平成元年度

帰国研修員フォローアップチーム報告書

—— 微生物病研究分野公開技術セミナー ——

平成３年３月

国際協力事業団
大阪国際研修センター

序　　文

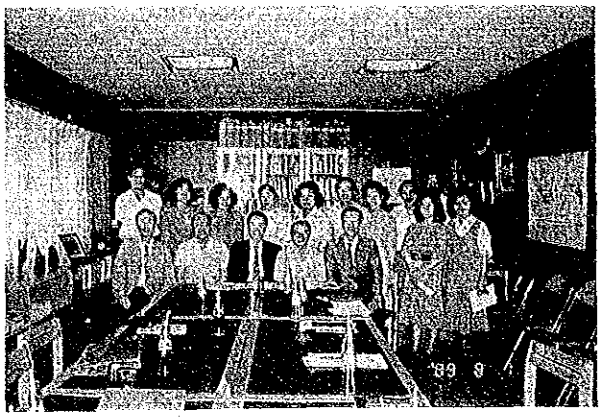
国際協力事業団は大阪大学微生物病研究所の協力を得て昭和４４年から平成元年まで２１回にわたって途上国において微生物病の検査、研究に従事する研究者、技術者を対象として微生物病研究コースを実施した。また、同コースがすでに２１年にわたって実施された一方で、微生物病研究の分野はバイオテクノロジーの目覚ましい進歩とともに、高度にかつ複雑化されてきた。このような変化に対応するため当事業団では、より高度な研究内容が研修できるよう、従来の検査技術の習得に重点を置いた同コースを平成元年度限りで終了させ、新たにそれらの技術を駆使し、研修員が自ら研究を進めていくことに重点を置いた上級微生物病研究コースを同じく平成２年度から開始した。

このような時期に合わせ、当事業団では微生物病研究コースの帰国研修員に対するフォローアップ事業の一環として最新の学術情報の提供のための公開セミナーの開催、および帰国研修員の現況調査を目的とした微生物病研究コース帰国研修員公開技術セミナーチームを平成元年７月３０日から８月１７日までの１９日間にわたって、インドネシア、タイ、フィリピンの３か国に派遣した。この報告書は同チームの現地での活動結果をとりまとめたものである。

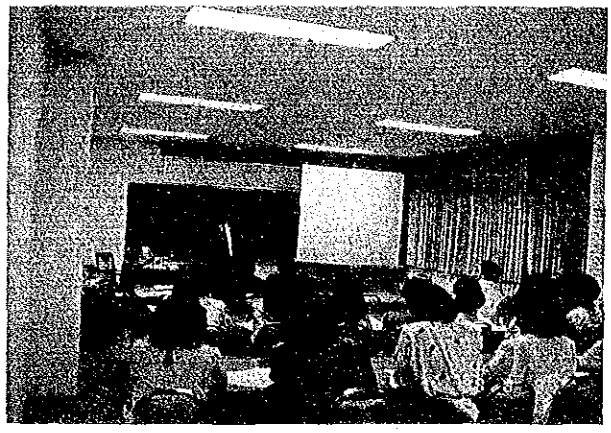
ここに本セミナーの開催にあたりご協力頂いた方々に対し、深甚なる謝意を表すると共に、今後も引き続き研修コースに対するご支援、ご協力をお願い申し上げる次第である。

平成３年３月

国際協力事業団
大阪国際研修センター
所長　八島継男



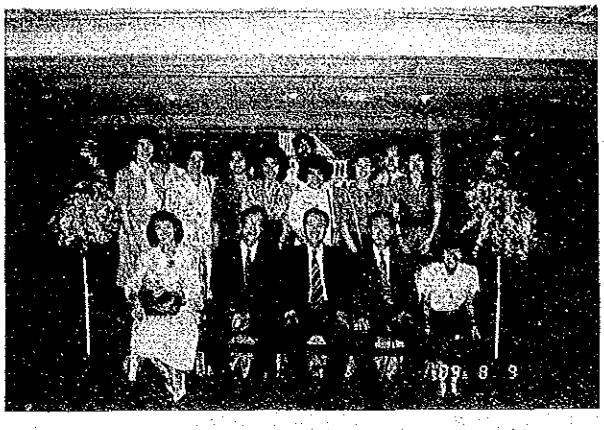
インドネシア国立衛生研究開発所にて
帰国研修員らと



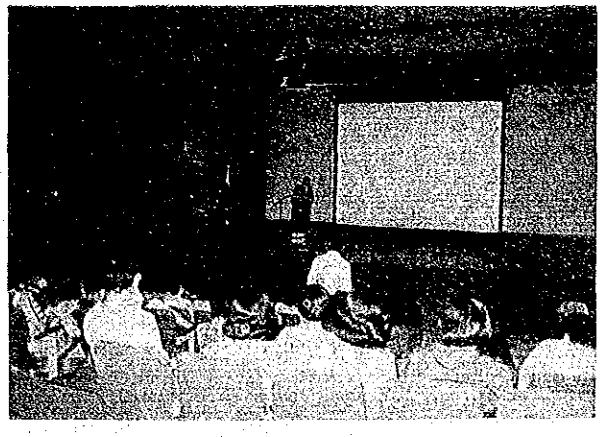
タイ国立衛生研究所にて
公開技術セミナー

タイ　マヒドン大学医療技術学部にて
帰国研修員の活動視察

タイ　マヒドン大学公衆衛生学部教授陣との協議



タイ セントラルプラザホテルにおける
帰国研修員との懇親会



フィリピン熱帯医学研究所にて
公開技術セミナー

フィリピン熱帯医学研究所にて
帰国研修員と

フィリピン熱帯医学研究所にて
公開技術セミナー参加証授与式

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Ⅰ．公開技術セミナーチーム派遣の概要

１．公開技術セミナーチーム派遣の経緯と目的

微生物病研究コースは大阪大学微生物病研究所（以下、阪大微研と略す）を受け入れ先として昭和４４年度から元年度まで２１年間にわたって１３４人の研修員を受け入れてきた。その後バイオテクノロジーの目覚ましい進歩に合わせ、当該分野の研究技術は著しく高度化し、今や分子、遺伝子レベルでの研究が主流になってきており、途上国でもこのような先進技術を駆使して研究を行える人材の養成が急務となってきた。大阪国際研修センターでは当該分野を取り巻くこのような状況の変化に対応するため、阪大微研と協議し従来の微生物病研究コースを平成元年度限りで廃止し、受け入れ資格を修士修了レベル以上とし、研修目的も従来の検査技術の習得から研究計画、実施の能力向上に移した上級微生物病研究コースを同年度から開設することとした。

今般、このような研修コースの変革期に合わせ、帰国後の研修員の動向を把握し、研修コースの効果を確認、かつ研修員を含め各国の微生物病研究分野の第一線で活躍する研究者を対象に、公開技術セミナーを開催して当該分野での最新の情報を提供、彼らの技術、知識の向上を図ることを目的として、帰国研修員公開セミナーチームを派遣することとなった。なお、派遣国については、受け入れ実績の最も多いタイ（２６名）を軸として、同３位のフィリピン（１７名）、５位のインドネシア（１４名）の３か国とした。

２．団員構成

団長（総括、ウィルス学）	高橋理明	大阪大学微生物病研究所 麻疹研究部門教授
団員（細菌学）	松田守弘	大阪大学微生物病研究所 抗酸菌生理学部門教授
団員（防疫学）	上田重晴	大阪大学微生物病研究所 防疫学部門教授
団員（業務調整）	石井羊次郎	国際協力事業団 大阪国際研修センター研修課

3．　日程表

日順	月日	曜日	行　程　お　よ　び　活　動　内　容	宿泊地
	平成元年			
1	7/30	日	大阪発（11:00）　CX503/ GA875　ジャカルタ着（19:00）	ジャカルタ
2	31	月	JICAインドネシア事務所打ち 合わせ、大使館表敬、内閣官房表敬	〃
3	8/ 1	火	保健省伝染病研究所視察、インドネシア大学医学部視察	〃
4	2	水	公開技術セミナー開催（ジャカルタ ヒルトンホテルにて）、 懇親会（ 同ホテル にて）	〃
5	3	木	移動 （ ジャカルタ➡➡➡バンドン ）	バンドン
6	4	金	ビオファルマ研究所視察、移動 （ バンドン ➡➡➡ジャカルタ ）	ジャカルタ
7	5	土	ジャカルタ発（14:30） SQ155 / SQ070 バンコク着（20:00）	バンコク
8	6	日	資料整理	〃
9	7	月	JICAタイ事務所打ち 合わせ、国立衛生研究所視察、セミナー開催準備	〃
10	8	火	マヒドン大学医療技術学部、シリラー病院、公衆衛生学部視察、DTEC打ち 合わせ	〃
11	9	水	公開技術セミナー開催（国立衛研にて）、 懇親会（セントラルプラザホテルにて）	〃
12	10	木	移動（ バンコク➡➡➡ チェンマイ）、 チェンマイ大学医学部視察	チェンマイ
13	11	金	公開技術セミナー開催（チェンマイ大学医学部にて）、移動（チェンマイ➡バンコク）	バンコク
14	12	土	バンコク発（10:30） TG620 マニラ着（14:30）	マニラ
15	13	日	資料整理	〃
16	14	月	JICAフィリピン 事務所打ち 合わせ、大使館表敬、NEDA表敬、熱帯医学研究所視察、セミナー開催準備	〃
17	15	火	保健省研究局長表敬、 フィリピン大学公衆衛生学部視察	〃
18	16	水	公開技術セミナー開催（ 熱帯医学研究所にて）、懇親会（ 同研究所）	〃
19	17	木	マニラ 発（15:30） TG620 大阪着（20:00）	

4．主要面談者

1) インドネシア

内閣官房 (Secretariat Cabinet)

Dr. Husen Adiwisastra	Chief, Indonesia TCDC Project, Bureau of Bereau of Int'l Technical Cooperation

保健省 (Ministry of Health)

Dr. Gundon Hartono	Director General of the National Institute of Health Research and Development
Dr. Suharyono	Dierctor, Communicable Diseases Center

インドネシア大学 (University of Indonesia)

Prof. Asri Rasad	Dean, Faculty of Medicine
Dr. Suharno Josodiwondo	Dermato venereologist, faculty of Medicine

生物製剤公社 ビオファルマ 研究所 (Perusahaan Umum Bio Farma)

Dr. Darodjatun	President Director
Drs. Soetaryo	Production Director

日本大使館

中垣俊郎	一等書記官

JICA事務所

田口徹	次長
布施淳	所員

2) タイ

経済技術協力庁 (Department of Technical and Economic Cooperation)

Mr. Manop Tangusaha	Chief of Policy & Planning Sub-div., Technical Services Division

保健省医科学局 (Department of Medical Sciences, Ministry of Public Health)

Mrs. Preeya Kashemsant	Director General
Drs. Boonluan Phanthumachinda	Deputy Director General, Director of the National Institute of Health
金井興美	国立衛生研究所プロジェクトチームリーダー

マヒドン大学 (Mahidol University)

Dr. Rojrung Suvanasuthi	Radiotherapist, Siriraj Hospital

チェンマイ大学 (Chiang Mai University)

Dr. Luechai Chulasai	Vice President
Dr. Tajatat Tejasen	Dean, Faculty of Medicine
Dr. Sanit Makonkawkeyoon	Ass. Prof., Dept. of Clinical Immunology
Dr. Vicharn Vithayasai	Chairman, Dept. of Immunology

JICA事務所

斉藤　勉	所長
原　知佐	所員

3) フィリピン

国家経済開発局 (National Economic & Development Authority)

Ms. Carmencita J. Guiyab	Executive Officer, Special Committee on Scholarships

保健省 (Department of Health)

Dr. Tomas Maramba, Jr.	Undersecretary of Health Office for Standards & Regulation
Dr. Mediadora C. Saniel	Director, Research Institute for Tropical Medicine

フィリピン 大学 (University of Philippines)

Dra. Jane Baltazar	Dean, College of Public Health

日本大使館

岡本　浩二	二等書記官

JICA事務所

宮本　守也	所長
大島　勝彦	次長
齋藤　克郎	所員

II. 公開技術セミナーの概要

【インドネシア】

1．実施状況

（1）開催日時

平成元年８月２日午前９時から午後５時まで

（2）会場

ジャカルタ　ヒルトンインターナショナルホテルにて

（3）参加者

聴講者総数　５５名　（内訳は別添　　セミナー参加者リストのとおり）

（4）セミナー内容

09:00 - 09:15	開会の辞	Dr. Gundon Hartono（国立衛生研究開発ｾﾝﾀｰ所長）
09:15 - 09:20	挨拶	田口徹（ＪＩＣＡｲﾝﾄﾞﾈｼｱ事務所次長）
09:20 - 10:50	セミナーI.	"Recent Advances in Viral Vaccines" 司会；Dr.Pratiwi Soedarmono(ｲﾝﾄﾞﾈｼｱ大学医学部講師) 講師；高橋教授
10:50 - 11:00	休憩	ｾﾐﾅｰ会場横のﾎｰﾙで意見交換
11:00 - 12:30	セミナーII.	"Measles and Its Prevention" 司会；Mrs. Mulyati（国立伝染病ｾﾝﾀｰ） 講師；上田教授
12:30 - 13:30	昼食会	ｾﾐﾅｰ会場横のﾎｰﾙで懇親会
13:30 - 15:00	セミナーIII.	" Recent Advances in the Studies on the Function of Bacterial Protein Toxines (esp. Tetanus Neurotoxine) in Relation to the Improvement of Tetanus, Diphteria and Pertusis Vaccines" 司会；Mrs. Mulyati（国立伝染病ｾﾝﾀｰ） 講師；松田教授
15:00 - 15:30	休憩	ｾﾐﾅｰ会場横のﾎｰﾙで懇親会
15:30 - 17:00	セミナーIV.	"Randamized Double Blind Placebo Control Trial of Typhoid 21A Oral Vaccine in Plaju, South Smatra" 司会；Mrs. Mulyati（国立伝染病ｾﾝﾀｰ） 講師；Dr. Cyrus H. Simanjuntak
17:00	閉会	田口JICA事務所次長

２．講義内容

別添　　セミナー配布資料のとおり

３．帰国研修員懇親会

セミナー開催日には昼食会を帰国研修員を含めた懇親会とした。帰国研修員との意見交換会は、８月１日、帰国研修員の多くが所属している伝染病研究所にて帰国研修員および関係者の１４名と共に実施した。

【　タ　イ　】

１．実施状況

（１）開催日時

平成元年８月９日午前８時３０分から午後４時３０分まで

（２）会場

タイ国立衛生研究所（ノンタブリ）にて

（３）参加者

聴講者総数　４８名　（内訳は別添　　セミナー参加者リストのとおり）

（４）セミナー内容

08:30 -	受付開始	
08:45 - 08:50	開会の辞	斉藤勉（ＪＩＣＡタイ事務所長）
08:50 - 09:00	挨拶	Mrs. Preeya Kashemsant(保健省医科学局長)
09:00 - 10:30	セミナーI.	"Recent Advances in Viral Vaccines" 司会; Dr. Pricha Desawasdi (国立衛研副所長) 講師; 高橋教授
10:30 - 11:00	休憩	国立衛生研の食堂にて懇談
11:00 - 12:15	レクチャー	司会; Dr. Pricha Desawasdi (国立衛研副所長) "Recent Advances in Bacteriological Studies in Thailand" 講師; Mrs. Surang dejsirilert (国立衛研研究員) "Recent advances in Virological Studies in Thailand" 講師; Dr. Chuinrudee Chaivasu(ｳｨﾙｽ研所長)
12:15 - 13:15	昼食会	国立衛生研の食堂にて
13:15 - 14:45	セミナーII.	"Measles and Its Prevention" 司会; Dr. Pricha Desawasdi (国立衛生研副所長) 講師; 上田教授

14:45 - 15:00	休憩	国立衛生研の食堂にて懇談
15:00 - 16:30	セミナーIII.	" Recent Advances in the Studies on the Function of Bacterial Protein Toxines (esp. Tetanus Neurotoxine) in Relation to the Improvement of Tetanus, Diphteria and Pertusis Vaccines" 司会: Dr. Pricha Desawasdi (国立衛生研副所長) 講師: 松田教授
16:30	閉会挨拶	高橋教授

２．講義内容

別添　　セミナー配布資料のとおり

３．帰国研修員懇親会

セミナー終了後、午後６時３０分からバンコク市内のセントラルプラザホテルにて帰国研修員のほか、保健省、国立衛研スタッフ、日本人専門家、約６０名を招待して懇親会を実施した。セミナー参加証は後日各参加者に送付された。

