

頁 68号

タイ国ラマチボディ医大医療協力
実施調査団報告書

昭和 46 年 4 月

海外技術協力事業団

Overseas Technical Cooperation Agency

122

907

MC

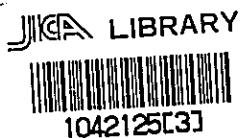
は し が き

我が国のタイ国ラマチボデイ大学病院に対する医療協力については1968年に開院した眼科部門の協力要請に始まり、翌年には実験病理部門に対する要請があり、今後の医療協力実施について事前調査を行った。

この調査にもとづき、眼科部門に対しては1969年2月より、実験病理部門には1969年12月より各々専門家を派遣している。それと並行して、研修員の受入、機材の供与等を実施して技術協力の効果と実績をあげているが、しかしながら、最近になり本プロジェクト以外に数々の新分野における協力要請がタイ国側より提出されたことにより、現在継続中の各部門のプロジェクトの今後の協力実施、方針等についての明確化と同時にこれらについて、再検討する必要性が生じ、今回本調査団を派遣し、現在継続中のプロジェクトおよび将来の計画等を含め調査したものをまとめたものである。この機会をかりて、報告者並びに関係各位の方々に心より感謝を申し上げます。

昭和46年4月

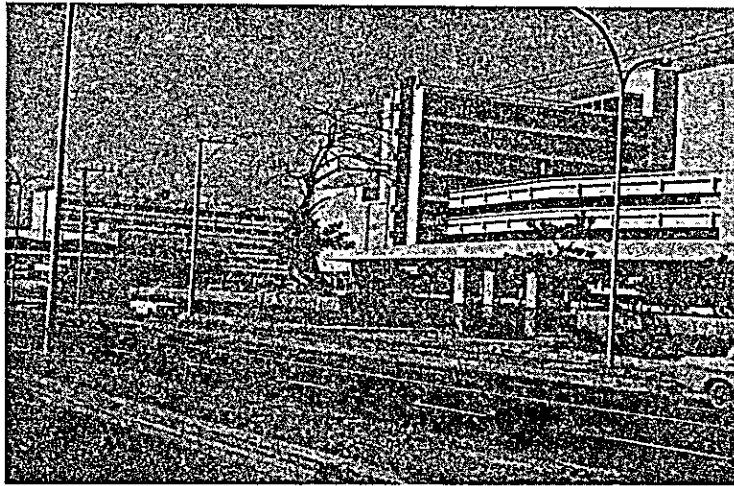
海外技術協力事業団



国際協力事業団	
受入 月日 '84. 3. 22	122
登録No. 01238	90.7
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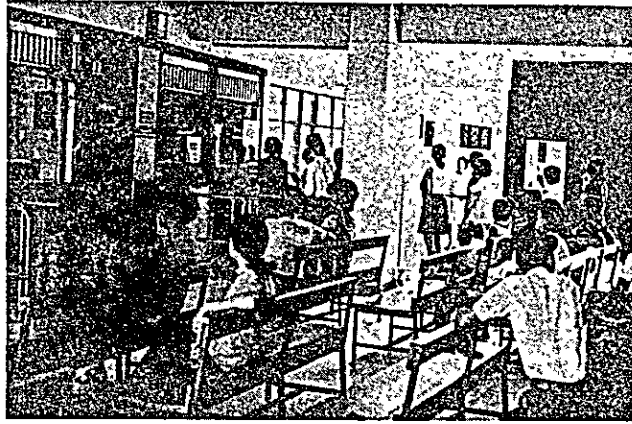
ラマチボデイ 大学病院外観



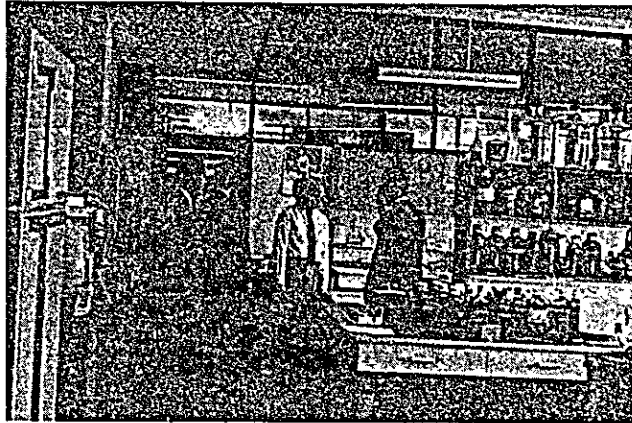
ラマチボデイ病院中央検査室にて
左よぬDr. Natth. Dr. Uthai,
Dr. Aree, 外山団長、中島団員



