

ANNUAL PROGRESS REPORT

SEATO Medic Study No. 67 Cholera and Enterobacteriaceae Survey in  
Chiengmai

Project No. 3A 025601 A 811 Military Medical Research Program S. E. Asia

Task 01: Military Medical Research Program S. E. Asia

Subtask 01: Military Medical Research Program SEASIA  
(Thailand)

Reporting Installation: US Army-SEATO Medical Research Laboratory,  
APO 146, San Francisco, California

Division of Medical Research Laboratories

Department of Bacteriology and Immunology

Period Covered by Report: 1 December 1963 to 31 March 1964

Principal Investigator: Leon J. Le Beau, Ph.D.\*

Associate Investigator: Howard E. Noyes, Ph.D.

Assistants: Parimon Khanjanasthiti  
Pat Chirasevinuprapund

Reports Control Symbol: MEDDH-288

Security Classification: UNCLASSIFIED

\* Professor of Microbiology, Univ. of Illinois and Faculty of Medicine,  
Chiengmai Hospital

ABSTRACT

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The objective of this project is to determine the pathogenic enteric bacteria in Chiengmai, Thailand. Analyses of 250 Chiengmai water specimens from the river, klongs, wells etc. yielded 1 strain of Vibrio cholerae (Inaba), 18 salmonella strains, 3 shigella strains and 34 non-agglutinating vibrios. Eighty-four samples of ice cream, ice, food of cold drinks from commercial sources were studied. Specimens from all four groups contained coliforms but no salmonella or shigella.

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BODY OF REPORT

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Objective: To determine the pathogenic enteric bacteria in Chiengmai, Thailand. Repeated samples of food and water sources should provide important medical intelligence to be utilized in the prevention of outbreaks of acute diarrhea.

Description: Water samples analyzed in this study were collected from sources used for drinking and domestic purposes, and food samples were collected from commercial sources in the Chiengmai area. Most specimens were collected in 500 - 1,000 ml. volumes and passed through Millipore HA filters. Half of each membrane was incubated in Alkaline Peptone broth and the other half in Selenite-F broth. Routine laboratory procedures were used for final identifications.

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Progress: Water specimens yielded one Vibrio cholerae (Inaba), 18 Salmonella species 3 Shigella sp. and 34 non-agglutinating vibrios (Table I). The ice cream specimens contained coliforms, yeasts, cocci, Alcaligenes sp. and one non-agglutinating vibrio. Half of the specimens of ice were bacteriologically sterile, the remainder contained Alcaligenes sp., Proteus sp. and cocci. Cold drinks contained coliforms; Pseudomonas sp., Alcaligenes sp. and an organism tentatively identified as an Arizona. It is of obvious significance that water sources and commercial sources of food and drinks in Chiangmai serve as potential - if not actual - sources of enteric infections.

Summary: Analyses of 335 samples of water from various sources, ice cream, ice, food and cold drinks showed that representatives of each group contained coliforms, and in some instances known enteric pathogens were isolated.

Conclusion: Commercial water and food sources in Chiangmai, Thailand are often sources of enteric infections. Continuous surveillance of these sources will assist local authorities to control these infections

TABLE I

Specimens Examined for Enterobacteriaceae in Chiangmai, Thailand

<u>Item</u>	<u>No. of Specimens</u>
Water (river, klong, standing, well, & jar)	250
Ice Cream	43
Ice	16
Food (mostly gravies from curry sold cold)	16
Cold drinks sold in market	9
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Total	<u>334</u>