【　フィリピン　】

１．実施状況

（１）開催日時

平成元年８月１６日午前８時から午後５時まで

（２）会場

国立熱帯医学研究所（アラバン）にて

（３）参加者

聴講者総数　５３名　（内訳は別添　　セミナー参加者リストのとおり）

（４）セミナー内容

08:00 -	受付開始	
08:30 - 08:35	開会の辞	Dr. Madiadora C. Saniel (国立熱帯医研所長)
08:35 - 08:40	挨拶	宮本守也（ＪＩＣＡフィリピン事務所長）
08:40 - 09:20	ﾌｨﾙﾑｼｮｳ	国立熱帯医研活動紹介 JICA事業紹介
09:20 - 09:30	ｾﾐﾅｰﾁｰﾑ 紹介	石井職員
09:30 - 10:50	セミナーI.	"Recent Advances in Viral Vaccines" 司会; Prof. Nidia M. Manuson (ﾌｨﾘﾋﾟﾝ 大学教授) 講師; 高橋教授

10:50 - 11:00	休憩	国立熱帯医研講堂ﾎｰﾙ にて懇談
11:00 - 12:40	セミナーII.	"Measles and Its Prevention" 司会; Prof. Nidia M. Manuson (ﾌｨﾘﾋﾟﾝ 大学教授) 講師; 上田教授
12:40 - 13:40	昼食会	国立熱帯医研講堂ﾎｰﾙ にて
13:40 - 15:10	セミナーIII.	" Recent Advances in the Studies on the Function of Bacterial Protein Toxines (esp. Tetanus Neurotoxine) in Relation to the Improvement of Tetanus, Diphteria and Pertusis Vaccines" 司会; Prof. Nidia M. Manuson (ﾌｨﾘﾋﾟﾝ 大学教授) 講師; 松田教授
15:10 - 15:30	休憩	国立熱帯医研講堂ﾎｰﾙ にて懇談
15:30 - 17:00	セミナーIV.	"Vaccine Development in Schistosomiasis and other Parasitic Diseases" 司会; Prof. Nidia M. Manuson (ﾌｨﾘﾋﾟﾝ 大学教授) 講師; Dr. Remigio M. Olveda (国立熱帯医研研究員)
17:00	閉会	

２．講義内容

別添　　セミナー配布資料のとおり

３．帰国研修員懇親会

セミナー終了後、午後６時から国立熱帯医研宿舎集会場にて帰国研修員のほか、セミナー参加者、約５０名を招待して懇親会を実施した。また、懇親会席上、斉藤ＪＩＣＡ事務所長からセミナー参加証が各参加者に授与された。

Ⅲ. 各国における微生物病研究分野の状況

【 インドネシア 】

インドネシアでは以下の２機関を主に視察した。両機関の概要は以下のとおり。

１．保健省衛生研究開発所（The National Institute of Health and Development）

１９７５年、保健省の１機関として設立。国家開発を支援する保健衛生分野の研究開発活動の指揮監督ならびに実施機関でもある。保健衛生促進国家プログラムを支援する研究開発事業の策定、実施、内外の研究機関との協力事業の促進を事業内容としている。

以下の６研究機関およびそれらを統括する本部によって構成されている。

伝染病研究所 （ The Communicable Diseases Research Center ）

非伝染病研究所 （ The Non-Communicable Diseases Research Center ）

衛生生態研究所 （ The Health Ecology Research Center ）

医薬品研究開発センター （ The Drug Research and Development Center ）

栄養研究開発センター （ The Nutrition R & D Center ）

保健サービス研究開発センター （ The Health Services R & D Center ）

今回訪れたのは帰国研修員３名が所属している伝染病研究所のみであった。同研究所は４０名の研究員と９０名の補助スタッフがおり、ジフテリア、百日ぜき、破傷風などの細菌性伝染病を研究する分野と、エンテロウイルス、ロタウイルス、風疹、デング熱などのウイルス性伝染病を研究する分野とに別れている。いずれも研究とはいっても検体の診断業務が主体となっている様子であった。帰国研修員やその他のスタッフからは研究資金、設備の不足に加えて、最新の研究情報の入手が難しいとの意見が多く聞かれた。

２．保健省生物製剤公社 （ Perum Bio Farma ）

保健省食品薬品総局の監督下にあり、保健省の下にある４つの国営企業のうちのひとつである。インドネシア国内で唯一ワクチンを製造している機関である。医学、獣医学、薬学、科学の専門家を中心として４３０名のスタッフが勤務している。現在のところ純粋な研究活動は行っておらず、狂犬病などのワクチン製造および、へび毒の抗血清などを製造している。平成元年度から本邦の技術協力事業として開始される生ワクチン製造基盤技術プロジェクトのサイトとして、麻疹ワクチンおよび小児まひワクチンの製造、検定のための施設建設、技術者養成事業が開始されている。本研修コースにも既に２名の研修員が同公社から参加しており、平成元年度も本コースに１名の他個別研修員として数名が本邦にて研修を行っている。従来からの狂犬病当のワクチン製造の経験があり、技術水準が高いため、今後の麻疹、および小児まひワクチンの製造についても専門家派遣および研修員受入事業による技術支援があれば十分こなせるものと思われる。ただし、ワクチンの品質管

理については、関連の産業技術が未整備なため今後とも十分な管理技術の指導が必要と思われる。

【　タイ　】

1．保健省国立衛生研究所（ National Institute of Health ）

保健省医科学局の監督下にあり、１９８６年日本政府の援助により、バンコク郊外のノンタブリ地区に建設された。タイ国家の医療事業促進を目的として疾病の予防、対策、健康増進のための研究、研修活動を主要業務としている。ウイルス、細菌、真菌、寄生虫、免疫、生物製剤開発、医学昆虫、薬用植物、環境衛生、食品生物医学、薬学、の各分野における研究活動が行われている他に、各種診断検査技術の研修が実施されている。

日本の無償援助によって施設、研究機材が整備されている他、プロジェクト技術協力も行われているため、日本人専門家からの技術アドバイス、カウンターパート研修での実績があり、微生物病研究コースの帰国研修員も合わせ、研究者の技術水準は極めて高い。今後はより高度な実験技術の習得と合わせ研究活動の組み立て方や研究成果のまとめ方に関する指導が重要になると思われる。

2．チェンマイ大学医学部

当大学医学部はバンコク医療大学（現在マヒドン大学医学部と改称）の一部として１９５８年に設立された。現在付属の病院と合わせ３２２名の教官、１，４５５名の看護婦および看護助手、５５２名の管理部門職員、７８５名の医学生から構成されている。年間１２０名程度が医師として卒業している。

組織は１．Medical Schoo、2. Maharaj Nakorn Chiang Mai Hospital、3.Graduate School、4. Resident School　から成り立っている。

病院は１４の臨床分野、１，７００ベットの入院施設を有し、１日当たりの外来患者数は１，３００－１，５００名と極めて多く、バンコク以北の医療の中心となっている。ただし、今回視察した感染小児病棟でも清浄域と汚染域の区分が不十分で院内感染の危険があり、設備の不備、病院管理上の問題があった。

学部は２０の学科に別れて、今回は帰国研修員が所属する微生物病学科（Depaertment of Microbiology ）を視察した。同学科ではチェンマイ地域でも問題化されてきているエイズに関し、その疫学的な調査を同じ大学内にある保健科学研究所（ Research Institute for Health Sciences ）と協力して実施している。血清学的検査技術は一定の水準を有しているが、調査を拡大、予防教育を拡大していくための資金が不足しており、国内外の援助期間に支援を依頼している現状であった。

3．マヒドン大学公衆衛生学部微生物学科（ Department of Microbiology, Faculty of Publoc Health, Mahidol University ）

学科長のAsst. Prof. Kanda の下に３名の教授、４名の助教授、１名の講師、３名の教官がおり、学部学生、修士課程学生、公衆衛生看護師、看護婦の教育にあたっている。学生数は各学年３００名程度。教育事業の他、微生物病にかかる研究、公衆衛生普及活動も行っている。研究活動は日本脳炎予防接種や消化器感染症、呼吸器感染症の疫学的研究が主体である。保健衛生の普及活動と連携した実践的疫学研究といえる。血清学的検査、調査活動が多く、バンコクの Din-Daeng 地区をモデルに実態調査と適切な伝染性疾患の予防対策のあり方を検討している。

【フィリピン】

1．保健省熱帯医学研究所 (Research Institute for Tropical Medicine, Department of Health)

日本の無償資金協力により施設が整えられた医学研究機関で、フィリピンにおける熱帯医学の研究及び人材養成の重要な拠点となっている。また日本からのプロジェクト技術協力も行われ、１９８８年までに３３人の長期及び短期の専門家が日本から派遣され、同研究所からは２１名がカウンターパート研修及び集団コースでの研修を日本で受けてきている。スタッフ数は約１７０名。急性呼吸器疾患、小児下痢性疾患、シストソーマ症、エイズ、マラリア、Ｂ型肝炎、癩症の研究が中心的に行われている。各研究活動については、１９８７年にフィリピンにおける医学保健研究活動を促進するために設立された新熱帯医学基金（ New Tropical Medicine founndation, Inc.)を通じて得たオーストラリア政府、ＵＳＡＩＤ、ＷＨＯ、国際原子力協会等からの資金を中心にして行われている。研修活動については、国内の研究者を対象とした研修のほかに、ＪＩＣＡの第３国研修計画によって東南アジア７か国の研究者を招聘して呼吸器及び下痢性の疾患に関する研究訓練が行われている。研究成果の発表も活発に行われており、１９８８年度は２１の研究成果が国内外の専門誌に発表された。

IV. 研修コース改善への具体的提言

今回３か国での公開技術セミナーの開催に合わせ、それぞれの国で帰国研修員との意見交換、Questionnaire の回収分析、及び所属先での活動状況の視察を通じて帰国研修員の現状、研修コースの効果の確認並びに今後の改善策を検討することができた。

まず帰国研修員の現状については、ほとんどの帰国研修員が各研究機関で指導的地位についており、日本で習得した微生物病研究に関する技術や知識を広く普及させる重要な立場を担っている。彼らは自らの研究活動を進めるほかに、研究室員、学生、検査技術者に対する教育、訓練も担当しており、研修コースで習得した技術、知識は効果的に各国の研究、検査技術の水準の向上に貢献しているものと判断される。具体的に先進の検査技術の習得が役立ったとの回答のほか、自ら研究を計画、管理実行して行く能力を身につけたと答えたものも多かった。各国とも研究を行う環境は決してよいとは言えず、与えられた条件下でいかに効果的で応用的な研究を行うかということが重要であり、その考え方の基礎が身についたということは研修コースの大きな成果といえよう。

帰国研修員の研究環境については、施設、資機材、研究予算の不足のほか、最新情報収集体制の不備、彼らの研究に対するアドバイスシステムの不備が主な問題であろう。帰国研修員フォローアップ事業の一環として、継続的な文献供与や微研の指導教官の継続指導体制を整えるなどして帰国後も研修員の研究活動を支援できるよう配慮することも必要であろう。

帰国研修員の今後の研修希望については多くが再度日本の研究機関、特に微研での研修を希望している。従来から研修コースの評価会の際、研修員及び研修受入側双方から、やっと本格的な研究体制に入ったところで帰国となってしまうとの指摘があった。来日してから、研修員のレベルと興味を確認した上で本人に合った研修計画を組むために本格的な研究体制に入るのが遅れ、中途での帰国となってしまうケースが多かった。帰国研修員が微研での再度の研修を希望している背景には、微研の活動状況、研究体制、内容を既に熟知しており、すぐにその研究体制に溶け込めること、またそれによって前回達成できなかったものを完成させたいという希望があるものと思われる。平成元年度から開始する上級微生物病コースは従来の微生物研究コースの後継コースとして、既に微生物病研究の基礎の確立している研究者を対象に、より高度の研究を行う技術、知識を付与することを目的としたコースであることから、研究方針の明確な帰国研修員については積極的に上級コースに再参加させていくこともよいであろう。

従来の微生物病研究コースは平成元年度をもって終了し、その後は上級微生物病研究コースの研修期間を平成元年の３か月コースから従来の微生物病研究コースト同様の約１１か月間の研修コースとして継続実施して行く予定となっている。従来のコースでも指摘されていた専攻期間の問題については、上級コースはより専門性の高い、個別に研究テーマを絞ったコースとなることから従来以上に研修期間に十分な余裕を取り、候補者の具体的研修希望および研究能力を確認した上で受入の可否を決定する必要がある。また研修員の決定から来日までの期間も最低でも２か月程度取り、受入側も個々の研修員おニーズにあった受け入れ体制を整えておくようにすべきであろう。また割当国についても、研修コースの主旨からしてある程度の研究水準を有している国または医療関係のプロジェクト技術協力の実績のある国を優先的に取り上げるべきであろう。

なお、従来コースの研修内容として取り上げられていた検査技術の研修については別途研究技師レベルの研修員を対象に、臨床検査専門学校などを受入先とした別の研修コースを設定して対応することも考える必要があろう。

添　付　資　料

添付資料 1.　公開技術セミナー英文配布資料（インドネシア編）

INFORMATION OF SEMINAR
ON
MICROBIAL DISEASES STUDY
2 August, 1989
IN
J A K A R T A

JAPAN INTERNATIONAL COOPERATION AGENCY

1. INTRODUCTION

Osaka International Training Center, Japan International Cooperation Agency, has been sponsoring the Group Training Course in Microbial Diseases Study held at Research Institute for Microbial Diseases, Osaka University since 1969. Up to this year, 21st years since the innauguration, the course has accepted 134 participants from 24 countries (14 participants from Indonesia), it is to our great pleasure that the former participants are laying and important role in their specialized fields.

With a view to improving the contents of this course, a new course titled "Advanced Microbial Diseases Study Course"is to be started in fiscal 1989.

This seminar will be held in Jakarta by JICA in collaboration with relevant authorities of the Government of Indonesia, i) to give an opportunity to ex-participants of the above mentioned training courses as well as other interested professionals who are following information processing and ii) to exchange views and opinions about the major issues of this field, and countermeasures to overcome them.

2. DATE

2nd August, 1989

3. PLACE

LIBRA A1 (Seminar Room)
Mawar Room (Luncheon Room)
Hilton International Hotel
Jl. Gatot Subroto, Jakarta

4. LECTURERS

- Prof. Michiaki TAKAHASHI, MD, Ph.D
  Department of Virology,
  Research Institute for Microbial Diseases,
  Osaka University

- Prof. Norihiro MATSUDA, MD, Ph.D
  Department of Tuberculosis Research I,
  Research Institute for Microbial Diseases,
  Osaka University

- Prof. Shigeharu UEDA, MD, Ph.D.
  Department of Preventive Medicine,
  Research Institute for Microbial Diseases,
  Osaka University

- Mr. Yojiro ISHII
  Training Division,
  Osaka International Training Centre,
  Japan International Cooperation Agency

- Dr. Cyrus H. Simanjuntak
  CDRC , Ministry of Health

5. P R O G R A M M E

August 2, 1989

- 09:00	Registration	
09:00 - 09:15	Opening Remarks	
09:15 - 09:20	Address	Resident Representative of Japan International Cooperation Agency
09:20 - 10:50	Seminar I	"Recent Advances in Virai Vaccines " - Prof. M. TAKAHASHI Questions and Answers
10:50 - 11:00	Tea Break	
11:00 - 12:30	Seminar II	"Measles and its Prevention" - Prof. S. UEDA Questions and Answers
12:30 - 13:30	Lunch	
13:30 - 15:00	Seminar III	"Recent Advances in the Studies on the Structure and Function of Bacterial Protein Toxins (esp. Tetanus Neurotoxin) in Relation to the improvement of Tetanus. Diphteria and Pertusis Vaccines" - Prof.M. MATSUDA Questions and Answers
15:00 - 15:30	Tea Break	
15:30 - 17:00	Lecture IV	"Randomized Double Blind Placebo Control Trial of Typhoid 21A Oral Vaccine in Plaju, South Sumatra, Indonesia" - Dr. Cyrus H. Simanjuntak Questions and Answers
17:00 -	Closing	

6. SEMINAR FEE

F r e e

7. PARTICIPANTS OF SEMINAR

1) ex-participants of the JICA's training courses related to this theme

2) the personnel who are engaged in this field

8. R E G I S T R A T I O N

Registration can be made by sending the attached registration form to JICA Indonesia Office or submitting it to the reception of the seminar on August 2.

9. C E R T I F I C A T E

Certificate will be issued for the participants who attend all the Seminar.