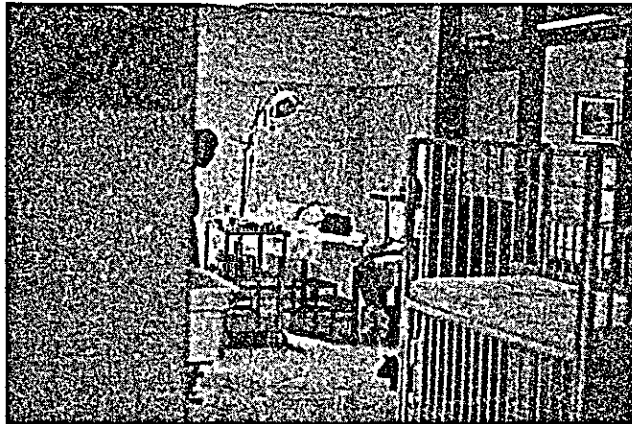
general meeting
左より中島団員、Dr. Aree外山団長



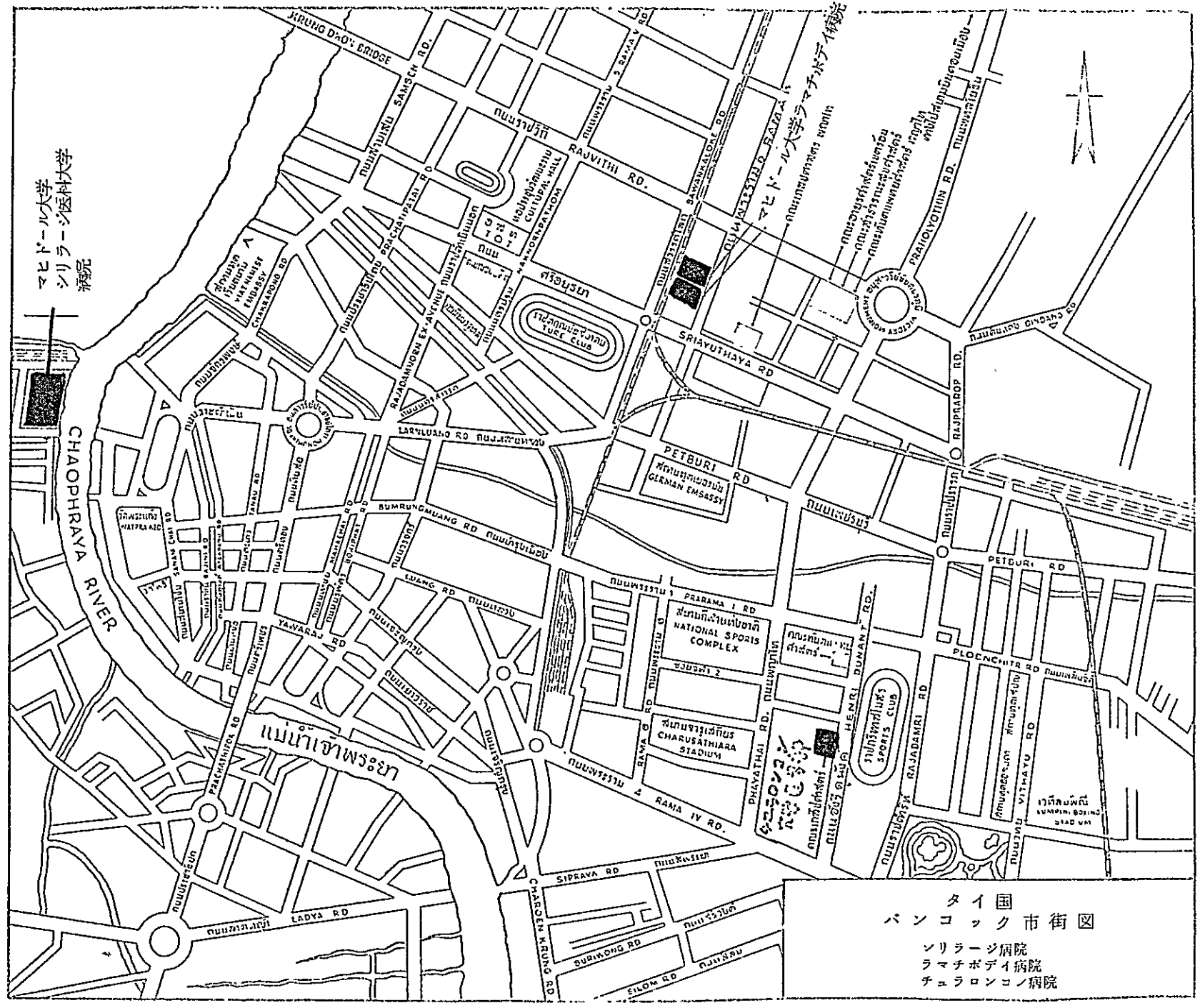
外 来 受 付



病 理 檢 査 室



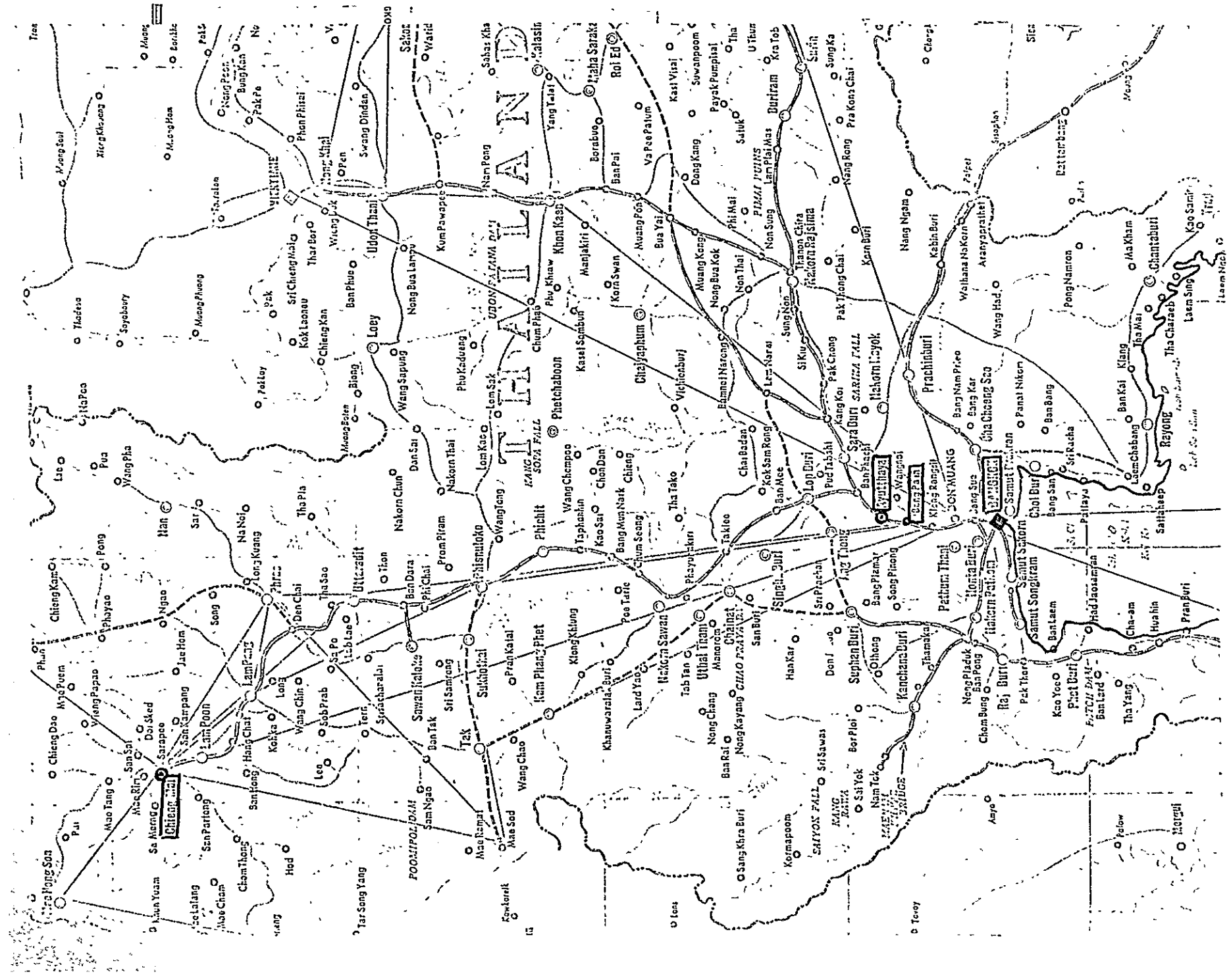
眼 科 手 術 室



マヒドール大学
シリラジ病院

マヒドール大学
ラマチャオディヨス病院

タイ国
バンコック市街図
シリラジ病院
ラマチャオディヨス病院
チャロロンコン病院



Map of Thailand showing major cities, roads, and geographical features. The word 'THAILAND' is prominently displayed across the center.

Map of Thailand showing major cities, roads, and geographical features. The word 'THAILAND' is prominently displayed across the center.

