya virus infections; e.g., their distribution and significance as a cause of human disease.



DIARRHEAL DISEASES



This group of diseases, which includes cholera, typhoid, shigellosis, salmonellosis, amebiasis, etc. is responsible for the death of many young children in South East Asia and is an important cause of morbidity among adults. The treatment of these infections has been complicated by the finding that many of the bacteria causing these diseases have become resistant to most of the antibiotics which formerly were effective. Research studies are aimed at determining which bacteria and parasites are important as causes of human disease in Thailand and which antibiotics are useful. Other studies are concerned with the metabolic products of the cholera organism in an attempt to learn why infection with cholera organisms results in such copious outpouring of fluids with via the intestinal tract. Understanding of this mechanism is expected to lead to a more effective and specific treatment and perhaps more effective methods for the prevention of cholera.



ARTHROPODS OF MEDICAL IMPORTANT



Several laboratory and field studies are concerned with mosquitoes, ticks, mites, and fleas of Thailand which are known to carry various diseases such as malaria, scrub typhus, murine typhus, plague, Thai hemorrhagic fever, and Japanese B encephalitis. These studies are concerned with the distribution and behavior of these vectors. Laboratory colonies of mosquitoes have been established to study the transmission of diseases and for the evaluation of insecticides and chemical repellents. The identification, description, and cataloging of the arthropods of Thailand are other purposes of these studies. The objective of these research is the eventual development of effective measures for the control of arthropod-borne diseases in Thailand.