10. DETAIL INFORMATION

To obtain the detailed information, please contact JICA Indonesia Office

Address : JICA Indonesia Office
Jl. Thamrin No.59, Jakarta
Telephone : 324247

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE)

SEMINAR ON
LATEST MICROBIAL DISEASES STUDY

Outline of the Group Training Course in Microbial Diseases Study Course

Osaka International Training Centre, Japan International Cooperation Agency, has been sponsoring the Group Training Course in Microbial Diseases Study held at Research Institute for Microbial Diseases, Osaka University since 1969. Up to this year, 21st year since the innauguration, the course has accepted 134 participants from 24 countries. (14 participants from Indonesia, 26 from Thailand and 17 from the Philippines.) It is to our great pleasure that the former participants are playing an important role in their specialized fields.

With a view to improving the contents of this course, a new course titled "Advanced Microbial Diseases Study Course" is to be started in fiscal 1989.

Aims of the Seminar

The Seminar mission is dispatched to Indonesia, Thailand and the Philippines to meet the former participants of the course, exchange opinions with them, and offer proper advice upon necessity. Finding out about the status quo of microbial studies in these countries and exchanging opinions with the audience of the seminar will help to upgrade the course in future.

Recent Advances in Viral Vaccines

Michiaki Takahashi
Department of Virology,
Research Institute for Microbial Diseases, Osaka University
Suita, Osaka 565, Japan

Hepatitis B vaccine produced by the genetic recombination techniques making use of yeast, and a live varicella vaccine have recently been introduced as new viral vaccines. Development of a herpes simplex vaccine, live influenza vaccine and rotavirus vaccine, and other vaccines is also ongoing.

The past few years have seen a remarkable technological progress in the development of new vaccines utilizing live organisms or key antigens present in the organisms, against which immunity might be directed. Also ongoing is the developement of recombinant live vaccines produced utilizing vaccinia, varicella, or adenovirus as the vectors.

IMPORTANT VIRAL VACCINES NEWLY DEVELOPED AND UNDER DEVELOPEMENT

1. HEPATITIS B VACCINE

A yeast recombinant has been developed using vectors that carry the surface antigen gene of HB. The purified antigen consists of a dimer identical to the polypeptides of human sources but unlike plasma-derived antigen, it is not glycosylated. The immunogenicity of the yeast-derived vaccines, measured in mice, chimpanzees, and human subjects, is the same or greater than that of plasma vaccines.

Recently, yeast-derived particles containing S+PreS2 protein have been developed. This vaccine appears to be more immunogenic than S particles in terms of T cell level. Clinical efficacy test of this type of vaccine is awaited.

2. LIVE VARICELLA VACCINE

A live varicella vaccine has been developed by serial passage of varicella-zoster virus (Oka strain) in human embryonic lung cells (11 times, 34 ° C) and guinea pig embryo cells(12 times, 37° C), and then in human diploid cells.

This vaccine can be safely used for immunocompromised children as well as for normal children. Some side reactions were observed in approximately 20% of immunocompromised children when immunized under certain conditions.

The protective effect is approximately 80% in immunocompromised children and more than 90% in nomral children. Careful observations suggest that incidence of zoster in vaccinated children would be less than that in the children who acquired natural infection.

This vaccine was licenced in 1984 in Europe, 1986 in Japan, and 1988 in Korea.

3. HERPES SIMPLEX VIRUS VACCINE

Subunit glycoprotein herpes simplex virus vaccine has been developed from infected chick embryo cells, human diploid cells, or purified virons. To date, induction of antibody and cell-mediated immunity in mice and remarkable protection against skin lesions, death, and ganglionic latency have been reported. The vaccine induces antibody and cell-mediated immune responses in human subjects. However, pathogenicity of this virus to human is not the same as that to mice; hence well-controlled clinical trial is required to draw a definite conclusion. A recent report of one study group indicates that subunit HSV-2 vaccine is not effective for the prevention of sexual transmission of HSV-2 in a double-blind test.

The recombinant vaccinia virus carrying HSV glycoprotein gene has been developed and its efficacy in mice has been reported. Roizman et al., have pursued the live virus approach to HSV vaccine by deletion of genes that are not required for replication. Obtained strains have demonstrated loss of neurovirulence, with retention of immunogenicity for mice. But a concrete proof of removal or modification of the potential oncogenic genes will be reqiured before the tests can be carried out in humans.

4. LIVE INFLUENZA VACCINE

A cold adapted strain developed by Naassab et al. was obtained by passage of influenza virus A at a low temperature (25°C). In clinical trials, a few clinical reactions with good immune reactions were observed. This strain seems to be genetically stable after replication in respiratory tract of humans. Avian-human reassortant influenza A virus has also been developed. Extensive field trials are reqired before practical use of these strains.

5. ROTA VIRUS VACCINE

Three kinds of live vaccine have been developed. The first is RIT 4237 vaccine, which is a bovine rotavirus. It was developed taking advantage of antigenic relationship between human and animal rotaviruses. The second, rhesus monkey rotavirus is another candiate for a live rotavirus vaccine. Bovine or rhesus monkey rotavirus may prove useful as a donor of attenuating gene that can be transferred to reassortant viruses that bear a major neutralization protein of the human rotavirus. As the third candiate vaccine, such single gene substitution reassortants which possess one human rotavirus gene coding for the neutralizing antigen, have been prepared. Such single-gene substitution reassortants induce immunity to viruses belonging to the serotype of their human rotavirus parent while retaining the attenuation of their parent viruses. A large scale field trial is required for evaluation of the protective efficacy.

6. HIV VACCINE (AIDS VACCINE)

Subunit HIV vaccine, recombinant vaccinia virus vaccine, has been under study. Immunogenicity of the experimental vaccine in experimental animals was reported. But its protective effect is not yet clear.

Recent advances in the studies on the structure and function of bacterial protein toxins (esp. tetanus neurotoxin) in relation to the improvement of tetanus, diphtheria and pertussis vaccines

Morihiro MATSUDA
Department of Tuberculosis Research I (Bacterial Toxinology)
Research Institute for Microbial Diseases
Osaka University

Recent studies on bacterial protein toxins (exotoxins) have revealed that there are two groups of bacterial toxins: 1. Toxins having enzymatic activities (Enzyme toxins); and 2. Toxins having no enzymatic activities or toxins whose enzymatic activities have not yet been elucidated. Diphtheria and pertussis toxins, whose toxoids are components of DPT vaccine, belong to the first group and they are the so-called A-B toxins. It has been shown that they have the same enzymatic activity, namely, ADP-ribosyl transferase. Fragment A (or subunit A) of diphtheria and of pertussis toxins carries this enzymatic activity. It catalyzes transfer of ADP-ribose moiety from NAD to the target molecule, inactivating the function of the target molecule. But the target molecule of Fragment A of diphtheria toxin and that of subunit A of pertussis toxin are different. Fragment A of diphtheria toxin ADP-ribosylates, a kind of GTP binding protein, elongation factor 2 (EF-2), which functions in the protein synthesis of eukaryotes, resulting in inhibition of protein synthesis. On the other hand, A subunit of pertussis toxin ADP-ribosylates another kind of GTP binding protein (Gi protein) which functions in the membrane signal transmissions, depriving of its function. Fragment B (or subunit B) of the toxins carries the binding activity to the receptor on sensitive cells. An increasing number of bacterial protein toxins have recently

inhibition of release of neurotransmitters at the presynaptic sites of the nerve terminals. We showed that Fragment (A-B) blocks both inhibitory and excitatory synapses almost simultaneously, unlike the whole toxin which blocks first inhibitory and subsequently excitatory synapses in the central nervous system. We developed a simple and rapid method of purification of tetanus toxin from cell extracts (intracelluar toxin) which will be useful for preparation of highly purified tetanus toxoid without side reactions due to contamination of nontoxin proteins. We are exploiting to develop the improved tetanus vaccine composed of only the fragments of tetanus toxin just sufficient to protect humans, as a future vaccine against tetanus, in order to eliminate the side reactions on the basis of the findings on the structure and function of tetanus toxin. We are also establishing hybridomas which produce human monoclonal antibodies having high neutralizing activity for prophylaxis of the non-immunized injured persons against tetanus and for treatment of tetanus.

Measles and its prevention

Shigeharu UEDA, M.D.

Professor

Department of Preventive Medicine

Research Institute for Microbial Diseases

Osaka University

Yamadaoka, Suita, Osaka 565, Japan

Measles is an infectious disease in the childhood, which is characterized by a high fever, catarrh and rash. The clinical course is one week in a typical case. A patient with measles excretes measles virus with cough and nasal discharge during an initial half part of the clinical course.

Measles causes pneumonia, encephalitis, and otitis media as its complications. Mortality rate of pneumonia is high in developing coutries, and the majority of the death occurres in infants less than one year of age.

Encephalitis is a severe complication. Incidence rate of encephalitis is one in 1000 ~2000 cases of measles. Case fatality of encephalitis is as high as 50%. Even after recovery, residual symptoms such as convulsions, mental retardation or change of character occur in high rates.

Another complication is subacute sclerosing panen cephalitis(SSPE). SSPE is one of slow virus infections. Measles virus infects the brain, and persists there. Neurons and oligodenrocytes are target cells. Gradual mental retardation is the initial symptom. Convulsions occur at later stage. In 6 months to one year, complete loss of intelligence occur. Patients with SSPE, however, can survive for several years, if medical cares with inosiplex and/or interferon are taken at the earlier

stage.

The only certain method for prevention of measles is vaccination with a live, attenuated virus vaccine. Current vaccine strains seldom cause adverse reactions, and the efficacy to prevent measles is very high and long-lasting. Usually, vaccination starts at age between 12 and 15 months. However, it can be initiated at early age of 9 months depending on the epidemiological situation of each country, because SAVE THE LIFE OF INFANTS FROM MEASLES is the primary concern.

RANDOMIZE DOUBLE BLIND PLACEBO CONTROLLED TRIAL OF THE EFFICACY OF TY21A ORAL TYPHOID VACCINE IN PLAJU, INDONESIA

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INTRODUCTION.

Typhoid fever is a serious disease and frequently occurring in developing countries[1,2]. The repoted incidence of life threatening complications and case fatality ratios ranging from 10-37% in the pre-antibiotic era, appeared to drop after the improvement in living conditions and the introductions of chlorampenicol[3]. However, some countries continue to report high incidence and increasing severity of the disease. These areas usually have several common charateristics, i.e. rapidly increasing populations and urbanisations, inadequate facilities for human waste disposal, decreasing water supply, extensive contact between the population, heavily contaminated foods and water supplies and overburdened health care delivery systems[2].

In Indonesia, hospitalized cases of typhoid fever of young adults very often causes severe complication of intestinal bleeding and/or perforation not uncommonly resulting in the death of the patients[4,5]. The results of the house-hold survey of 6 provinces suggest that 3,3% of all deaths in these provinces were caused by typhoid fever[6]. It is estimated that there are 20 to 60,000 deaths from typhoid per year.

The incidence of typhoid fever in developed countries is 0.24 to 10.5 cases per 100,000 population per year. In developing countries the lowest incidence is four times greater than that, and goes up to 1,600 per 100,000 population per year. The estimated number of global annual cases is approximately 12.5 million cases/year, excluding China. Mortality is about 0.5% up to 18% in isolated reports from developing countries[7].

Reported cases of typhoid fever in Indonesia are 19,596 in 1981 increased to 27,802 in 1983 and 26,606 in 1986 [8].

The annual incidence of typhoid fever is range from 360-850 cases per 100.000 population[9]. The incidence are highest in children of 5-19 years of age, ie. school children, a "captive" population in the community. The symptoms is much less severe in children than in adults, so most of the children cases that come to the clinics are the out-patients. In Indonesia, especially in slumps area, the sewage disposal is inadequate. Consequently, non-hospitalized cases of typhoid fever will be acts as an "effective" source of bacterial contamination to the environment. Control of the diseases requires uncontaminated water, effective sewage

disposal in order to provide good sanitation, prompt diagnosis and proper treatment of patients as well as asymptomatic carries. Unfortunately, these are not properly available in Indonesia, where typhoid fever is endemic[10,11]. In this situation the most effective tools to control the disease is to perform vaccination to the population, since it is very little opportunity on implementing control over drinking water, food handling, personal hygiene and sewage disposal.

Because of the magnitude of the problem, much effort has been expended in the area of typhoid control. Over the years many attempts have been made at providing such a vaccine with varied success, through 2 main different route, oral and parenteral. Reports from 1,896 indicates two different attempts for development of typhoid vaccine, by Sir Wright[12] and Pfeiffer & Kalle[13], with heat inactivated organisms. Th s type of vaccine was in use for over a half of a century, without any accurate documentation of efficacy[14].

Controlled trials for parenteral vaccine were started in 1960. The results from 4 trials from Yugoslavia, Guyana, Poland and USSR showed efficacy of 51-88%[15-20]. These vaccines, phenol or acetone and heat inactivated are still in use in many areas of the world. But because of the frequency of side effects of this vaccine many countries discuorage the acceptance of this vaccine in routine immunization as well as a national control programme. The development of oral typhoid vaccine was started in 1904 by James Carroll and Vedder[21]. From 1925 to 1929, series of oral typhoid vaccine studies were conducted in South Africa By Cluver, Lewin and Besredka[21-23]. Freshly haversted vaccine was highly protective. However, if lyophilized, which is required if the vaccine to be used in field study as for commercial use, marked reduction of protective efficacy was observed[24,25]. In 1970 Hornick described two oral typhoid vaccines, Typhoral^{R} from USA with heat and acetone inactivation and Taboral^{R} from Switzerland, a monovalent vaccine contain acetone killed bacilli. Both vaccines were less efficacious than parenteral vaccines[21,26].

In 1975 Germanier and Furer introduced Ty 21a strain, which lacks UDP Galactose 4 epimerase[27]. This vaccine was initially tried with adult volunteers in USA with 87% of efficacy[28,29]. From field trial with school children in Egypt, 96% efficacy was observed[30]. During a subsequent trials in Chile, also with school children, it gave an efficacy of 47-79%, with average about 67%[30]. However, during these 2 last studies, the incidence of typhoid was relatively low compared to other endemic areas in developing countries. More over the strain of Ty21a that was evaluated in the vaccine trial in Chile was different than that was evaluated in Egypt, because the strain that was evaluated in Egypt no longer available.

It was considered to conduct a third field trial of a double blind placebo controlled in Plaju and (Sungai Gerong) of South Sumatera, Indonesia. Two kinds of vaccine preparation was evaluated: a liquid formulation, similar formulation to that was evaluated in Egypt and the enteric coated capsule, the same formulation to that was evaluated in Chile.

MATERIALS AND METHODS

The study population.

With these results in mind, a double blind randomized and placebo controlle study was proposed for an area with high typhoid incidence. After series of surveillance program at different areas in Indonesia including at Paseh[9], West Java and Bali, Pertamina Oil Company complex in Plaju, South Sumatera was chosen as vaccination area, due to higher incidence, excellent medical facility and ease in population follow up. All Pertamina employee and their family members, totalling appeoximately 25,000 people, were consused. Only people with ages 3 to 44 years were considered as candidates for the vaccine trial since they belong to the age group with the highest risk of typhoid fever.

Other criteria for trial participation wqere that, candidates should be non-pregnant and afebrile at the time of vaccination. The study population was the healthy (without fever), nonpregnant, aged 3-44 years of the employee of Pertamina Oil company and their families at Plaju and Sungai Gerong, Palembang, South Sumatera. The advantage of this groups is that it is a close community where the best available health care in the area is provided free of charge to the study population by the company medical service system.

Vaccinees were individually pre-randomized into 4 matches groups A,D,C and E, based on age, sex, educational level of the employee, history of previous vaccination with parenteral classical typhoid vaccine in 1979, and location of residence of vaccinee. Group A and D received either vaccine or placebo capsule and, group C and E received either vaccine or placebo sacchett (liquid formulation). The vaccine code was broken after 2 years surveillance. ie. code A was capsule vaccine, D capsule placebo, C sachett/liquid placebo and E sacchett/liquid vaccine.

Vaccine and placebo.

The vaccine was prepared in 2 formulation: enteric coated capsule and sacchett formulation each contain 1-5x10^9 viable Ty21a bacteria. The same manner was prepared for placebo with killed *Lactobacillus acidophylus*. The vaccine and placebo were prepared by Swiss Serum Vaccine Institute. Both vaccine and placebo were indistinguishable in lyophilized as well as in reconstituted forms.

At the time of vaccination, 1 sacchett of buffer phosphate was diluted with 100 ml of non-chlorinated drinking water ("aqua") as a buffered diluent of"liquid" formulation of vaccine or placebo. For the adults and children more than 6 years of age, 1 sacchett of vaccine or placebo was diluted with 100 ml buffered water prepared above. For children 3-5 years of age, 1 sacchett of vaccine or placebo was diluted with 50 ml of the same buffered water.