1. 調査団派遣の経緯

1968年に開院した、タイ国、ラマチボデイ医科大学病院の眼科部門と病理部門に対する、我が国の医療協力は、タイ国政府の要請にもとづき、1968年5月、まず眼科部門に、つづいて翌年、病理部門に対する医療協力調査団の事前調査として派遣しスタートした。

これらの調査は、現地における、調査、討議の結果、タイ国関係者との間に、協力方針に関し合意に伴ない、事前調査として報告書の中に相互の署名した。

この合意の基本線に沿って、専門家の派遣、研修員受入、機材供与等について、我が国は協力を続け、大きな成果をあげてきた。

しかしながら、1970年度にいたり、当初、計画になかった新分野の協力要請が、タイ国側より提出されたことにより、現在進行中の協力計画をさらに明確化するための、相互の意見調整と、本大学の希望する将来の協力計画について、調査し、再検討する必要が生じ今回の本調査団を派遣し今後の協力について打合せた。

主たる調査事項は、下記の通りである。

- (1) 現在進行中の協力計画及び将来の計画について
 - (イ) 眼科部門について
 - (ロ) 病理部門について
 - (ハ) その他、関連する事項
- (2) (1)に関連するタイ国の医療機関の事情について

2. 調査団メンバー

- 団 長 外 山 敏 夫
慶応義塾大学医学部教授
衛生学公衆衛生学教室
- 団 員 中 島 章、
順天堂大学医学部教授
眼科学教室
- 団 員 瀧 淵 彰
海外技術協力事業団
国内事業部研修第一課

3. 調査日程

1971年2月3日(出発日)より2月13日(帰国日)まで11日間にわたり、タイ国に滞在し、この間、下記の日程に従い、施設を視察し、タイ側関係者と討議を行なった。

そして、ラマチボディ医科大学に関する討議内容は“Gist of Discussion”として相互に署名し、交換した。

1971年2月3日(水) 09:00AM 羽田発JAL711

15:00 バンコック着

Asia Hotelにて、OTCAバンコック駐在事務所の高橋職員、眼科紺山、実験病理宮本両専門家と今回の視察、調査日程の大略について打合せ。

・ 2月4日(木) 09:30~10:30AM

駐バンコック日本大使館訪問

福田書記官(経済協力担当)に、本調査団の調査予定について説明

11:30~12:00AM

Mahidol 大学長

Dr. Jajaval Osathanondh を訪問、本調査団の目的について説明

午後 Ramathibodi Hospital 視察

・ 2月5日(金) 09:30~11:00AM

Ramathibodi Hospitalにて、院長Dr. Aree以下関係者と懇談

11:00~15:00

眼科学主任教授、Dr. Uthai 以下関係者と眼科部門に対する日本の過去と将来の協力について討議

16:00バンコック発

・ 18:00チェンマイ着

・ 2月6日(土) チェンマイ大学医学部訪問

医学部スタッフと懇談、病院視察

1971年2月7日(日) 午前 フリー
 午後 チェンマイ発
 バンコック着

2月8日(月) 09:00~12:00 AM
 Ramathibodi Hospitalにて病理学教室主任教授、
 Dr. Natth 以下スタッフと病理部門に対する過去と将来の
 日本からの協力について討議
 12:30~14:00
 大使公邸にて昼食会
 14:00~18:00
 Virus Research Institute, National
 Cancer Institute等視察

2月9日(火) Ramathibodi HospitalがCommunity Health
 のfieldとして設定しているBanpa-in 地区および
 Ayutaya 県立病院を見学

2月10日(水) タイ国祭日のためフリー

2月11日(木) 09:00~12:00 AM
 Chulalongkorn Hospital 視察
 14:00~16:00
 タイ国、DTEC訪問
 16:00~18:00
 OTCA医療協力部長、在タイ医療専門家の懇談会に出席
 19:00~22:00
 調査団の招待によりSiam Hotelにてタイ側医療協力関係
 者との懇談会

2月12日(金) 09:00~12:00 AM
 公衆衛生省訪問
 13:00~17:00
 Ramathibodi HospitalにてFinal Meeting,
 "Gist of Discussion"作成
 19:00~21:00
 Mahidol University学長、Jajaval 招待による
 懇談会

1971年2月13日(土) 12:25PM バンコック発

21:20PM 東京着

4. ラマチボデイ医科大学について

正式名称は、Faculty of Medicine, Ramathibodi Hospital, Mahidol University という。

組織上は、11学部よりなる国立Mahidol Univ. の1医学部であるが、実際上は、Univ本部に対する従属性は弱く、独立の1医科大学と言ってもさしつかえない。ロックフェラー財団の援助により大学設立は1965年、国王の臨席になる病院の開院式は1969年5月3日と新しく、タイ国において最新の設備を誇る。第一期卒業生が今年で予定である。

本大学のめざすところは、将来のタイ国の医学教育及び研究分野の人材養成であり、近い将来設立が予定されている地方の2医科大学のスタッフも本大学から供給されることが期待されている。

現在、Central Research Laboratoryと7つの教室(眼耳鼻、病理、内科、産婦人科、小児、外科、放射線科)を持つ。

タイ国医科大学の入学試験は、全国一律で行ない、その中の最優秀約60名が本大学に入学しており、本大学にかける期待の大きさが、ここにも現われている。

外国から援助としては、日本(OTCA)、上述のロックフェラー財団以外に、China Medical Boardが知られている。

現在、日本は、本大学の眼科部門と病理部門に対し、協力を行なっているが、大学の受入体制から見て、この2部門への協力は、引きつづき、もっとも効果的と考えられる。

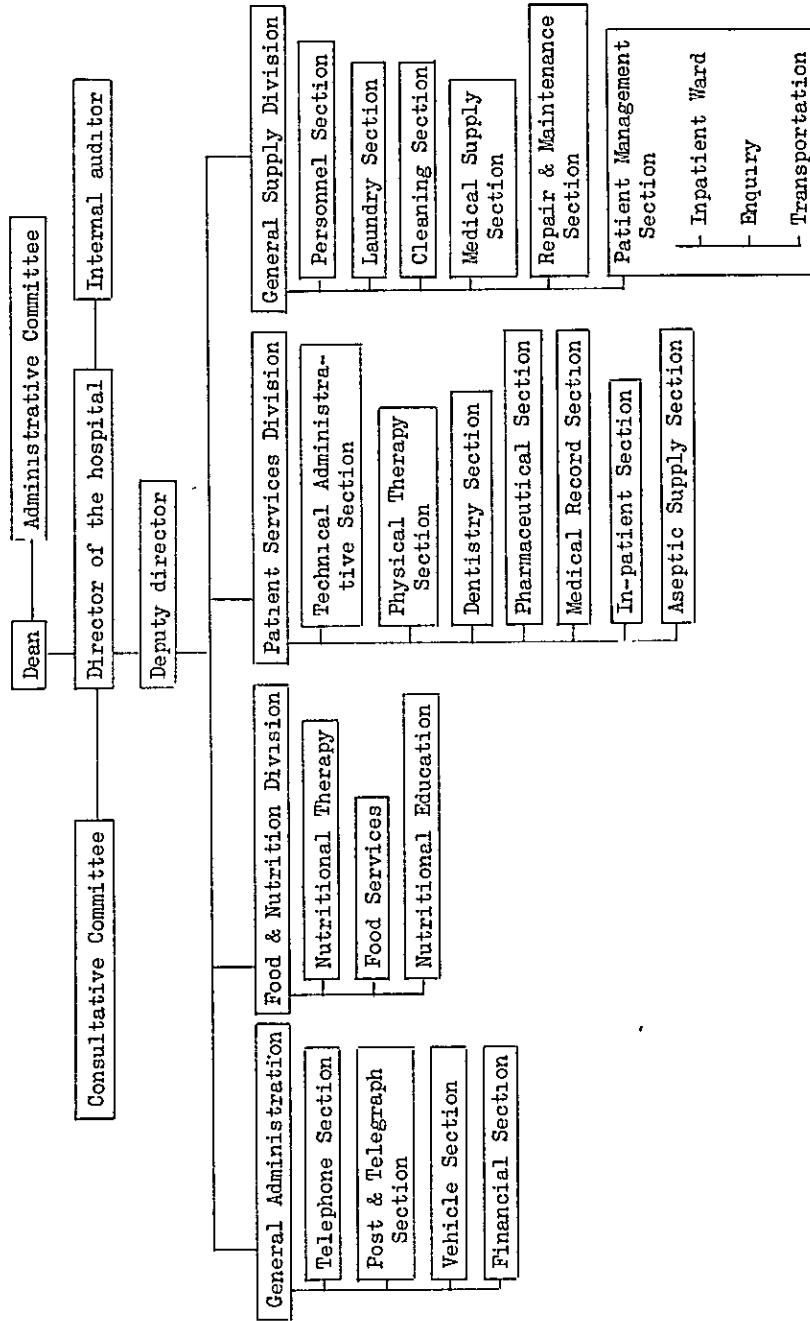
今回の調査団に対し、Mahidol Univ学長からも、引きつづきこの2部門に対し、重点的に、日本からの協力が得られるよう要請があった。

5. ラマチボデイ大学病院眼耳鼻科部門に対する協力および経緯について

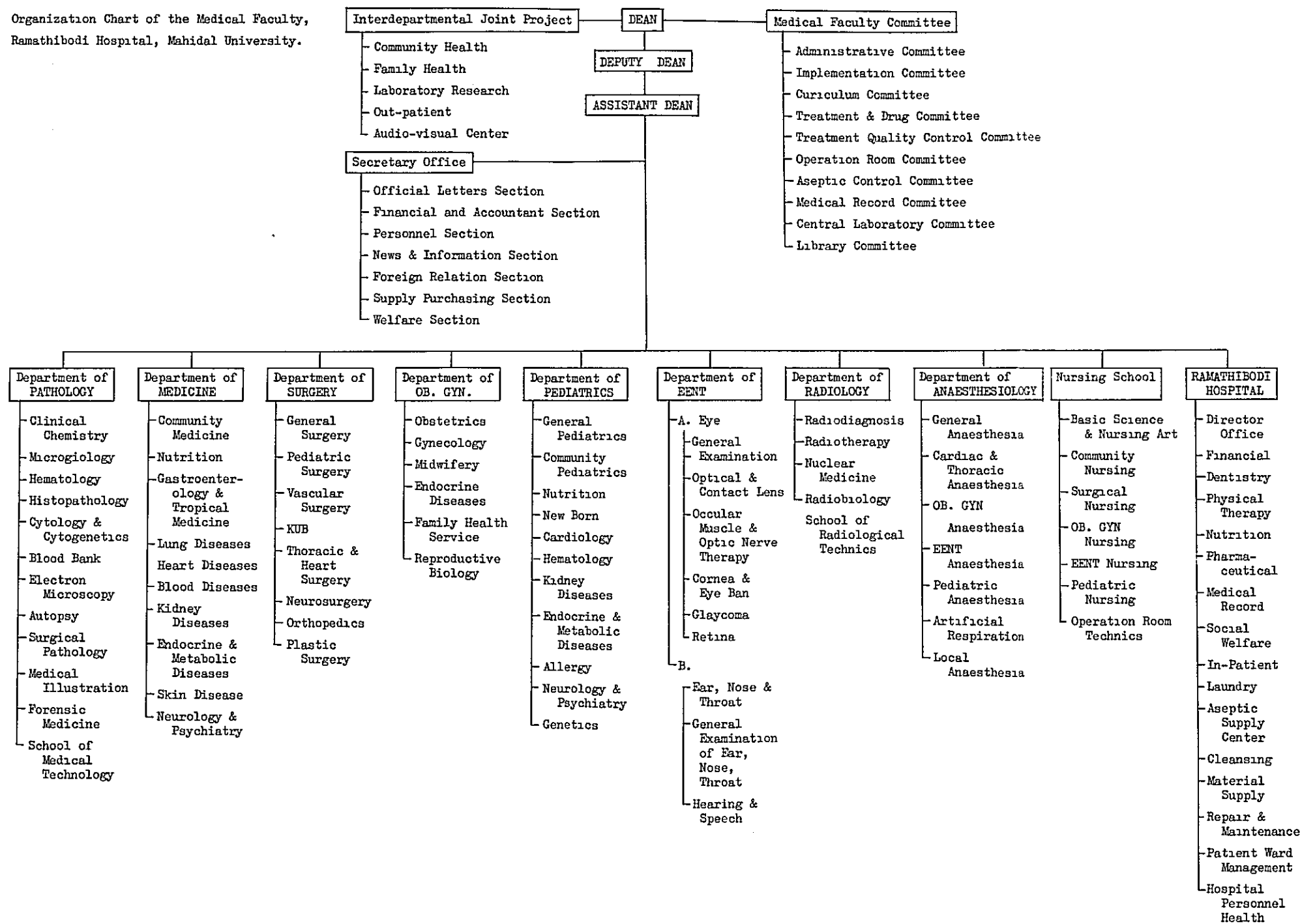
ラマ大学病院眼耳鼻科に対するOTCAの正式の協力は1968年4月入局一年のResidents 4名を受入れる事から始まっているが、正式の協力が始まる迄に下記の様な準備交渉があった。

- (1) 現在の眼耳鼻科部門の主任であるDr. Uthai がラマ大学病院設立準備の世界視察の途中日本を訪れ、Dr. UthaiのSriraj 医大の後輩で当時順天堂大眼科医局長紺山和一、及び中島章教授に会い協力及び助言を依頼した。
- (2) DTETC次長Xuchart がその後来日の折、紺山氏及び中島氏と会い、Dr. Uthaiに

Organization Chart of the Ramathibodi Hospital
April 1st, 1969



Organization Chart of the Medical Faculty,
Ramathibodi Hospital, Mahidal University.



対する協力の可能性につき、話し合った。

(3) 紺山氏が1967-1、OTCAよりタイ国ブリラムへ派遣診療団員として出発

(4) 1967年10月中島氏が海外出張の帰途バンコックに立寄り、Xuchart次長 Dr Uthai, 紺山氏等とラマ大の協力計画を相談した。

(5) Dr. Uthai がタイ政府から派遣されて同年11月来日、OTCA理事長、小川医療協力室長等に会い一方当時東京で開かれていた臨床眼科学会に集った全国の眼科教授有志と11月9日学士会館にて協力の具体案につき意見を交換した。これで下準備は完了した。OTCA理事長より日本眼科学会理事長に、本件に対する学会の協力要請の手紙が出され、これを受けて日眼評議員会で本件に協力する決定が行われた。

2. 協力計画の実施

2-1 レジデントの受入れ

1968年4月より1969年3月迄、4名の一年目レジデントを、1969年7月より1970年3月迄同様に4名の一年目レジデントを受入れ、基礎眼科学の教育を別紙の計画に従って実施した。