Vaccine doses.

Each vaccinee received 3 doses of vaccine or placebo at 1 week

intervals. Vaccinee who received only 1 or 2 doses of vaccine for any reason, was excluded from the analysis.

Vaccination procedure.

Cold chain of the vaccine and placebo was kept at 4-8° C. The vaccinee swallowed the vaccine and placebo with a non-chlorinated drinking water. Both were given in an empty stomach and the vaccinee was kept at the place of vaccination and asked not to eat any food at least 1/2 hour after vaccination.

A failure was defined as inability to sallow the capsule, failure to drink at least a half of the liquid dose's or vomiting within 20 minutes of vaccine administration. If failure occurred on the first dose of vaccine only, the vaccinee was randomly re-assignated t. an alternate vaccine formulation group, before the vaccinee was considered to be failed.

Sub-sample for Side effects.

A total of 1190 sub-sample was selected for side effects on the basis of volunteer of the vaccinee in all age groups.

Surveillance.

Collection of blood for bacterilogical culture was started immediately after the vaccination from every fever cases presented as in or out-patients at health facility of Pertamina in Plaju and Sungai Gerong. Fever cases was define as every fever of 3 days duration or more; or if less antibiotic will be given for any reason.

For analysis of the efficacy, only blood culture positive for *S.typhi* as well as *S.paratyphi* A which collected 3 weeks after the last dose of vaccine or placebo of vaccinated groups were calculated.

Blood culture procedure.

Ten ml of venous blood was collected from every fever cases of 5 years of age or more and 5 ml from cases of less than 5 years of age and directly mixed with 90 ml of 10 % of ox gall solution (Day 0).

Subculture to Mac Conkey and DCLS plate was carried out on Day 1. Subculture was repeated up to Day 2, 3, 4, 5, 10 and 14 if the previous subculture yield negative result for *S.typhi*.

Calculation of vaccine efficacy.

Vaccine efficacy was expressed with the formula:

$$\text{Vaccine Efficacy} : \frac{Ip - Iv}{Ip} \times 100\ \%$$

Ip = Annual Incidence of Placebo Groups
Iv = Annual Incidence of vaccinated Groups (capsule or liquid)

The difference of the efficacy of vaccine and placebo was analyzed by using X2 test with Yates correction of SPSS+program.

RESULTS.

Side-effects.

Side-effects were assessed in 1190 subsamples of 311 receiving capsule vaccine, or placebo, and liquid vaccine or placebo (table 1). No serious side-effects were observed. The only side-effects observed was the cases of vomitting in capsule vaccine recipient, the vaccine group(5.8 %) is statistically significant higher($p<0.02$) than the placebo group(1.7 %).

Attack rate of typhoid fever.

Totally 6,347 blood culture were collected during 30 months follow-up (October 86 - March 89). The annual incidence in placebo groups of the population was 810 cases per 100.000 population (table 2). The peak of the incidence was in the 3-19 age groups(78 %).

Vaccine efficacy.

In all age groups the enteric coated capsule gave 42.2 % protection ($p=0.0001$) and the liquid formulation gave 53.2 % protection ($p<0.0001$) as shown in table 3. There is no statistical significant difference comparing the efficacy of the enteric coated capsule to liquid formulation ($p= 0.3127$). Protection is higher in older age groups (15-44 years) than in younger age groups (3-14 years). There is no statistical significant different protection of both vaccine comparing sex of the cases.

Vaccine efficacy was calculated for 12 months, 24 months and 30 months (table 4). Surprisingly, the efficacy of both capsule and liquid formulation is low in the first 12 month follow-up and increase in 24 and 30 months surveillance.

When grouped the study population by the educational and of the employee, it was found that capsule formulation was statistically significant superior to placebo only in the group where educational level had 10 or more year schooling, however, the liquid formulation was superior to nearly all groups (table 5)

In 1979, there was a parenteral typhoid vaccination program, with a classical whole cell vaccine, for the employees of Pertamina Oil Company and their families. No difference in efficacy based on the previous vaccination (table 6).

When grouped the study population by the location of residence, ie. in side the compound and out side the compound, liquid formulation provide higher protection than enteric coated capsule. However,the difference is not statistically significant ($p= 0.2393$)(table7).

S.paratyphi A

Forty eight strains of *S. paratyphi* A has been isolated

during 30 months of surveillance. The annual incidence is 187 cases per 100.000 population. No protection of Ty21a vaccine against *S. paratyphi* A was observed.

DISCUSSION

Classical whole cell typhoid vaccine is efficacious but causes notable adverse reactions in about 25 % of the recipients and must be administered parenterally[15-20]. So, the great advantage of Ty21a oral typhoid vaccine over classical parenteral whole cell vaccine is that it causes no serious side-effects[30,31].

A preliminary field trial carried out in Alexandria, Egypt in school children proved that 3 doses of Ty21a vaccine can provide outstanding(96 % protection) efficacy for at least 3 years[30]. However, the vaccine formulation that was evaluated in this field trial was no longer available and was not practical for mass vaccinations. More over, the annual incidence of typhoid fever in the placebo group in Alexandria was 44-50 cases per 100.000 population, was far below rates encountered in most typhoid-endemic areas, like Indonesia.

The field trial carried out in Santiago, Chile with the annual incidence of typhoid fever in the placebo group was 103-142 cases per 100.000 population showed that 3 doses of Ty21a vaccine provide only 67 % protection on the duration of at least 3 year[31].

The field trial in Plaju, Indonesia with the same doses of vaccine yield less protection (capsule provided 42.2 % protection and liquid formulation 53.2 % protection) than Chile trial. Besides the obvious differences in vaccine formulation, interval of vaccine inoculation to the vaccinee and genetic constitution of the vaccinated population, other factor may have contributed to the difference in the vaccine efficacy. The annual incidence in the placebo group in Plaju trial ($810/10^5$/pop./yr) was about 7 times higher than mean annual incidence in Chile trial ($103/10^5$/pop./yr). That means, the mode of transmissions that affect the force of infections is different in that two sites.

A new parenteral vaccine, Vi-Capsular Polysaccharide (Vi-CPS) has been evaluated in South Africa (81.0 % efficacy) and in Nepal (72 % efficacy) where the annual incidence of typhoid fever is more or less the same as at Plaju, Indonesia[32,33].

Since the mechanism of the immunity of Ty21a vaccine which stimulates cell-mediated as well as humoral immunity is different than immune mechanisms of Vi-CPS vaccine, the combination of these two vaccines might produce additional effect, if not a potentiation effect.

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Table 1. Percentage of Side-effects of Ty21a oral vaccine by symptoms.

Symptoms	Capsule		Liquid	
	Vaccine (n=311)	Placebo (n=291)	Vaccine (n=333)	Placebo (n=255)
Vomitting	5.8	1.7*	7.2	3.9
Nausea	1.0	1.7	1.5	0.8
Diarrhoea	3.9	3.1	3.8	5.5
Fever	4.8	1.7	4.8	3.5
Headache	4.8	3.4	4.8	3.9
Urtiaria/Rash	1.0	0.3	1.2	0.4

* $(p)<0.02$ by X^2 square

Table 2. Incidence of typhoid and paratyphoid fever in the placebo group.

Age group (years)	Population at risk	Typhoid		Paratyphi A	
		Cases (30 months)	Incidence 10^{-5}	Cases (30 months)	Incidence 10^{-5}
3 - 6	1,592	52	1,307	7	176
7 - 9	1,420	48	1,352	8	225
10 - 14	2,156	62	1,150	18	334
15 - 19	1,135	28	987	8	282
20 - 29	1,218	8	263	2	66
30 - 44	2,747	10	146	5	73
All ages	10,268	208	810	48	187

Table 3. Efficacy of Ty21a vaccine against *S.typhi* by age group.

Age group	Population at risk	Cases	Incidence (10^{-5})/yr	Efficacy (%)
All ages				
Placebo (a)	10,268	208	810	-
Capsule (b)	5,209	61	468	42.2
Liquid (c)	5,066	48	379	53.2
3-14 years				
Placebo (d)	5,168	162	1,254	-
Capsule (e)	2,596	51	786	37.3
Liquid (f)	2,591	40	618	50.7
15-44 years				
Placebo (g)	5,100	46	361	-
Capsule (h)	2,613	10	153	57.6
Liquid (i)	2,475	8	129	64.3

(p) Value

(a) vs (b) = 0.0002 (d) vs (e) = 0.0054 (g) vs (h) = 0.0164
(a) vs (c) < 0.0001 (d) vs (f) = 0.0001 (g) vs (i) = 0.0078
(b) vs (c) = NS (e) vs (f) = NS (h) vs (i) = NS
NS-Not significant.

Table 4. Duration of the efficacy of capsule and liquid formulation of Ty21a attenuated oral vaccine give 3 doses with 1 week interval between doses.

P e r i o d s	Placebo	Capsule	Liquid
12 months (Oct.86-Sep.87)			
C a s e s	83	30	24
Annual Incidence/10^{-5}	808	576	474
E f f i c a c y	-	28.7	41.3
p value	-	0.1323	0.0253
24 months (Oct.86-Sep.88)			
C a s e s	184	55	41
Annual Incidence/10^{-5}	896	528	405
E f f i c a c y		41.1	54.5
p value		0.0006	<0.0001
30 months (Oct.86-Mar.89			
C a s e s	208	61	48
Annual Incidence/10^{-5}	810	468	379
E f f i c a c y	-	42.2	53.2
p value	-	0.0002	<0.0001

Table 5. Efficacy of Ty21a vaccine against *S.typhi* by educational level of the employee.*

Education	Total Population	Positive	Attack Rate(10^{-5})	Efficacy (%)
1-6 years				
Placebo (a)	2,907	63	867	-
Capsule (b)	1,530	20	523	39.7
Liquid (c)	1,495	17	455	47.5
7-9 years				
Placebo (d)	2,502	55	879	-
Capsule (e)	1,176	16	544	38.1
Liquid (f)	1,206	11	365	58.5
10-12 years				
Placebo (g)	3,444	69	801	-
Capsule (h)	1,738	15	345	56.9
Liquid (i)	1,648	17	413	48.4
Academics				
Placebo (j)	1,415	20	565	-
Capsule (k)	765	8	418	26.0
Liquid (l)	717	2	112	80.2

*Employee is usually the head of household.

(p) Value

(a) vs. (b) = 0.0583
(a) vs. (c) = 0.0212
(b) vs. (c) = 0.7948

(d) vs. (e) = 0.1110
(d) vs. (f) = 0.0082
(e) vs. (f) = 0.4009

(g) vs. (h) = 0.0031
(g) vs. (i) = 0.0163
(h) vs. (i) = 0.7423

(j) vs. (k) = 0.9550
(j) vs. (l) = 0.0612
(k) vs. (l) = 0.1377

Table 6. Efficacy of Ty21a vaccine against *S.typhi* by history of parenteral typhoid vaccination in 1979.

Parenteral Vaccination 1979	Total Population	Positive	Attack Rate(10^{-5})	Efficacy (%)
Yes				
Placebo (a)	2,441	46	754	-
Capsule (b)	1,278	10	313	58.5
Liquid (c)	1,210	12	397	47.3
No				
Placebo (d)	6,664	140	840	-
Capsule (e)	3,348	38	454	46.0
Liquid (f)	3,286	32	390	53.6
Not known				
Placebo (g)	1,163	22	757	-
Capsule (h)	583	13	892	0.0
Liquid (i)	570	4	281	62.9

(p) Value

(a) vs. (b) = 0.0132 (d) vs. (e) = 0.0007 (g) vs. (h) = 0.7684
(a) vs. (c) = 0.0587 (d) vs. (f) = 0.0001 (g) vs. (i) = 0.0884
(b) vs. (c) = 0.7316 (e) vs. (f) = 0.6015 (h) vs. (i) = 0.0564

Table 7. Efficacy of Ty21a vaccine against *S. typhi* by location of residence.

Residence	Total Population	Positive	Attack Rate(10^{-5})	Efficacy (%)
Inside the compound				
Placebo (a)	4,546	105	924	-
Capsule (b)	2,310	32	554	40.0
Liquid (c)	2,286	28	490	47.0
Outside the compound				
Placebo (d)	4,899	95	776	-
Capsule (e)	2,476	25	404	47.9
Liquid (f)	2,411	19	315	59.4
Other*				
Placebo (g)	823	8	389	-
Capsule (h)	423	4	378	2.8
Liquid (i)	369	1	108	72.2

* Distributed throughout the city.

(p) Value

(a) vs. (b) = 0.0126	(d) vs.(e) = 0.0039	(g) vs.(h) > 0.9999
(a) vs. (c) = 0.0030	(d) vs.(f) = 0.0003	(g) vs.(i) = 0.3520
(b) vs. (c) = 0.7270	(e) vs.(f) = 0.5037	(h) vs.(i) = 0.4556

Brief Statement of the Activities of the

Virus Research Institute, National Institute of Health

Department of Medical Sciences, Ministry of Public Health

Nonthaburi 11000, Thailand. Tel.5899850-8

1989

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The Virus Research Institute, NIH, Department of Medical Sciences, Ministry of Public Health, Thailand was established in 1963.

The responsibilities of this Institute are basic and applied research in virology, develop simple diagnostic tests and kits, pilot vaccine development and related fields; investigation of clinical specimens to provide information needed by the physicians for diagnosis, prophylaxis and treatment; virological surveys which may assist the epidemiologist in evaluating pertinent situations or in planing preventive measures; acting as reference centre and quality control for laboratories; serves as a WHO National Influenza Centre, a WHO National Institution for Viral Hepatitis and WHO Collaborating Centre of Rabies Virus.

The Virus Research Institute has 9 main sections namely; Enteroviruses, Arboviruses, Respiratory Viruses, Viral Diseases of Central nervous and Circulatory Systems, Immunology, Viral Hepatitis, Ultra Structure, Preparation of apparatus and Animal Centre and Administrative sections.

The staff is composed of 1 medical doctor, 22 scientists (4 temporary scientists), 19 technologists, 1 general administrative officer, 4 clerks, 2 typists, 4 drivers and 14 workers (10 temporary workers).

With the existing facilities, the institute is able to do the following laboratories activities:-

1) Service activities

- Laboratory viral diagnosis.
- Development of viral reagents and diagnostic kits.
- Tissue culture work: More than 10 different cell lines, such as Hep 2, LLC-MK_2, KB, Fl, Hela, MA 104, MDCK, $C_{6/36}$ (Aedes albopictus cell), BHK (clone 15,21), Vero, RK_{13}, $SP_{2/0}$ (Myeloma cell), MT_4, MOLT4 (T.lymphocyte cell) are maintained and used.
- Isolation of viruses in tissue culture, suckling mice, embryonated eggs and mosquitoes.
- Neutralization test in tissue culture and animals for identification of virus isolates and quantitation of antibodies.
- Detection of viral antigen by FAT, ELISA, IEM and IAHA.
- Detection of viral antigen by FAT, NT, ELISA-IgG, ELISA-IgM, ELISA-IgM Capture, RPHA, PHA,PA, WB, HI and SPIHad.
- ds RNA electropherotyping and immunodiffusion test.
- Electronmicroscopy : Negative staining, shadowing casting thin section, scanning electron-microscopy, CPD and ion sputter techniques.

2) Research activities

- Research on viral diseases.
- Research on developing simple diagnostic tests and kits.
- Pilot production of antigens, antisera, monoclonal antibodies, RPHA Reagent Kit, Rubella Test Kit and Dengue Test Kits.
- RNA oligonucleotide finger printing for molecular study of virus isolates.
- Neutralizing antibody response to rabies virus.

3) Training on viral diagnosis and quality control.

1) Diagnostic examinations

Virus Diseases	1986	1987	1988
Acute Hemorrhagic conjunctivitis	132	78	-
Adenovirus infections	58	42	42
AIDS	-	-	853
Arbovirus isolations	-	-	-
Cytomegalovirus	40	39	62
Haemorrhagic fever	3264	12419	1761
Hepatitis A	102	72	71
Hepatitis B	288	252	1498
Herpes Simplex type 1,2	218	114	109
Infectious mononucleosis	14	5	13
Influenza	82	72	192
Japanese encephalitis	491	324	405
Measles	47	38	126
Mumps	21	20	60

Virus Diseases	1986	1987	1988
Mycoplasma pneumoniae	6	6	-
Other enterovirus infections	217	167	131
Parainfluenza type 1,3	116	116	-
Poliomyelitis	184	144	29
Rabies	484	63	28
Respiratory syncytial virus	58	15	9
Rubella	1949	428	217
Varicella zoster	6	6	23
Viral diarrhoea	133	147	226
Total	7910	14567	5855

2) Production of vaccine and reagent kits

1. Production of Rubella vaccine.
2. Production of RPHA Reagent Kits.
3. Production of Rubella Test Kits.
4. Production of Dengue Test Kits.

3) Research project on the way

1. Field trial of JE vaccine developed in Thailand. 1987/89
2. Production of monoclonal antibody to dengue virus. 1987/89
3. Preparation of rabbit hyper immune sera of rabies virus for antibody detection. 1988/89
4. Molecular epidemiology of Japanese encephalitis in Thailand, as determine by oligonucleotide fingerprinting analysis. 1988/89
5. Severe acute respiratory tract infection in children, age under 5 years, etiology and clinical study. 1988/89

6. Herb extracts in the treatment of genital Herpes Simplex Virus (HSV) infection. 1988/89
7. Scanning electron microscopic study on the mosquito injected with JE viruses. 1986/89
8. Production of PHA reagent for HBs antibody detection. 1988/89
9. Study strain differences of JE virus isolated in Thailand using oligonucleotide fingerprint technique. 1988/89
10. Electron microscopic observation of HSV in cell culture. 1988/89
11. Pilot production of rubella vaccine. 1988/90
12. Clinical trial of plasma-derived Hepatitis B vaccine. 1986/89
13. Quality control and evaluation of using Dengue type 1 tissue culture antigen.
14. JE surveillance in Thailand.
15. Seroepidemiological study of DHF in Thailand.
16. Dengue surveillance in Mahasarakarm.

Recent Publications

1988

1. The diagnosis of dengue with a test kit developed at the Virus Research Institute, Thailand. Mosquito-Borne Dis Bull. 1988, 5(1-2) : 9-14

1987

1. The detection of HBV-DNA by molecular hybridization. Bull. Dept. Med. Sci. 1987, 2 : 205-210.
2. Scanning electron microscopic study of various stages of Aedes aegypti. J. of Electron microscopy of Thailand. 1987, 1 : 32-47.

3. The Use of single or pooled antigen to differentiate dengue virus antibodies. Bull. Dept. Med. Sci. 1987, 29(3) 289-292.

4. Laboratory study on surveillance of J.E. in 1984. Bull. Dept. Med. Sci. 1987, 2 : 141-155.

5. Comparison between IgM antibody capture enzyme linked immuno sorbent assay (MAC ELISA test) and Haemagglutination Inhibition test (HI test) for serodiagnosis of Japanese Encephalitis. Bull. Dept. Med. Sci. 1987, 3 : 271-277.

1986

1. Application of formalinized goose red blood cells to Arbovirus Hemagglutination (HA) and Hemagglutination-Inhibition (HI) test. Bull. Dept. Med. Sci. 1986, 1 : 1-10.

2. Detection of hepatitis B antigen by Reversed Passive Hemagglutination (RPHA) and Enzyme-Linked Immunosorbent Assay (ELISA). Bull. Dept. Med. Sci. 1986, 1 : 11-17.

3. Production of Plasma-derived HB Vaccine. Publication of National Research Council. 1986, 1-55.

4. Hepatitis B Vaccine. Bull. Dept. Med. Sci. 1986, 1 : 103-105.

5. Antibody response in Japanese encephalitis and dengue hemorrhagic fever patients measured by indirect ELISA. Trop. Med. 1986, 2 : 101-114.

6. Japanese encephalitis antibody survey in dogs at Kanchanaburi Province. Bull. Dept. Med. Sci. 1986, 2 : 149-153.

7. Epidemiological study of dengue hemorrhagic fever in Thailand by serodiagnosis (1977-1985). Bull. Dept. Med. Sci. 1986, 4 : 448-458.

添付資料 2.　公開技術セミナー英文配布資料（タイ編）

※日本側講師の講義サマリーはインドネシア編と同内容につき省略

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE)

SEMINAR ON LATEST MICROBIAL DISEASES STUDY

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE)

SEMINAR ON

LATEST MICROBIAL DISEASES STUDY

DATE : August 9, 1989

PLACE : National Institute of Health

PROGRAM:

08:30 -	Registration	
08:45 - 08:50	Opening Remarks	Mr. Tsutomu Saito Resident Representative of Japan International Cooperation Agency
08:50 - 08:55	Address	Mrs. Preeya Kashemsant Director General, Department of Medical Sciences
09:30 - 11:00	Seminar I	"Recent Advances in Viral Vaccines" Prof. M. Takahashi
	Questions and answers	
11:00 - 11:15	Tea break	
11:15 - 12:15	Lecture	"Recent Advances in Bacteriological Studies in Thailand" Mrs. Surang Dejsirilert NIH
		"Recent Advances in Virological Studies in Thailand" Dr. Chuinrudee Chaivasu Director, Virus Research Institute, DMS

12:15 - 13:15	Lunch	
13:15 - 14:45	Seminar II	"Measles and Its Prevention" Prof. S. Ueda
	Questions and answers	
14:45 - 15:00	Tea break	
15:00 - 16:30	Seminar III	"Recent Advances in the Studies on the Structure and Function of Bacterial Protein Toxins (esp. Tetanus Neurotoxin) in Relation to the Improvement of Tetanus, Diphtheria and Pertusis Vaccines" Prof. M. Matsuda
	Questions and answers	

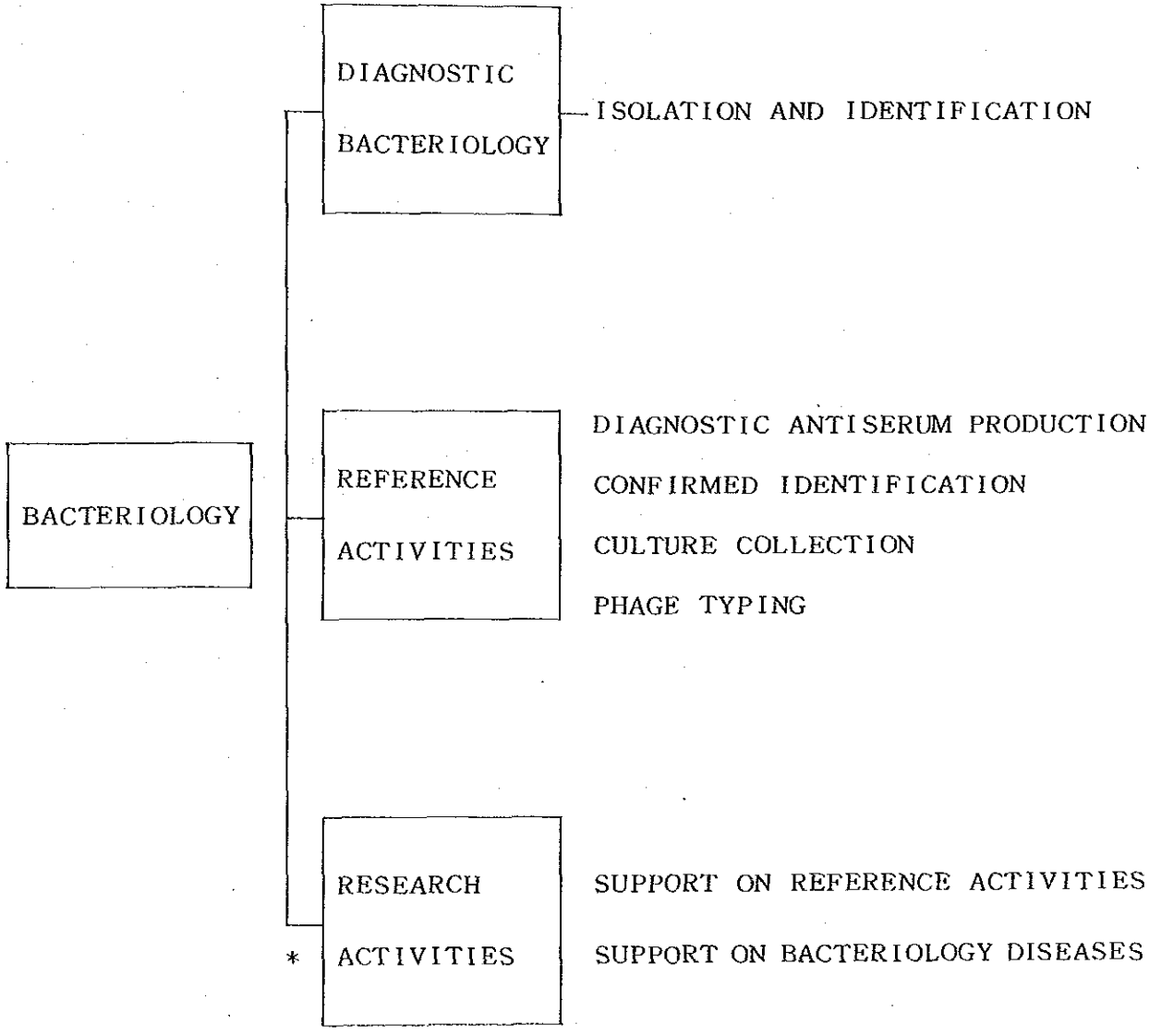
An informal gathering with the former participants in the evening

18:30 - Reception at Central Plaza Hotel

BACTERIOLOGICAL STUDIES

IN

NIH, THAILAND


BACTERIOLOGY
DIAGNOSTIC BACTERIOLOGY
ISOLATION AND IDENTIFICATION
REFERENCE ACTIVITIES
DIAGNOSTIC ANTISERUM PRODUCTION
CONFIRMED IDENTIFICATION
CULTURE COLLECTION
PHAGE TYPING
RESEARCH ACTIVITIES
*
SUPPORT ON REFERENCE ACTIVITIES
SUPPORT ON BACTERIOLOGY DISEASES

RECENT ADVANCES IN BACTERIOLOGYCAL STUDIES

NIH, THAILAND

	PERSONNEL		
	M. Sc	B. Sc	MLT
DIAGNOSTIC BACTERIOLOGY			
ENTERIC BACTERIOLOGY			1
MISCELLANEOUS BACTERIOLOGY			1
REFERENCE AND RESEARCH ACTIVITES			
ENTERIC BACTERIOLOGY		7	2
MISCELLANEOUS BACTERIOLOGY	1	2	3

REFERENCE ACTIVITIES CONCERNING IDENTIFICATION OF GLUCOSE NONFERMENTATIVE GRAM-NEGATIVE ROD BACTERIA

STEP 1 CONVENTIONAL BIOCHEMICAL TUBE TEST

STEP 2 CELLULAR FATTY ACID ANALYSIS USING GLC

STEP 3 DNA-DNA HYBRIDZATION

GUANINE : CYTOCINE COMPOSITION USING HPLC

MINIATURE TEST KIT FOR IDENTIFICATION OF GLUCOSE-NONFERMENTATIVE GRAM-NEGATIVE ROD BACTERIA

Leelawadee Saengsuk

Tuanchai Watana

Vichuda Kosulanant

* Katsuhiko Sawatari

Surang Dejsirilert

Division of Clinical Pathology

National Institute of Health

Department of Medical Sciences

* Clinical Laboratory of SASEBO Municipal Hospital

Total Correlation per test between Microtiter plate method and Conventional

Tests	Correlation in % microtiter plate method/conventional
DNase	95
acetamide	70
6.5 % Nacl	94
glucose	92
fructose	97
maltose	95
galactose	93
xylose	93
mannitol	93
sucrose	95
lactose	92
mannose	90
rhamnose	97
esculin	85
acetate	94
urea	73
citrate	91
ONPG	84
PPA	96
Starch	91
indole	100
nitrate	92

Bull JFCC
Vol. 5, 10, 1989

APPLICATION OF CELLULAR FATTY ACID PROFILES AS DETERMINED BY GAS-LIQUID CHROMATOGRAPHY TO THE IDENTIFICATION OF GLUCOSE-NONFERMENTATIVE GRAM-NEGATIVE ROD BACTERIA

Surang Dejsirilert,[1] Eiko Kondo,[2] and Vichuda Kosalanant[1]

1. Division of Clinical Pathology, National Institute of Health, Department of Medical Sciences, Nonthat 11000, Thailand
2. Department of Cellular Immunology, National Institute of Health, 2-10-35 Kamiosaki, Shinagawa-1 Tokyo 141, Japan

日本微生物株保存連盟会誌

第5巻 第1号 別冊

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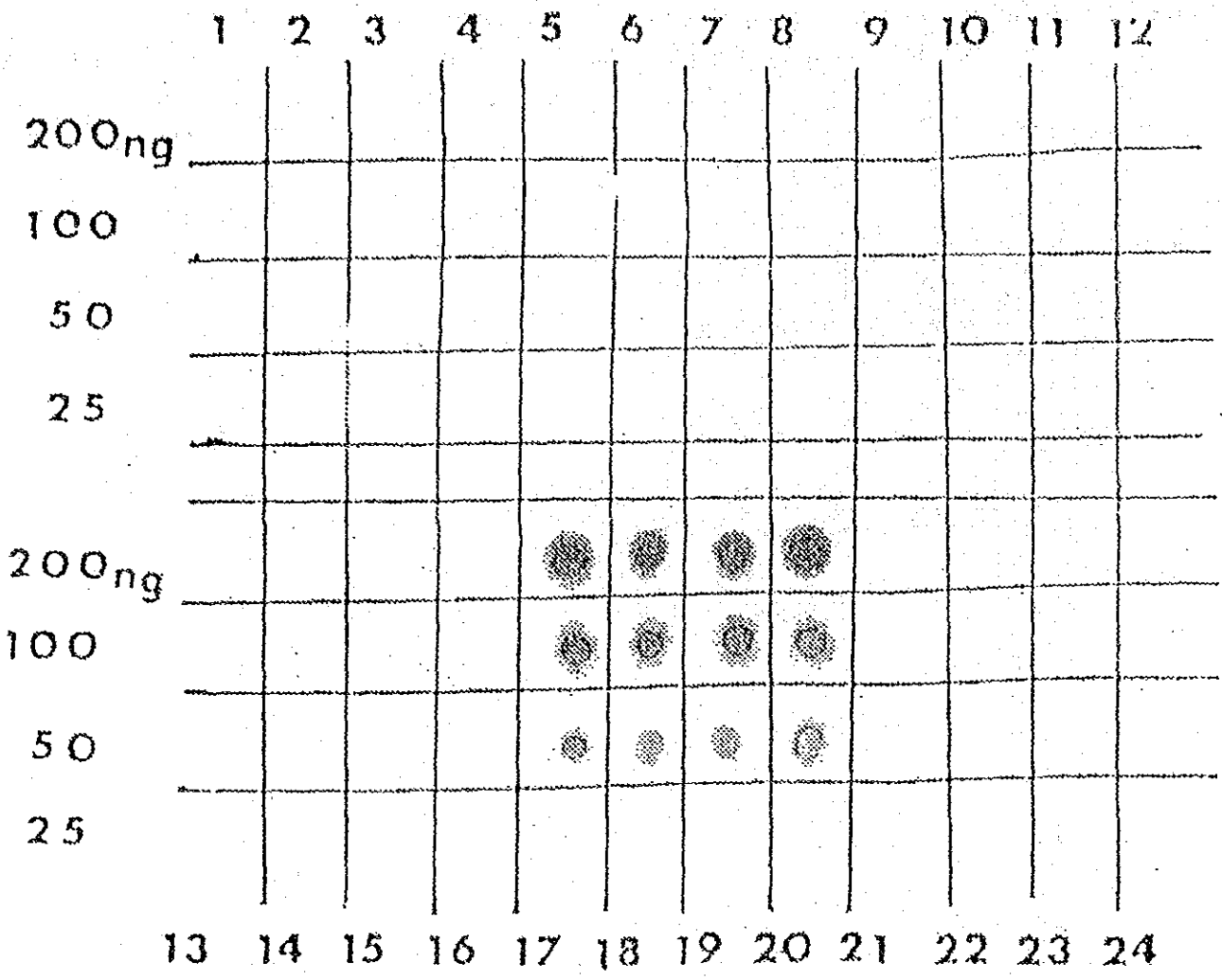
for Culture Collections
Vol. 5, No. 1 (1989)

Table 4. Aerobic gram-negative nonfermenters sent to Division of Clinical Pathology, Department of Medical Sciences, NIH, Thailand for their identification during 1980-1988.