1970年度は1名について同様の教育を実施の予定で準備を進めたが、OTCAの内部事情の為に実施不可能となった。初年度は、基礎眼科学に専門分野を持ち、海外で研究活動を行った経験の有する指導者のある大学眼科10ヶ所を選んで教育を依頼した。受講した4名の内現在1名が教室を去り、他の3名の内2名が在局、1名はカナダに小児眼科の訓練を受けに派遣されている。次年度は初年度の内受講者の経験等を考慮して更に依頼する場所の数を減らし、一ヶ所での期間を延ばす様な計画が立てられた。これら4名は現在ラマ医大に在局中で臨床研修を続けており、日本で修得した基礎眼科学の技術が生かされて、或はその可能性のあるもの（蛍光眼底写真、臨床電気生理、病理など）が多い。この計画は以後数年間続行して欲しいと云う希望がタイ側から出されて居る。当初の計画によれば、タイ側に専門家が育って、自前で教育が可能になる迄と云う事であったが、今後2年で当初の目標の約半分が達せられる様子である。

2-2 専門家の派遣

1968年当時ラマ医大病院は建設中であり、開院式は1969年5月3日、皇帝をお迎えして行われた。1968年度にBuriramでの任務を終えて帰国した紺山和一氏及び東北大学より推センされた福士克氏を1969年度より派遣する決定がなされ、両名は1968年度に来日中のレジデント教育に参加した。1969年2月福士氏は2週間バンコックに派遣され業務打合せ等事前調査を行った。紺山氏はブリラム在任中よりラマ大学と常時連絡し、業務計画の打合せを行って居り、帰国後もその準備は続けられた。

1969年3月福士氏が、同5月紺山氏がラマ大学に赴任した。福士氏は1970年9月任務を終えて帰国し、現在紺山氏が1971年10月迄の任期で業務を続行中である。

福士氏は眼科生化学研究部門の設営を目的として一年半にわたり業務を行った。即ちOTCAより供与された器材を用い、タイ側技術員一名の協力を得て同地で入手可能な水牛の眼球約1,000個から角膜、水晶体の境界膜を分離し、その多糖類や蛋白の分析、構造決定を行った。このように、タイ国に於いて先駆的な眼の生化学的研究が可能である事を自ら示した意義は大きい。しかし、眼科部門のスタッフ、及びレジデントにはこの事が必ずしも理解されず、器材設備も一科で引き継ぐのは不可能であった。これらの器材の研究的価値は、小児科、内科或は生化学で良く知られ、現在中央研究施設に引き継がれて、ホルモンの研究、栄養障害の研究等に役立って居る。当初の眼科生化学部門の設立の目的は必ずしも達せられていないが、ラマ医大全体としての研究能力を向上させる上に大きく貢献した点を評価すべきであろう。また、これらの器材は眼科から中央研究施設に貸し出された形であり、将来眼科生化学部門の研究者が育った場合、これらの器材を利用出来るようになっている。

紺山氏は屈折、コンタクトレンズ外来を整備した他、眼科診療、運営全般についてDr. Uthaiを助けて居る。

その他、ロックフェラー財団より、年間四百万バーツ(約8,000万円)の補助を受けて進行中の、Bang pa-inに於けるフィールドワークに参加し、タイ国の医療の基礎資料をつくる作業に従事して居る。

1970年初めより、視能訓練士の養成を初めてタイ国で行うこととなり、川村緑氏が同年1月から派遣されて、ラマ大学のみならず、他大学より依頼された技術員を含め十数名に対する教育を行った。OTCAの内部事情による必要器材の入手不能と云う極めて困難な条件にもかかわらず、教育は軌道に乗り、1970年12月川村氏は帰国し、寺門律子氏が1971年1月から交代して6ヶ月の予定で赴任した。6ヶ月以降、タイ側によって教育が続行される体制になる予定である。

中島氏は1969年12月同大に派遣され、10日間にわたり、協力の状況を視察、眼科学最近の進歩に関して3回にわたり講義を行い、今後の協力計画につき協議を行った。

3. 今後の協力計画

3-1 1970年度実施予定であったもの

イ 眼病理センター、臨床病理学講師であるDr. Vichitrが病理学教室の施設を用いて眼病理標本をつくり、眼耳鼻科内にセンターをつくって保存、教育にも用い得るようになる。

ロ 電気生理学的臨床検査部門の設立

1969年度レジデントのDr. Noparatが電気生理部門を運営することとなり、その為の訓練を受けて帰国、現在中央研究施設内にこの為の部屋の工事中である。

ハ 暗順応計、栄養障害、殊に Vit. A 欠乏症の診断に必要

ニ 緑内障クリニックの設立、この為、スタッフの一人である。Dr. Thonchaiを日本に招待し、日本の緑内障研究者と打合せ、知識の交換を行う。

ホ 小児眼科並に視能訓練士教育の為の器材

3-2 1971年以降の計画

イ) Dr. Uthai並に講師Dr Charimet Kanchanaramya は網膜疾患が専門であり、網膜剥離的来を運営する為の光凝固器

ロ) 顕微鏡手術を行う為の設備

ハ) 網膜クリニック主任の日本への招待

ニ) 看護婦及び視能訓練士の日本に於ける短期間の訓練

以上がタイ側から、レジデントに対する基礎眼科学の訓練に加えて要請されている。

4. 計画完了の見通し

協力計画3年目を完了した段階で、1) 屈折クリニック、コンタクトレンズクリニック、2) 小児眼科 3) 眼底蛍光写真及び眼底写真が、一般外来入院診療に加えて機能して居り、1971年度中に更に4) 緑内障 5) 電気生理学的診療部門、6) 眼病理学センター、が発足1971年度から1972年度にかけて7) 網膜剥離、8) 顕微鏡手術が軌道にのり、機能的にも此の国の眼科センターとして一応の水準に達するものと考えられる。この様な水準の高いセンターの存在は此の国の眼科診療の中心として、また地方病院眼科医教育の中心として、極めて高い意義を持つものと考えられる。また、この様なセンターの存在は東南アジア地域の眼科医療、失明予防に極めて重要な役割を占め得るものと考えられる。

この点はタイ側に於いても良く認められて居るらしく、眼科診療に基本的な所要器材はタイの予算で整備されている様に見受けられた。尚タイでは眼・耳鼻科と両者が一つの部門になって居り、Dr Uthai は両者の主任である。眼耳鼻科の内耳鼻科部門に関する協力要請は1969年7月、Mahidol大学々長Dr Jaiaval Osa thanonond 氏の来日の際、その可能性につきOTCA、日本耳鼻科学会と打合せがあった。耳鼻科学会理事白岩教授(東京医大)はその可能性につき耳鼻科学会理事会で討議し、OTCAより協力要請があれば協力するとの結論を得た。その後この問題は保留のまま、何等の決定に至っていない。

Schedule of First year education on basic ophthalmology
for residents at the Department of Ophthalmology,

Ramathibodi Medical School, Bangkok, Thailand (Prof. Uthai Putnan).
(by Japanese Government Aid Program (OTCA))

- 1) Name of residents: Dr. Dravit Kurakemamorn (male), Dr. Prangtong Sangkaglishna (f), Dr. Arporn Prompitak (f), Dr. Puangtong Rooswasdi (f)
- 2) Textbook used: Adler: Textbook of Ophthalmology
Davson: Physiology of the Eye
- 3) Schedule of training:
 - 4-10: Arrived in Tokyo.
 - 4-11 -- 4-24: Orientation at TIC (Tokyo International Centre) by OTCA.
 - 4-25 -- 5- 7: Nihon Kohden Co. Instruction and Training on Medical Electronics.
 - 5-13 -- 5-25: Department of Applied Physics, Faculty of Technology, Waseda University. Measurement of the Contrast Transfer Function of the Eye, Instruction and Experiment on basic techniques in optics.
 - 5-27 -- 5-31: Toshiba Co. Central Research Laboratory and Laboratory of Illumination Engineering. Measurement of light and colour. Lecture and practice.
 - 6- 3 -- 7-13: Department of Ophthalmology, Tohoku University School of Medicine. Biochemistry of the eye, bacteriology of the eye.
 - 7-15 -- 8- 3: Department of Ophthalmology, Fukushima University School of Medicine. Ophthalmic Instruments.
 - 8- 5 -- 8-12: Institute of Public Health, Tokyo. Department of Epidemiology. Methods of Epidemiology, Demography, Family Planning, Visits to Health Centres and Pharmaceutical Companies.
 - 8-16 -- 8-22: Department of Ophthalmology, Juntendo University. Fundus Examination, Fundus Camera, Measurement of Refraction and Refractive Elements.
 - 8-23 -- 8-24: Nihon Kohgaku Co. Visit to Spectacle Lens Factory.
 - 8-26 -- 9- 7: Department of Ophthalmology, University of Tokyo Medical School. Electron Microscopy, Neuro-ophthalmology, Squint.
 - 9- 9 -- 9-30: Department of Ophthalmology, Nagoya City University. Biochemistry and Physiology of the retina.
 - 10- 1 -- 10- 4: Department of Zoology, Faculty of Science, Nagoya University. Embryology of the Eye.

- 10- 7 -- 10-11: Institute of Environmental Medicine, Nagoya University.
Visual Physiology.
- 10-14 -- 10-18: Institute of Environmental Medicine, Nagoya University.
Experimental Teratology related to the Eye.
- 10-20 -- 11- 9: Department of Ophthalmology, Tokushima University School
of Medicine. Virology and Bacteriology of the Eye,
Tissue Culture.
- 11-11 -- 11-30: Department of Ophthalmology, Osaka University School of
Medicine. Biochemistry and Physiology of the Cornea, etc.
- 12- 1 -- 3-31
(1969) To be decided in Tokyo.

海外技術協力事業団(OTCA)の依頼による
タイ国ラマチボデイ大学眼科、レジデント
に対する教育経過報告

1. タイ国ラマチボデイ大学眼科に対する援助はOTCAより日本眼科学会への要請に基づき1968年以来行われて居る。(1968-2~)
2. 現在、紺山和一氏、福士克氏が眼科医として川村緑氏(1969-3~)が一視能訓練士として同教室にOTCAより派遣され、教室づくりを手伝っている。
3. 1968年に引続き1969年度次の5名が来日、1969-7-14から1970-3-30迄下記のスケジュールで教育が行われた。

人員5名 ①PRINYA TANSAYNI ②TIAM LAKANAPICHONGHAT ③APIWAT PRECHANOND ④NOPARAT SUJARITCHAN ⑤SKOWRAHT KONGSOMJIT

- 経過 14/7-19/7 : OTCAにてオリエンテーション
21/7-2/8 : 順天堂大学
4/8-16/8 : 日本光電工業(株)研修センター
18/8-12/9 : 名古屋市立大学
14/9-26/9 : 名大環研
29/9-26/10 : 阪大
27/10-22/11 : 徳島大
24/11-20/3 : PRINYA、およびAPIWATは順天堂、TIAMは日本駿河台、
NOPARAT及びSKOWRAHTは東大にて教育
28/3-30/3 : 神戸大学
30/3 : 帰国
4. 1970年度の計画は未定である

6. GENERAL POLICY AND OBJECTIVE

DEPARTMENT OF OPHTHALMOLOGY, RAMATHIBODI HOSPITAL

Background The Department of Ophthalmology, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, started functioning in 1969 with the aims to:

1. Provide the best possible education in ophthalmology.
2. Produce qualified ophthalmologists for provincial hospitals and future medical schools as a step to remedy the country's serious shortage of ophthalmologists.

Organization Chairman of the Department

Department Committee

Education

Research &
Laboratory

Service
(specialty division)

Line of Responsibility

Chairman of the Department

Chief of Divisions

Assistant Chief and Staff Members

Senior Residents and Residents

Interns

Full-time Staff Members

Specialty Divisions

	Number	
	minimum	preferred
1. Anterior Segment Surgery and Cataract	1	4
2. Posterior Segment Surgery and Retine	1	3
3. Glaucoma	1	3
4. Refraction	1	4
5. Pediatric Ophthalmology	1	2
6. Cornea	1	3
7. Uveitis and External Diseases	1	2
8. Ophthalmic Pathology and Laboratory	1	2
	<hr/> 8	<hr/> 23

Residents

	Number	
	minimum	preferred
First Year	4	6
Second Year	4	6
Third Year	4	6
	<hr/>	<hr/>
	12	18
	<hr/>	<hr/>

Rotating Interns

8 per rotation, 6 rotations per year

Technicians

	Number	
	minimum	preferred
Optometrist	1	2
Optician	1	3
Orthoptist	1	3
Technician for eye pathology and laboratory	1	3
Technician for research	as necessary	

Teaching

Medical Students

Basic knowledge studied by medical students during the previous years is applied to the understanding of ophthalmology. The conditions of the eye as diagnostic help in general medicine including the use of essential instruments such as ophthalmoscope and perimeter is instructed to a reasonable proficiency in evaluation of medical conditions. Methods of investigation leading to the understanding of common eye diseases and their management are emphasized.

Residents

The basic science course, comparable to the Home Study Course in Ophthalmology of the American Academy of Ophthalmology, and the clinical course in ophthalmology are on the curriculum for the first year residents. The second year residents are to concentrate on the application of what they had learnt from the above courses. Though this is to be done under supervision, the residents are given certain responsibilities for the patients assigned. The third year residents are to assume up to full responsibility for their patients. They are also to take part in the activities of specialty divisions

and research, and given the responsibility of arranging and participating in routine scientific activities.

Research

Clinical and basic research are to be performed under individual staff members according to their talent and interest. The primary object is to solve problems we are facing in this country in the field of Ophthalmology.

Service

The eye clinic is divided into two main parts: the out-patient division and the specialties division. The former deals with all first-visit patients. Patients with external diseases of the eye receive their treatment and follow up in this division, while those with intraocular and intraorbital diseases are classified and sent to the specialty division which is subdivided into seven parts, each dealing with a special branch of eye problem.

Approximately forty-five service and private beds and three operating rooms are available for in-patients.

Policy

During the first five years, efforts will be mainly directed towards perfecting our function as an eye department. It is considered important that the Department should start with a well-organized group of teaching staff numbers, and equipped with standard equipments.

DATA OF PRESENT ACTIVITIES

Besides being involved with the daily routines of teaching and giving services to the patients, the Department is striving to make its routines and extra activities as scientifically attractive as possible. This is partly aimed at attracting the interest of medical students to this field. In this way, the Department would have a wide choice of young doctors for selection as residents. On graduation from residency training, the Department would pick the most promising graduate for a teaching staff position, while the rest would answer the great need of the Thai community for eye doctors.

Films on ophthalmic surgical technique are regularly borrowed from a medical film library in the United States to show to staff members, residents and medical students.

Well-known foreign ophthalmologists visiting Bangkok are always invited to talk on their specialties.