Organism	Number of strains identified
GLC group A	
Pseudomonas aeruginosa	313
Pseudomonas putida	196
Pseudomonas fluorescens	33
Pseudomonas sp. group Ve-2	22
GLC group B	
Pseudomonas pseudomallei	130
Pseudomonas cepacia	447
GLC group C	
Pseudomonas stuzeri	6
Pseudomonas pseudoalcaligenes	68
Pseudomonas mendocina	13
GLC group D	
Pseudomonas diminuta	6
GLC group E	
Pseudomonas maltophilia	89
GLC group G	
Pseudomonas alcaligenes	23
Alcaligenes denitrificans	19
GLC group H	
Achromobacter xylosoxidans	217
Moraxella osloensis	8
GLC group I	
Acinetobacter spp.	293
GLC group J	
Flavobacterium meningosepticum	38
GLC group not determined	
Pseudomonas vesicularis	12
Pseudomonas paucimobilis	26
Pseudomonas acidovorans	24
Pseudomonas pickettii	12
Pseudomonas putrefaciens	4
Moraxella phenylpyruvica	12
Moraxella nonliquefaciens	3
Moraxella urethralis	6
Moraxella lacunata	2
Moraxella atlantae	3
Moraxella spp.	37
Unclassified Nonfermenters	8
Total	2,123 strains



DNA-DNA dot hybridization between *L. pneumophila* and other *Legionella*.

REFFRENCE ACTIVITIES CONCERNING IDENTIFICATION OF DIARHOEGENIC ESCHERICHIA COLI

1. NATIONWIDE SURVEILLANCE
2. DEVELOPMENT OF RPLA TEST KIT
3. ESTABLISHMENT OF DNA HYBRIDIZATION
4. PRODUCTION OF DIAGNOSTIC ANTISERUM

DNA Hybridization Techniques in Nationwide Suveillance of Enteropathogenic, Enterotoxigenic, Enteroinvasive and Enterohemorrhagic Escherichia coli isolated from Children with Diarrhea in Thailand

Renu Sunthadvanich [1]

Dumrong Chiewsilp [1]

J. Edward Brown [2]

Riichi Sakazaki [3]

Peter Echeverria [2]

1. Department of Medical Sciences, Ministry of Public Health, Thailand.
2. Armed Forces Research institute of Medical Sciences, Bangkok, Thailand.
3. National Institute of Health, Tokyo, Japan.

Serogroups	Isolates	ETEC			EAFEC	EIEC
		LT	ST	LTST		
*025	60	–	–	–	–	–
0128	31	3	–	13	–	–
0114	25	3	–	–	7	–
*078	21	–	2	–	–	–
0119	10	–	–	–	5	–
020a,b	7	–	1	–	–	–
*0112a,c	3	–	–	–	–	–
086	2	–	–	–	–	–
*0124	2	–	–	–	–	–
028	1	–	–	–	–	–
non-agglutinated	231	–	–	2	2	3
Total E.coli	393	6	3	15	14	3

ESTABLISHMENT OF DNA-DNA HYBRIDIZATION TECHNIQUE FOR DIAGNOSIS OF ENTEROTOXIGENIC *ESCHERICHIA COLI* AND ENTEROINVASIVE *E. COLI*

Orn-anong Ratchtrachenchai[1]

Wantana Paveenkittiporn[1]

Tatsuo Yamamoto[2]

Peter Echeverria[3]

1. Division of Clinical Pathology, National Institute of Health, Department of Medical Sciences, Nonthaburi, Thailand
2. Department of Bacteriology, Juntendo University Tokyo, Japan
3. Armed Forces Research Institute of Medical Sciences, Bankgok, Thailand

Development of Reversed Passive Latex Agglutination (RPLA) for Detection of Toxigenic Vibrio Cholerae

Krongkaew Supawat[1], Tamotsu Omori-Satoh[2], Dumrong Chiewilp[1]

1. Division ef Clinical Pathology,
   National Institute of Health,
   Department of Medical Sciences,
   Nonthaburi 11000, Thaland
2. Department of Applied Immunology,
   National Institute of Health,
   Tokyo, Japan

Abstract : A simple, sensitive and specific technique for detection of cholera toxin (CT) of Vibrio cholerae 01 and non 01 was developed by using the reversed passive latex agglutination method (RPLA). The technique is based on the agglutination of anti-toxin (antibody)-coated innert particles such as latex particles with toxin (antigen). The investigation consisted of two parts, purification of CT-specific immunoglobuiin (IgG) and sensitization of latex with the purified IgG. The method developed has been shown to be sensitive as a low as 0.5-1 ng/ml. of purified CT can be estimated.

PRODUCTION OF DIAGNOSTIC DIARRHOEGENIC *ESCHERICHIA COLI* ANTISERA

Suwat Bangtrakulnond

Division of Clinical Pathology

National Institute of Health

Department of Medical Sciences

RESEARCH STUDIES ON MELIOIDOSIS

(Pseudomonas pseudomallei)

RESTRICTED IN SOUTHEAST ASIA/NORTHERN AUSTRALIA

HIGH FATAL RATE

AVERAGE MORTALITY RATE 61.53 %

SEPTICEMIA MORTALITY RATE 83.93 %

POLYMORPHIC DISEASE

involved every organ

PATIENT :

64 % UNDERLYING DISEASE

36 % NORMAL HOST

INCIDENCE

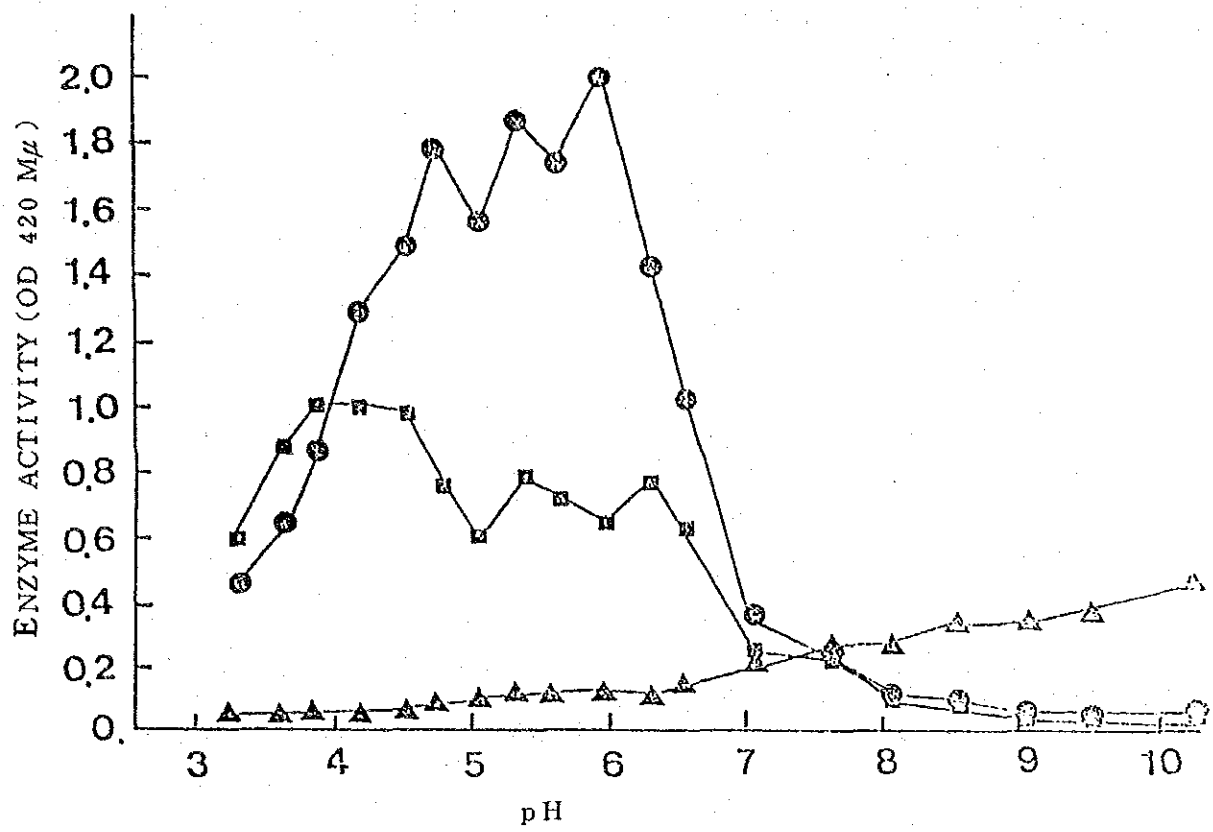
100 PATIENT/YEAR

ROUTE OF INFECTION

inhalation

oral route

skin



P. PSEUDOMALLEI (472/30)

P. CEPACIA (JCM5510)

P. AERUGINOSA (JCM5516)

PATHOGENESIS

1) SURFACE NATURE OF P. pseudomallei

- Phosphatase acitivity
- Fatty acid Bactericidal
- Outer membrance protein profile

2) VIRULENCE PLASMID FACTOR

3) LD 50 DETERMINATION

4) TOXIN PRODUCTION - strain
- optimal condition

5) SERUM BACTERICIDAL TEST

SERODIAGNOSIS

EPIDEMIOLOGY

HIGH ACID PHOSPHATASE ACTIVITY OF *Pseudomonas pseudomallei* AS A POSSIBLE ATTRIBUTE RELATING TO ITS PATHOGENICITY

Surang DEJSIRILERT, Raywadee BUTRAPORN, Dumrong CHIEWSILP, Eiko KONDO, and Koomi KANAI

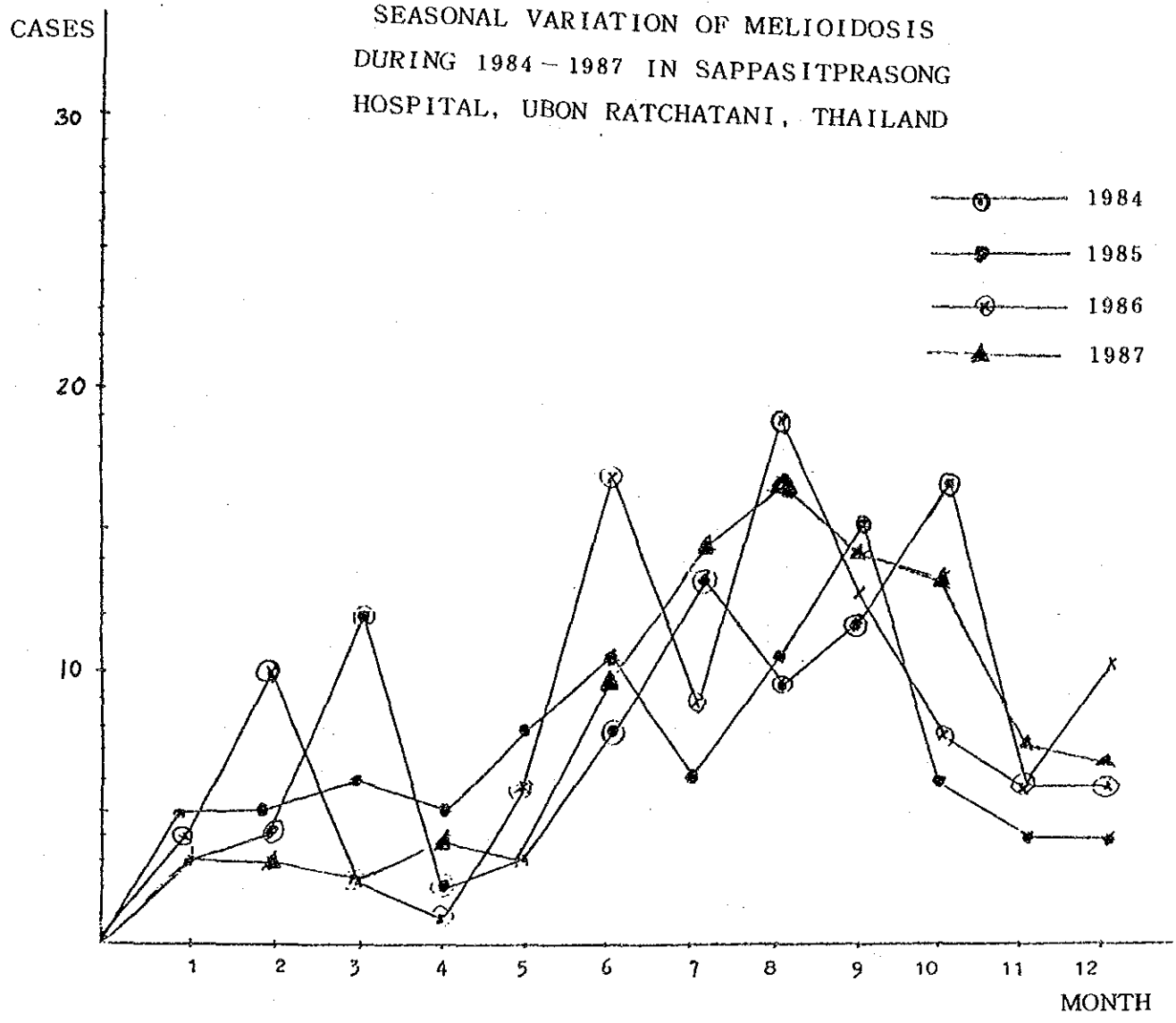
National Institute of Health, Trad Khuan District, Amphur Muang, Nonthaburi 11000, Thailand

SUMMARY : Phosphatase activity was compared quantitativcly among selected species of pseudomonads. *P. pseudomallei* showed the highest activity of a bell-shaped pH pattern with the peak around 5. 0. *P. cepacia* had the similar pattern of milder intensity.

In contrast, *P. aeruginosa* revealed an alkaline phosphatase activity with pH optimum higher than 8. 0, but the level of activity was much lower than the above two species. The enzymatic reactions of other species were slight or negligible at their optimum pH in the same test system.

These data were discussed in refer to their growth behaviour in different pH environment and also in connection with the recent information that the high activity of microbial acid phosphatase may be a favorable attribute to their intracellular parasitism.

SEASONAL VARIATION OF MELIOIDOSIS DURING 1984 – 1987 IN SAPPASITPRASONG HOSPITAL, UBON RATCHATANI, THAILAND



添付資料3.　公開技術セミナー英文配布資料（フィリピン編）
※前2編との重複部分は省略

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE)

SEMINAR
ON
LATEST MICROBIAL DISEASES STUDY

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE)

SEMINAR ON
LATEST MICROBIAL DISEASES STUDY

DATE : August 16, 1989

PLACE: Auditorium,
Research Institute for Tropical Medicine (RITM)
Alabang, Metro Manila

PROGRAM:

08:00 ~	Registration	
08:30 ~ 08:35	Opening remarks	Dr. MEDIADORA C. SANIEL, Director, RITM
08:35 ~ 08:40	Address	Mr. MORIYA MIYAMOTO, Resident Representative of Japan International Cooperation Agency (JICA)
08:40 ~ 09:05	Slide Film Showing	"RESEARCH INSTITUTE FOR TROPICAL MEDICINE"
09:05 ~ 09:20	Video Film Showing	"JICA IN THE PHILIPPINES"
09:20 ~ 09:30	Introduction of Lecturers	
09:30 ~ 11:00	Seminar I	"Recent Advances in Viral Vaccines" Prof. MICHIAKI TAKAHASHI
	Questions and Answers	
11:00 ~ 12:40	Seminar II	"Measles and Its Prevention" Prof. SHIGEHARU UEDA
	Questions and Answers	
12:40 ~ 13:40	L U N C H	
13:40 ~ 15:10	Seminar III	"Recent Advances in the Studies on the Structure and Function of Bacterial Protein Toxins(esp. Tetanus Neurotoxin) in Relation to the Improvement of Tetanus, Diphtheria and Pertusis Vaccines" Prof. MORIHIRO MATSUDA
	Questions and Answers	

PROGRAM:

15:10 ~ 15:30	Tea Break	
15:30 ~ 17:00	Lecture N	
	Questions and Answers	
17:00 ~ 17:30	Awarding of Certificates	
17:30 ~ 10:30	Cocktail Party	Hosted by JICA

(JICA GROUP TRAINING COURSE IN MICROBIAL DISEASE STUDY COURSE)

SEMINAR ON
MICROBIAL DISEASES STUDY

1. Team Leader/Virology	Prof. Michiaki TAKAHASHI, MD Ph.D Department of Virology, Research Institute for Microbial Diseases, Osaka University
2. Bacteriology	Prof. Morihiro MATSUDA, MD Ph.D *Department of Tuberculosis Research I*, Research Institute for Microbial Diseases, Osaka University
3. Preventive Medicine	Prof. Shigeharu UEDA, MD Ph.D Department of Preventive Medicine, Research Institute for Microbial Diseases, Osaka University
4. Coordinator	Yojiro Ishii Training Division, Osaka International Training Centre, Japan International Cooperation Agency

添付資料４－1.

公開技術セミナー参加者リスト（インドネシア編）　　LIST OF PARTICIPANT

NO	NAME	POSITION	ORGANIZATION (OFFICE)	ADDRESS	SIGN
1.	Dr. Arini Soetomo	Doctor Staff of KARANTINA Hospital	KARANTINA HOSPITAL		
2.	Drs. Ahmad Isfarain	Chief of Evaluation Section	Sub Dit Entomology Dit.Vector Borne Diseases, Dit. gen. CDC &EH, Ministry of Health		
3.	Dr. Benyamin Kaligis	Chief Bureau of Secretariate	PERUM BIO FARMA		
4.	Drh. Pudjiatmoko	Staff of Viral Vaccine Assay	National Veterinary Drug Assay Laboratory		
5.	Mohammad Amin Hasibuan	Staff of CRC	Ministry of Health		
6.	Mr. Rodney J. Hatfield	Project Officer E P I	U N I C E F		
7.	Etty Suharti	Nurse	Cipto Mangunkusumo Hospital		
8.	Ani Sofiyani	Nurse	Cipto Mangunkusumo Hospital		
9.	Machio Yamano	Nurse	Cipto Mangunkusumo Hospital (JOCV)		
10.	DR. Pratiwi Sudarmono PhD	Lecturer, Head Div. of Enteric Pathogen	Dept. of Microbiology, Medical Fac. Univ.of Indonesia		
11.	Dr. Dalima A W Astrawinata	Clinical Pathologist in Hospital Central Lab.	Dept. of Clinical Pathology Cipto Mangunkusumo Hospital		
12.	Drs. Djoko Yuwono	Researcher	Communicable Diseases Center		
13.	Agus Sjahrurachman	Senior Lecturer	Dept. of Microbiology School of Med. Univ.of Indonesia		
14.	Suharto	Staff of Dept. Microbiology	Univ. of Indonesia		
15.	Dr. Dyah Widyaningroem	Researcher	Communicable Diseases Research Center, NIH R&D		
16.	Dr. Basundari Sri Utami	Researcher Staff	Communicable Diseases Research Center		
17.	Dr. Nurul Akbar	Nosocomial Team	Dept. of Internal Medicine Cipto Mangunkusumo Hospital		
18.	Ir. Edhie Sulaksono	Researcher	NIH R&D, Centre for Communicable Diseases Research		
19.	Dr. Sutaryo	Paediatrician	Gadjah Mada University		
20.	Drs. Soegito	Chief Section Insectarium Sub Dit. SPP(Entomology)	CDC and EH		

LIST OF PARTICIPANT

NO	NAME	POSITION	ORGANIZATION (OFFICE)	ADDRESS	SIGN
21.	Drs. Ketut Japa	Head of Bacterial Vaccine I	PERUM BIO FARMA		
22.	Amy Retno Soeprapto DVM	Head of Quality Control III	PERUM BIO FARMA		
23.	Dra. Muljati Prijanto	Researcher	Communicable Diseases Research Center,NIH R&D Ministry of Health		
24.	DR.Mochammad Sholichin	Chief of Staff, Research and Technology Division	PT KIMIA FARMA		
25.	Tukinem	Nurse	Cipto Mangunkusumo Hospital		
26.	Tintin Rustini	Nurse	Cipto Mangunkusumo Hospital		
27.	Dra. Sri Hardjining	Researcher	Communicable Diseases Research Center		
28.	Drs. Bambang Heriyanto	Researcher	Communicable Diseases Research Center		
29.	Dr. Siti Sundari Yuwono	Researcher	National Institute of Health Research and Development		
30.	Dr. Budy Alamsjah	Staff Immunization of CDC	Department of Health		
31.	Made Nursari, SKM	Team Nosocomial Infection	Cipto Mangunkusumo Hospital		
32.	Dr. Suharyono Wuryadi	Researcher	Communicable Diseases Research Center, NIH R&D Ministry of Health		
33.	DR. Hendarto Soepandji DTM&H	Consultant of Tropical Diseases	KARANTINA Hospital		
34.	Siti Zubaidah,BSc	Staff of Sub Dit. Entomology	CDC & EH, Ministry of Health		
35.	Dra. Saumijati	Staff of Sub Dit. Entomology	Directorate General CDC&EH Ministry of Health		
36.	Kamaluddin Zarkasie DVM	Staff of Bacterial Assay Section	Veterinary Drug Assay Laboratory		
37.	Dra. Antik Tjantika Teguh	Head of Viral Vaccine Control	PERUM BIO FARMA		
38.	Lia Siti Halimah Gunawan, DVM	Staff of Viral Vaccine Production	PERUM BIO FARMA		
39.	Dr. Janas	Chairman of Nosocomial Infection Control Committee	Infectious Diseases Hospital Jakarta		
40.	Drs. Eko Suprijanto MSc.	Research Scientist	National Institute of Health Research and Development		

LIST OF PARTICIPANT

NO	NAME	POSITION	ORGANIZATION (OFFICE)	ADDRESS	SIGN
41.	Drs. Abdul Rasyid Hap	Head Laboratory of Microbiology	Infectious Diseases Hospital Jakarta		
42.	Jasni Murti	Staff of Microbiology Laboratory of IDH	Infectious Diseases Hospital Jakarta		
43.	Martin Hartiningsih	Nurse	PPN I, RSCM		
44.	Suparmiati	Nurse	I B I , Cipto Mangunkusumo Hospital		
45.	Kasijati		Cipto Mangunkusumo Hospital		
46.	Dr. Cyrus H. Simanjuntak	Researcher	National Institute of Health Research and Development		
47.	N. Takeshita	Nurse	Cipto Mangunkusumo Hospital (JOCV)		
48.	Drs. Mochammad Nurhadi	Head of Microbiology	Public Health Laboratory Province		
49.	Kazuyo Naito	Nurse	Cipto Mangunkusumo Hospital		
50.	Drs. Eko Rahardjo	Researcher on Communicable Diseases	Communicable Diseases Research Center, NIH R&D		
51.	R. Sardjito	Dept. of Microbiology	Univ. of Indonesia		
52.	Dra. Rini Pangastuti	Research Scientist	Communicable Diseases Research Center, NIH R&D		
53.	Dr. Robert Widjaja	Researcher	Communicable Diseases Research Center		
54.	Enok Ratnasih	Team Nosocomial Infection	Cipto Mangunkusumo Hospital		
55.	Yuniarti	Nurse	Instalasi Gawat Darurat, Cipto Mangunkusumo Hospital		

添付資料 4－2.

公開技術セミナー参加者リスト（タイ編）

List of Attendants

Seminar on Latest Microbial Diseases Study

at National Institute of Health

on Wednesday, August 9, 1989

at 08.30 a.m. - 04.30 p.m.

Department of Medical Sciences

*1. Miss Piansiri Chantrpenkul (RESIGN)

*2. Mr. Wattana Auwanich

*3. Ms. Arunee Chantakit

*4. Mr. Suwicha Kupradinun

5. Dr Yaowapa Pongsawatmanit

6. Dr. Chuinrudee Jayavasu

7. Miss Pimja Sawanpanyalert

8. Miss KrongKaew Suparat

9. [illegible]

10. Miss Prapawadee Booncharoen

(Remarks: * = Ex-participants)

Mahidol University

*1. Ms. Orasa Suthienkul
*2. Ms. Kaewkanjana Mangkalanond
*3. Mr. Sanay Chearskul
*4. Mr. Chatchai Sornchai
*5. Ms. Kesara Kasemsuksakul
*6. Miss Srisurang Tantimavanich
7. Prof. Sithipan Chaiyanan
8. Prof. Anong Pariyanon
9. Prof Kanda Wattanopak
10. Prof. Waranya Sangpetchsong
11. Prof. Charam Jansri
12. Mrs. VANNEET KHAWCHAROENPORN
13. DR. VIRAPONG PRACHAYASITTIKUL
14. Dr Amnouay
15. Kadarom
16. Supiannee
17 Chongrak
20 Surang
21 Churairatana Mila Rul
22. JOSEPH SUEHANTHAM., MD.
23. SURASAK PRATUANGTHAM. MD.

(Remarks: * = Ex-participants)

Chulalongkorn University

*1. Ms. Orawadee Seriburi —

*2. Ms. Sattaporn Sirotamarat

*3. Miss Kanchalee Lertpocasombat

4. Miss Vimolmas Lipipun

5. Miss Nongluksna Sriubolmas

6. Assoc.Prof.Dr. Somjai Rienprayut

7. Ms. Sudalak Chantarajda

8. Prof. Pakatip Renold —

9. Assoc.Prof.Dr. Wanna Panraksa

(Remarks: * = Ex-participants)

Pramongkutklao College of Medicine

* 1. Lt.Col. Rudiwilai Samakoses

2. Major Chananan Khorprasert

3. Major Adisak Nunai

Charoenkrung Pracharuk Hospital

*1. Ms. Sunee Chiothanawat

Ratchaburi Hospital

*1. Mrs. Vanna Pengruangrojanachai

Prince of Songkla University

*1. Ms. Urirat Kongmuang

添付資料 4－3.

公開技術セミナー参加者リスト（フィリピン編）

SEMINAR ON
THE LATEST MICROBIAL DISEASES STUDY
August 16, 1989
RITM Auditorium
Alabang, Metro Manila

LIST OF PARTICIPANTS

I. RESEARCH INSTITUTE FOR TROPICAL MEDICINE

1.
2.
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10.
11.
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13.
14.
15.

II. DEPARTMENT OF HEALTH

1. Mrs. RIZALINA RIEL (ex-participant)
2. Dra. ROSITA DE LEON
3. Ms. ELEONOR PASTRANA
4. Miss NICOLASITA LEMANA
5. Mrs. TERESITA LOYOLA
6. Mrs. ZENAIDA FONTANOS
7. Mrs. MINDA QUITORIANO
8. Dr. VENERACION MUNAR
9. Mr. CORNELIO ROC
10. Mrs. NENITA CANAFRANCA

III. UNIVERSITY OF THE PHILIPPINES

1. Dr. ANTONIO V. JACALNE (ex-participant)
2. Dr. EUFEMIA M. TOBIAS (ex-participant)
3. Dr. ADALBERTO R. ALDAY
4. Dr. NINA G. BARZAGA
5. Ms. LOUELLA A. DANCEL
6. Prof. NORBERTO R. RICACHO
7. Prof. NIDIA M. MANUSON
8. Dr. BLANCHE C. BARBERS
9. Dr. RUBEN N. CARAGAY
10. Dr. REMIGIO D. MERCADO

IV. UNIVERSITY OF SANTO TOMAS

1. Dr. EVELINA N. LAGAMAYO
2. Dr. EDITA G. TORRES
3. Dr. CARMELITA NAVARRO
4. Dr. MARY AGNES REGAL
5. Dr. LOURDES LLAMAS

V. SAN LAZARO HOSPITAL

1. Dr. ABELARDO ALERA
2. Dr. VICTORIA ALARCON
3. Dr. EDNA SANTIAGO

VI. PHIL. COUNCIL FOR HEALTH RESEARCH & DEVELOPMENT

1. Ms. EVA BALEDIATA
2. Mrs. RUBY CASTRO
3. Ms. CECILLE GISALA

VII. BIOLOGICAL PRODUCTION SERVICE

1. Mrs. PETRA LOJO
2. Miss MARIA REDIMANO
3. Mrs. DOLORES MERCADO

VIII. OTHERS

1. Mrs. MARLIN N. REGALADO (ex-participant)
2. Dr. JOEL REGALADO (Veterans Memorial Med. Center)
3. Dr. MARIA TERESA C. ALHAMBRA (ex-participant)
4. Dr. GLORIA LIM (Lung Center of the Phil.)

DEP OF HEALTH
Research Institute for Tropical Medicine
ALABANG, MUNTINLUPA, METRO MANILA, PHILIPPINES
TEL. NOS. 842-28-28 * 842-20-79 * 842-21-94 * 842-22-45 TELEX 4213

Aug. 10, 1989

MR. MORIYA MIYAMOTO
Resident Representative
JICA Philippine Office
2nd Floor, LC Bldg.
375 Sen. Gil J. Puyat
Makati

Dear Mr. Miyamoto:

This is to confirm our concurrence on the conduct of a seminar on the latest Microbial Diseases Study intended for previous participants of JICA's past group training program as well as for other interested professionals on Aug. 16, 1989, at the Research Institute for Tropical Medicine.

I am likewise available on the 14th of August at 3:00 o'clock in the afternoon for the scheduled courtesy call with the Japanese lecturers.

For lecture IV, we propose that Dr. Remigio M. Olveda, Chief, Research & Training Division, this Institute will lecture on the topic 'Vaccine Development in Schistosomiasis and other Parasitic Diseases'.

Attached herewith is the list of other RITM staff whom we recommend to attend the lecture.

Thank you.

Very truly yours,

MEDIADORA C. SANIEL, MD.
Director

/bpf
encls: a/s

SEMINAR ON

THE LATEST MICROBIAL DISEASES STUDY
Aug. 16, 1989
RITM Auditorium
Alabang, Metro Manila

LIST OF PARTICIPANTS:

RESEARCH INSTITUTE FOR TROPICAL MEDICINE

1. Ms. Fe Leaño (ex-participant)
2. Ms. Lydia Sombrero (ex-participant)
3. Ms. Fems Paladin
4. Mr. Iluminado Livelo
5. Dr. Jose Tablante
6. Dr. Bernadette Ramirez
7. Dr. Noel Miranda
8. Dr. Socorro Lupisan
9. Dr. Tessa Tan-Torres
10. Dr. Gertrude Chan
11. Dr. Marilla Lucero
12. Dr. Jose Marie Capellan
13. Dr. Salvacion Gatchalian
14. Dr. Nelia Salazar
15. Dr. Gemiliano Aligui

添付資料 5. 帰国研修員 Questionnaire 用紙

GROUP TRAINING COURSE IN MICROBIAL DISEASES STUDY COURSE

QUESTIONNAIRE

I. Personal Data

1. Your name in full:

2. Organization where you work at present:

   * Name of organization:

   * Address:

   * Telephone number:

3. Your present post and contents of your work/research:

II. Training record after JICA training at Biken

1. Have you undergone any technical or academic training after returning from Japan?

   ☐ Yes ☐ No

2. If "Yes", please give information on the following items:

   (1) Name of training institution:

   (2) Training period:

   (3) Contents of training

3. If you have any plan of further training or study, please elaborate on it.

(1) Contents of training or study

(2) Name of institution you would like to do your further training/ study.