Weekly meetings of teaching staff and residents are held to discuss interesting ophthalmic cases encountered during the week.

With the aids from O.T.C.A., the Department is in the course of establishing several subspecialty units and laboratories, and putting them to full use in teaching, diagnosis and treatment of patients.

Teaching Staff Members

	Number
Ophthalmologists	3
Optometrist	1
Orthoptist	1
Residents	7
O.T.C.A. Experts	2

<u>Education</u>	<u>Year</u>	<u>Lecture Hours</u>	<u>Practice Hours</u>
Medical students	4th	1	2
" "	5th	12	6 months*
Intern (elective)			6 weeks
Residents	1st	180	9 months
"	2nd	384**	12 months
"	3rd	384**	12 months
Ophthalmic			
Technical Course	-	582	6 months
Intensive Graduate			
Course in Ophthalmology	-	18	2 weeks
for Provincial Doctors***			

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* including 132 hours of small group lecture and 96 hours of discussion and bed-side teaching.

** lectures, journal clubs, and case presentation.

*** as a part of six weeks course organized by The Thai Ophthalmological Society.

Service

<u>Type of Service</u>	<u>Number of Patients per Day</u>
O.P.D.	40 - 120
Inpatients	25 - 30
Major Operation	4 - 10
Orthoptic	2 - 6
Refraction	4 - 15
Fundus Photography & F.F.A.	2 - 8****

Research

1) Refractive Error in Thai Population	}	Dr. Kazuichi Konyama
2) Trachoma Survey in Thai Population		
3) Survey of the Causes of Blindness in Thailand		
4) Haradas Disease in Thailand	}	Dr. Charimet Karnchanaranya
5) Intraocular Astrongilus Cantonesis		
6) Sugar Content in Different Layers of the Cornea		Dr. Sukuru Fukushi

Annual Budget

<u>Year</u>	<u>Instruments & Equipment</u>	<u>Furniture</u>	<u>Running Expenses</u>
1968	\$ 87,432	\$ 2,959	\$ 650.40
1969	\$ 53,104	\$ 4,380	\$ 1,686
1970	\$ 23,495	\$ 1,503	\$ 2,749
1971	\$ 48,460	\$ 1,048	\$ 2,571

D.E.T.C. Budget for O.T.C.A. Aids

<u>Year</u>	<u>Expenses of Experts</u>	<u>Expenses for Adaptation of Rooms for Donated Instruments and other necessary equipment</u>
1969	\$ 3,395	\$ 757
1970	\$ 11,423	\$ 24,508
1971	\$ 7,641	-

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**** Per week.

ACTIVITIES UNDER JAPANESE-THAI CO-OPERATION

Residency Training Program:

Of residency training programs in ophthalmology so far organized by medical schools in Thailand, none have included the basic science course in ophthalmology in their curriculum, due to shortage of teaching personnel and facilities. The residency graduates of such training are mostly unable to solve complex eye problems and fail to attain good practice in ophthalmology to earn a living. Most of them finally become general practitioner.

With this problem in mind, the Department of Ophthalmology Ramathibodi Hospital, tried to add the basic science aspect to its residency curriculum by enlisting the aids of several eye institutes in Japan through the O.T.C.A. In 1968, four first year residents were sent to Japan for twelve months basic science studies under the auspices of the O.T.C.A. After a short period of orientation, they were assigned to study at various universities and eye institutes in Japan under the arrangement and supervision of Prof. A. Nakajima.

In 1969, the Department of Ophthalmology, Ramathibodi Hospital, organized an intensive course of basic science in ophthalmology among teaching staff members of the three medical schools in Bangkok. This course was only sufficient for giving mainly dry lectures, reviews of some of the more important points, and broad covering of the whole field of ophthalmic studies so that the residents are well prepared to do more detailed and complicated studies when they subsequently study in Japan, the duration of which is reduced to nine months. Five first year residents underwent this course before proceeding to Japan. They were reported to be more proficient than the 1968 group.

In 1970, the Department unfortunately had only one first year resident, and he failed to pass the intensive basic science course in Thailand. It was decided not to send him to Japan for the 9-months studies.

In 1971, request is being made to the O.T.C.A. as in previous years for four scholarships for first year residents to do basic studies for nine months in Japan.

Refraction Clinic:

The Refraction Clinic is organized and run by Dr. Kazuichi Konyama, assistant professor, Juntendo University, an O.T.C.A. expert. It opened in 1969 soon after his arrival in Bangkok in March 1969. The \$3,220's worth of equipment in addition to those provided by the Thai Government was donated by

the O.T.C.A. The refraction Clinic's patients increased from a few per day at the beginning to four to fifteen per day at present. In 1970, Miss Premvadee Ratanasirintraooot, O.D., a graduate of the school of Optometry, Indiana University, U.S.A., joined Dr. Konyama in running this clinic as the Thai counterpart personnel.

Biochemistry Unit:

This unit was set up with the purpose of conducting research activities in ophthalmic biochemistry and of establishing teaching facilities and personnel for basic science in Ophthalmology. It was organized by Dr. Sukuru Fukushi, assistant professor at Tohoku University, Sendai, Japan, who was invited by the Department of Ophthalmology, Ramathibodi Hospital, through the O.T.C.A. Dr. Fukushi had been actively engaged in ophthalmic biochemistry at Tohoku University. He had three years' training in the field at two leading institutes in the United States between 1969 and 1970.

Ophthalmic Biochemistry Unit of \$24,000.- worth was set up by Dr. Fukushi in February 1969 as planned. The sugar content in different layers of cornea was analysed. He returned to Japan in August 1970.

However, Dr. Fukushi failed to apply the clinical usefulness of biochemistry and to spend one third of his time in clinical work as he had agreed to do when he accepted the invitation. His personality was not agreeable to most of the members of the Department. This, together with the fact that there is a general lack of interest in ophthalmic biochemistry among Thai ophthalmologists, caused a failure to find a counterpart to take over this unit after he left. The Ophthalmic Biochemistry Unit was then borrowed by the Central Research Laboratory of the same hospital until the Department of Phthalmology could run it.

Orthoptic Clinic:

Miss Midori Kawamura, an O.T.C.A. expert, worked at the Department from March 1970 to December 1970 as advisor to Mrs. Orasa Karnchanaranya, orthoptician, in operating the \$625.73's worth of new equipment supplied by the O.T.C.A.

Fundus Fluorescine Angiography and Fundus Photography Unit:

This unit of \$3,000 worth was set up by Dr. Kazuichi Konyama with the assistance of Dr. Thiem Lakanapichonchat, our second year resident who was assigned the study of this subject in his free time during his basic science studies in Japan. The Unit carries out research on the function of retinal

vessels, take pictures of pathologic lesions in the fundus, and also assist in diagnostic activities. At present, this unit is run by Dr. Thiem under the guidance of Dr. Konyama.

Contact Lens Clinic:

This unit starts functioning partially at the end of 1969 under Dr. Kazuichi Konyama. It was not in full operation until January 1971 due to the delay in delivery of equipment from O.T.C.A. The total of \$350 worth equipment was donated.