III. Effects of JICA training

1. Has JICA training at Biken proved of help to your work/study?

☐ Yes ☐No

2. If "Yes", please explain how it preferably influenced your work/study.

3. If "No", please explain why it has proved ineffective.

IV. Your suggestions for JICA's Microbial Diseases Study Course.

V. Problems you are facing in your present research/study, if any.

Thank you for your cooperation
Osaka International Training Centre,
Japan Internation Cooperation Agency

OSAKA INTERNATIONAL TRAINING CENTRE (OITC)
JAPAN INTERNATIONAL COOPERATION AGENCY
1-28,MINAMIKASUGAOKA 5-CHOME,
IBARAKI CITY,OSAKA, 567 JAPAN
PHONE:IBARAKI (0726)23-6631

添付資料６．　帰国研修員リストおよび Questionnaire回答結果

【インドネシア】

研修員氏名	研修年度	来日時の職位	現職	コース後の他の研修	今後の研修予定	研修コースの効果	研修コースへの助言	現在の問題点
Mr. Mohammad Amin Hasibuan	1974	Researcher, National Health Research Institute	Researcher, Communicable Diseases Research Center (CDRC)	米国ｹﾌﾄ 大学医学部 ﾌﾟﾗｽﾐﾄﾞと組み 替え DNAの遺伝子分析(4か 月)	なし	知識の 拡大、高度技術の 習得、日本人研究者の ような 熱心な 研究態度が 身についた。	ﾎﾟｽﾄﾄﾞｸﾄﾗﾙのためのｺｰｽ 設定もしてほしい。	予算不足。
Dr. Ibrahim Samad	1976		― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Mr. Sudi Sinulingga	1977	Analyst, Bacteriology Laboratorium Kasehatan	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Mr. Benjamin Kaligis	1978	Researcher, Bio Farma	Secretary of Bio Farma, Technical Advisor to the President Director. ﾋﾞｵﾊﾞﾙﾏにてﾎﾟﾘｵと 風疹ﾜｸﾁﾝ製造ﾌﾟﾛｼﾞｪｸﾄを 指揮。	韓国緑十字 B 型肝炎ﾜｸﾁﾝの 製造、品質管理 (3 か 月)	国立熊本病院にて ﾎﾟﾘｵ 撲滅ｾﾐﾅｰ参加	ｳｲﾙｽ学の 基礎知識と研究手法を 習得した。昇格に 役立った。	ひとつの分野だけで なく複数の分野を 連携した研修内容が 欲しい。	高速遠心分離機などの 機材が 十分にない。
Dr. Pratiwi Soedarmono	1979	Lecturer, Dep. of Microbiology, Fac. of Medicine, Univ. of Indonesia.	同左 ｲﾝﾄﾞﾈｼｱ初の 宇宙飛行士として 訓練中	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Ms. Sri Susilowati	1980	Staff of Virology Dept., Biomedical Res. Center.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Mr. Mochammad Nurhadi	1981	Head, Dept. of Microbiology, Provincial Lab. Services.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Mr. Eko Rahardjo	1984	Researcher of Virus, Biomedical Res. Center.	Researcher on Virus, CDRC. ｴﾝﾃﾛ、ﾛﾀ、風疹、ﾃﾞﾝｸﾞｳｲﾙｽを 研究	なし	ﾓﾉｸﾛ、血清診断学の研修を 微研もしくは国立衛研 (東京)にて 希望	血清学的診断手技が 役に 立った。	ｲﾝﾄﾞﾈｼｱは 人口の 割合に受け 入れ 研修員数がﾀｲと 比べ 少ない。	無回答し
Mr. Abdul Rasyid	1985	Head, Microbiology Laboratory Unit, Infectious Diseases Hospital Jakarta.	同左 腸内病原性細菌の 分離、細菌性疾患の 研究。	なし	CT, LT, ST毒素の 精製についてJICAの 支援による研修を 行いたい 。	多くの細菌の 分離、同定の 手法を 習得した。	帰国研修員に 対し フォローｱｯﾌﾟのための 研修を 実施してほしい 。	実験器具、培養液、施設が不十分。
Ms. Rini Pangastuti	1988	Researcher, CDRS.	Research Scientist, CDRC.	なし	阪大微研にて学位ｺｰｽを履修したい 。	ｼﾌﾃﾘｱ、百日ぜき、破傷風に 関する知識が 身についた。	帰国研修員のための上級微生物病研究ｺｰｽが欲しい。日本の 研究者との研究交流の 場が 欲しい。	最新の 関連情報の欠如。研究活動に対する予算不足。

【 タ イ 】

研修員氏名	研修年度	来日時の職位	現職	コース後の他の研修	今後の研修予定	研修コースの効果	研修コースへの助言	現在の問題点
Ms. Vanneet Mukhajonpan	1974	― ― ―	Scientist, Dept. of Pathol. Siriraj Hospital, Machidol Univ. 電顕および 組織化学担当教官	なし	― ― ―	電顕関係の 技術、知識の 向上に 大変役立った	― ― ―	電顕による 薄層切片に関する免疫ﾍﾟﾛｼﾀﾞｰｾﾞの 研究がうまく進んでいない 。

研修員氏名	研修年度	来日時の職位	現職	コース後の他の研修	今後の研修予定	研修コースの効果	研修コースへの助言	現在の問題点
Ms. Piansiri Chantrpenkul	1975	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Ms. Orasa Suthienkul	1977	Instructor, Dept. of Microbiology, Faculty of Public Health Mahidol Univ..	Associate Prof., Dept. of Microbiology, Faculty of Public Health Mahidol Univ. 細菌性下痢症に 関する研究、教育	東京都衛生研究所にて11か月間の 食物毒、腸内細菌に 関する研修	下痢性疾患に 関する DNA 試験、免疫試験の 学位留学	高度な 実験技術が 身についた。日本の 研究者とのつながりができた	研修テーマに関する講義、意見交換、資料の 十分な提供があれば研修員の 理解が 深まる。帰国後の 研究継続に 必要な 機材の 供与	予算、機材不足
Mr. Wattana Auwanich	1977	Scientist, Research Institute, DMS, Min. of Public Health.	Chief, Immunology Sec., NIH, DMS	マヒドン大学にて2 年間の 熱帯医学に 関する修士コースを 履修	― ― ―	ウイルス学に 関する多くの手技を 習得した。	― ― ―	HIVウイルスに関する分子生物学的手技の 知識不足
Dr. Sanay Chearskul	1979	Assistant Prof., Faculty of Medicine, Siriraj Hospital, Mahidol Univ..	Sub-dean, Faculty of Med., Siriraj Hospital, Mahidol Univ.. 小児科伝染病ユニット主任を 兼務	なし	― ― ―	研究手法の 向上に 役立った	― ― ―	― ― ―
Ms. Kaewkanjana Mangkalanond	1979	Scientist, Dept. of pathol., Siriraj Hospital, Mahidol Univ..	同左	なし	― ― ―	新しい技術を 帰国後の研究員の 指導に 役立てることができた	― ― ―	― ― ―
Ms. Urirat Kongmuang	1980	Instructor, Dept. of Pathology, faculty of Medicine, Prince Songkla Univ..	同左 医学生、歯学生、研究助手に対して臨床微生物病学を 指導	なし	JICAによる 細菌性伝染病の 研修を 希望	文部省に よる学位留学に 応募できることとなった	35才の 年齢制限を 廃止すべき	― ― ―
Mr. Chatchai Sornchai	1981	Instructor, Dept.of Clin.Microbiol., Faculty of Medicine, Siriraj Hospital, Mahidol Univ..	Assistant Prof., Faculty of Medicine, Siriraj Hospital, Mahidol Univ., 下痢症細菌の 分離、同定。臨床用簡易検査法の 指導	なし	微研等でエンテロトキシンの研究を 希望	研究の 組立て 方を 修得した。より高度な 研究をする 自信がついた	帰国研修員に 対して再研修の 機会を 与えてほしい	最新の 技術に 関する知識がない
Ms. Orrawadee Seriburi	1981	Lecturer, Dept. of Microbiology, Faculty of Medicine, Chulalongkorn Univ..	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Dr. Rudiwilai Samakoses	1982	Instructor, Dept. of Pediatrics, Pramongkutklao College of Medicine.	同左 小児伝染病に 関する指導	なし	医学微生物学に 関する研修を 希望	微生物病研究を 理解し、実施することができるようになった	軍関係の 医学校からも 研修員を 受け 入れてほしい	
Ms. Arunee Chantakit	1982	Pharmaceutical Analyst, Analysis Div., DMS.	Medical Scientist 6, Biological Assays Sec., Drug Analysis Div., DMS. 医薬品の 微生物研検査	なし	非滅菌医薬品に 含まれる 細菌毒素の 研究を 行いたい	研究を 創造する能力がついた	上級研修員に 対しては1-3 か月の 研修期間が 良い	機材が 十分でない

研修員氏名	研修年度	来日時の職位	現職	コース後の他の研修	今後の研修予定	研修コースの効果	研修コースへの助言	現在の問題点
Dr. Eumpon RAttanachanpichai	1983	Instructor, Faculty of Medicine, Chiang Mai Univ..	Assistant Prof., 同左 医学生、薬学生等に 対する寄生虫学の 教授。マラリアに 関する免疫学の 研究	なし	― ― ―	研究実施の ための 経験を 養うことができた	研修参加準備の ためコース情報は もっと 詳細な ものが必要	― ― ―
Ms. Nualjira Patararangrong	1984	Lecturer, Dept. of Microbiology, Facuty of Science, Prince Songkla Univ..	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Mr. Suwicha Kupradinum	1984	Medical Scientist, Virus Research Institute DMS.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Ms. Sunee Chiothanawat	1985	Medical Technologist, Charoenkrungpracharuk Hospital.	同左 細菌診断技師	なし	― ― ―	特になし 現在の 職場では微研で学んだ知識、技術が 生かせない	― ― ―	― ― ―
Ms. Kasera Kasemsuksakul	1985	Instructor, Dept.of Clin.Microbiol., Faculty of Medicine, Siriraj Hospital, Mahidol Univ..	Associate Prof., 同左 医療技術学生への細菌学教授、大腸菌毒素に 関する研究	予定あり	ミズリー大学でのPhD 留学内定	大腸菌毒素、NAGビブリオに 関する知識は その後の研究活動に 非常に 参考に なった	現行の 研修期間のままで良い	教育に 割かねばならない時間が 多くて研究に集中できない
Mr. Chachawann Apichartpiyakul	1986	Lecturer & Researcher, Dept. of Microbiology, Faculty of Medicine, Chiang Mai Univ..	同左 医学生に 対する免疫学の 教育、HIV 抗体陽性患者の 血清診断学的研究、破傷風の 免疫学的研究	神戸大学でインフルエンザウイルスの分離、同定に 関する2 か 月間の 研修	阪大微研でヘルペスIV 型の 研修を 希望	研究の 組立て 方を 習得した	指導教官はもっと研修員に心を 開いて指導してもらいたい	― ― ―
Ms. Vanna Pengraungrojanachai	1986	Medical Scientist, Ratchaburi Hospital, Min. of Public Health	同左 微生物検査室及び 血液バンクでの検査業務	なし	― ― ―	細菌同定の 最新技術が 理解できた	― ― ―	日常検査業務に 追われ研究が できない
Ms. Sattaporn Sirotamarat	1987	Assistant Prof., Dept. of Microbiology, Fac.of Pharmac. Science, Chulalongkorn Univ.	同左 微生物学の 講義	なし	阪大酵素研にて学位留学を 希望	遺伝子工学の 技術が現在の 講義、将来の研究に 役立つ	コース 開始前に 研修内容を 知らせるべきである。コース 当初に 基本の 講義をしてほしい	― ― ―
Ms. Srisurang Tantimavanich	1988	Lecturer, Dept.of Clin.Microbiol., Faculty of Medicine, Siriraj Hospital, Mahidol Univ..	同左 真菌性疾患の 原因菌の 分離と同定、分子生物学的研究	なし	長崎大学にて真菌の 分子生物学の 学位留学を 希望	技術、知識の ほか、日本の 研究者との交流ができた	帰国研修員の ための再研修 (短期でも可)	設備の 不備
Ms. Kanchalee Lertpocasombat	1988	Microbiologist, Dept. of Microbiology, Faculty of Medicine, Chulalongkorn Univ..	同左 細菌学検査業務、学生指導	なし	阪大微研で 分子生物学の 研修を 希望	検査技術が 帰国後そのまま業務に 役立った	月に 一度程度の 講義 、帰国研修員の 再研修、研究費補助	研究資材、予算の不足

【フィリピン】

研修員氏名	研修年度	来日時の職位	現職	コース後の他の研修	今後の研修予定	研修コースの効果	研修コースへの助言	現在の問題点
Dr. Antonio V. Jacalne	1974	Lecturere, Institute of Pub.Health, Univ.of the Philippines,	Prof.of Med. Microbiology, College of Pub. Health, 医学、薬学、看護学生への微生物学指導 70%、研究 30%	UP-World Health Foundation による1か月間の産業職業病対策研修	ワクチン製造技術、免疫診断技術、ハイブリドーマの技術研修を 微研で受けたい。	現在の ワクチン製造技術の 基礎を 身につけられた。信頼できる 日本の 器材の 使用法を 学んだ。	帰国研修員の 帰国後の活動モニタ リングを定期的にするべき。帰国後も 微研との研究協力を 継続すること。	教育主体で 研究の時間が ない。研究予算不足
Mr.Joaquin Gabaldon	1974	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Ms. Amelia Baun	1976	Bureau of Res. and Laboratories.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Dr. Mena Quina	1977	Research Worker, Virology Sec., Bureau of Res. and Laboratories.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―
Dr. Rebecca Tongo Jose	1978	Senior Resident, J.R.Reyes Memorial Hospital & Med. Center.	Med. Consultant, 同左 血液学、微生物病、解剖病理に 関するコンサルタント。マニラ 私立大学医学部で教育	WHOによるロンドン王立病院での輸血管理コース（1か 月間）を2回受講	JICAその他日本の 援助機関に よる微生物、血液学、解剖病理学の研修を 希望	現在の 伝染病診断業務に 研修で 学んだ技術が 直接生かされている。	研究の 進捗に 合わせて 研修期間を フレクシブルに 変えてほしい	研究設備が 不十分
Ms. Marlin Nicolas	1978	Medical Technologist, Veteran's Memorial Med. Center.	Medical Technologist, Regional Laboratory, Ministry of Health, Kingdom of Saudi Aarabia.	セント・トマス 大学にて医療技術の 修士課程を 終了	阪大微研にて寄生虫学もしくは微生物学の 研修を 希望	ひととおりの寄生虫検査技術が 身につき 医師からも信頼される ように なった	今回のようなセミナーを 定期的に 開催してほしい	問題なし。神に 感謝
MS. Lina Saling Riel	1979	Research Bacteriologist, Bureau of Research and Laboratories.	Chieh Res. Bacteriologist, 同左	マレイシア 医学研究所にて微生物学のディプロマコース(6か月間)を 履修	微生物品質管理、腸内細菌の 研究を 東京の 国立衛生研で 希望	大腸菌毒素検出試験が 役に 立った。	帰国研修員に 対する上級コースの設定	機材の 不足
Ms. Lydia Taylo Sombrero	1979	Med. Technologist, Philippine Gen. Hospital Univ. of the Philippines	Sci. Res. Specialist III, Head, Bact. and Mycobact. Sec., Microbiol. Dept. Res. Instiute for Trop. Medicine (RITM).	結核研究所、東京都衛生研究所において各々4 か 月の結核菌分析技術、腸内細菌分析技術の 習得の ための研修を 受講	清瀬の 結核予防研究所に おいて 結核の 免疫学を 研修したい	帰国後下痢性疾患の研究グループに 参加した際コースでの 経験が 大変に役立った	帰国研修員に 対して上級コースを設定してもらいたい	専門の 技術知識、予算の 不足
Dr. Maria Teresa Alhambra-Barzaga	1984	First Year Training Resident, Kabataan Children's Hospital.	Medical Specialist I, Dept. of Pathology, Lung Center of the Philippines. 肺ガン研究のための細胞培養	なし	微研でモノクローナル抗体の研究を 行いたい	役に 立った	帰国研修員への上級コースは 前回の 研修時に し残した項目が 研修ができ、ぜひ実施してほしい	予算不足
Ms. Maria Victoria Tiongaon	1986	Resident Physician, Dept. of Pathology, Western Visayas Med. Center, Min. of Health.	Assistant Prof., Dept. of Public Health, College of Public Health, Univ.	― ― ―	― ― ―	― ― ―	― ― ―	― ― ―

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Dr. Eufemia M. Tobias	1987	Assistant Prof., Comprehensive Community Health Program, College of Pub. Health, Univ. of the Philippines	同左 医学生、歯学生に 対する教育 微生物教室での研究	なし	阪大微研での電顕による寄生虫学の 研究または マラリア抗原の 研究を 希望	研究に 取り 組む 姿勢や 方法など日本での方法を 現在の 仕事にも生かしている	研究の 方向性を より明確に するための 指導内容の 付加。研修途中での研究進捗発表セミナーの 実施	予算不足
Ms. Fe Tibayan Leano	1988	Sci. Res. Specialist, Dept. of Health, RITM.	Research Specialist IV, Head, Diarrheal Sec., Microbiology Dept., RITM. 研究室の 管理、監督 下痢疾患患者の 検体検査 室員への技術指導 研究活動 "Plasmid Analysis by Gel Electrophoresis of antibiotic-resistant Sh. flexneri".	なし	阪大微研での下痢症病原体のDNA解析、Vibrio Cholerae, Shigellaeの薬剤耐性研究、出血性大腸菌の 研究を 希望	DNAに関する技術が 非常に 役に 立った。分子生物学的研究手法の 方向付けができた	帰国研修員の 帰国後の活動状況を モニターしながら適当なものについては上級コースに受講できるようにもらいたい	薬品、器具不足。技術コンサルタント 体制の 不備。資金不足

添付資料７．持ち帰り資料一覧

１）インドネシア国立衛生研究開発所資料
"A Glance at The National Institute of Health Research and Development"

２）タイ国立衛生研究所資料
"National Institute of Health, Department of Medical Sciences, Ministry of Health"

３）チェンマイ大学医学部誌１９８８年度版
"Bulletin 1988, Faculty of Medicine, Chiang Mai University"

４）チェンマイ大学医科学研究所資料
"Background Information Sheet, The Research Institute for Health Sciences (RIHES), Chiang Mai University, Thailand"

５）マヒドン大学公衆衛生学部微生物学科資料
"Department of Microbiology, Faculty of Public Health, Mahidol University"

６）フィリピン熱帯医学研究所年報１９８８年度版
"1988 Annual Report, Research Institute for Tropical Medicine, Department of Health"


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