Contributions of O.T.C.A. Experts

Beside setting up and running the mentioned units, the O.T.C.A. experts have also contributed to other activities of the Department:

Dr. Kazuichi Konyama - This O.T.C.A. expert also perform the duties of a member of the teaching staff as follows:

- With two residents under his instruction, he is actively responsible for one O.P.D. session and two sessions of major operations per week, care of inpatients admitted by his group, and instructing the two residents.
- He is responsible for teaching the medical students, intern and residents the subjects of Refraction and Contact Lens, Eye Emergency, and Optics, both in theory and in practice.
- He organized and run one-year full-time course for ophthalmic with the help of Miss Kawamura. The number of students is 15 per course. This program is designed with the problem of shortage of ophthalmologists and nurses in mind. The students of this course are secondary school graduates. At the end of the course, they are able to perform simple routine procedures for the doctors such as ophthalmic photography, field of vision, simple refraction and orthoptics etc. Five of the fifteen students are Ramathibodi employees, the rest are technicians from the department of ophthalmology of various hospital in Bangkok such as Chulalongkorn Hospital, Vajira Metropolitan Hospital, Police Hospital etc.
- Dr. Konyama also acted as the representative of the Department participating in the rural health project of the Ramathibodi at Bang-pa-in. He spent one day a week at Bang-pa-in for a period of two months.

- He was the Acting Chairman of the Department of Ophthalmology for three months during the chairman's absence. At present, his administrative duty is the assistant chairman of the Department.

Miss Mirori Kawamura - This O.T.C.A. expert assisted Dr. Konyama in organizing and running the ophthalmic technical course. She also instructed the students on the subject of orthoptics. Bang-pa-in rural health project was also a part of her activity.

Aids Requested in 1970 (not yet received)

1) Ophthalmic Pathology Unit. Aid requested for this unit, which is a joint effort between the Departments of Ophthalmology and Pathology of the Ramathibodi Hospital, are:

(1) a fund for Dr. Vijitr Boonpaknavik of the Department of Pathology to further his studies in Pathology in Japan.

(2) a set of instruments and equipments for the function of Ophthalmic pathology Unit and for teaching purposes.

2) Electro-physiology Unit. This unit will be used for diagnostic and clinical research purposes. It records the electrical charges from organs of the eye such as the extra ocular muscles and the retina. Dr. Ishigawa, assistant professor in ophthalmology of Tokyo University, has been requested to set up the unit when the instrument arrives.

3) Dark Adaptometer. Dark adaptation test is essential for diagnosis and follow up of certain diseases of the retina such as retinitis pigmentosa. This instrument is simple to operate and can be handled by any of the teaching staff members and residents.

4) Funds for the Department's glaucoma specialist, Dr. Thongchai Chatranonta, and two nurses - head of the inpatient unit and head of the operating rooms - to further their studies and broaden their perspective in Japan for approximately three months.

Aid Requests for 1971

1) Scholarship for four first year residents to study basic science course in ophthalmology at various universities in Japan for a period of nine months (July 1971 to March 1972).

2) A fund for a teaching staff member in the Department of Ophthalmology to study the diseases of the retina and Ophthalmic microsurgery at an ophthalmic institute in Japan for a period of three months.

3) Two funds for nurses or paramedical personnels to study ophthalmic

technology, pediatric ophthalmology and orthoptics.

4) Carl Zeiss Photocoagulator for use in prevention and treatment of retinal detachment and in vascular diseases of the retina such as diabetic retinopathy, costs approximately \$20,000.

5) Ophthalmic Microsurgery Unit to improve the intraocular surgical technique, costs approximately \$10,000.

7. ラマチボデイ大学医学部病理部門について

ラマチボデイ医学部の Department of Pathology (病理学教室) は7つの教室のうちの一つであり、他の6つの臨床教室にくらべて基礎研究的な部門や病院サービスの部門等次にのべたような多彩な機能を有する特殊な Department であり、日本の医科大学にある病理学教室とは異った体系をもっている。教室は病院内の一翼の1階より5階までを占め、主任教授は比較的若手の米国仕込みの Dr. Natth が就任し、教室を主催している。

教室機構は次の3部門に大別されている。1) 実験病理部門 (Experimental Pathology) 2) 人体病理学部門 (Human Pathology) 3) 臨床病理学部門 (Clinical Pathology)。一つの教室内にこの3部門を構成することは従来のわが国の病理学教室からみれば珍しい事であるが、一応ラマチボデイ病院の近代性と特殊性として理解することができる。どの部門も医師及び医療補助者の技術上の質の向上、訓練を行い将来のタイ国内の国立医科大学の病理部門の指導者養成を第一義的な目的としている。

O T C A による援助計画の発端は Dr. Natth と阪大病理の宮地徹教授が1962年に希望をのべ合ったことから始まる。具体的には日本からラマチボデイ病院の Dr. Natth の教室へ日本から訪問教授を派遣することの要請が1968年になされ、和歌山医大の宮地秀樹助教授によって1969年2月に2週間にわたる事前調査にかかる訪タイが行われた。次いで1969年12月から1970年8月の間同助教授が専門家としてラマチボデイ医大派遣がなされ、この間に同病院病理学教室内の実験病理部門を開院する議が Dr. Natth との間になされて、次いで1970年10月に後任者として阪大病理の宮本氏が実験病理の専門家として派遣されて現在に至っている。この間の事情は O T C A 海外事業部医療協力室発行の1970年5月刊行にかかる宮地助教授の報告書にその一部が記載されている。

それらの話し合いで O T C A から現在までに協力された器資材の主なものは純系マウス(宮本専門家の実験用)、中型電子顕微鏡一基等である。電子顕微鏡は現在到着したばかりであるが実験室の改造は進行中である。

1. 実験病理部門：これは医学部を卒業した者のレベルに於ける教育コースとして設定され、2年間の実験にたづさわった後にマスターオブサイエンス (M. S. in Experimental Pathology) の称号が与えられる。教育の目的は Associate Teacher 又は Research Pathologist を養成することである。1969年以来5人の学生が実験にたづさわっている。(歯科医出身、薬剤師(電顕技術要員)、獣医師など)。Dr. Natth の希望としては1970に要請した日本からの訪問教授はあまり短期間では効果が薄いので1人が1年以上はいてほしいということがあった。1971年度には電顕関係と短期訪問教授の一人として大西博士が派遣されることが希望されていたが、他に人体病理部門と関連して

免疫病理学及びオートラジオグラフィーの専門家の訪タイも要請されているとのことであった。将来実験病理を強化するための要員として現在米国諸大学で Ph. D. コース（病理）を学んでいるタイ出身者が5人居るので帰国後の協力を希望している。OTCA との関連におけるこの部門の将来計画は今回の合議記録（Gist of Discussion）にある通り、宮本専門家による長期研究指導（1971 まで）、および短期訪問教授（1971 年に2名、1972 年度に2名）の派遣が主要なものであり、タイからも日本へ研修生の派遣（1971 年に3名、1972 年に4名）が望まれている。

器資材としては既に到着している電子顕微鏡および純系動物のほかに、1970 年以来要請している実験用の冷凍装置等数点のものがあるが現在は未送であるが年度には積出す予定である。

- 2 人体病理学（Human Pathology）部門：これは従来の日本に於けるいわゆる病理学の部門であり、Dr. Natth によれば現在約100の Provincial hospital が全タイにあるが、その中でこの病理学者が僅か2-3名しかおらず、緊急の養成を望まれている部門である。

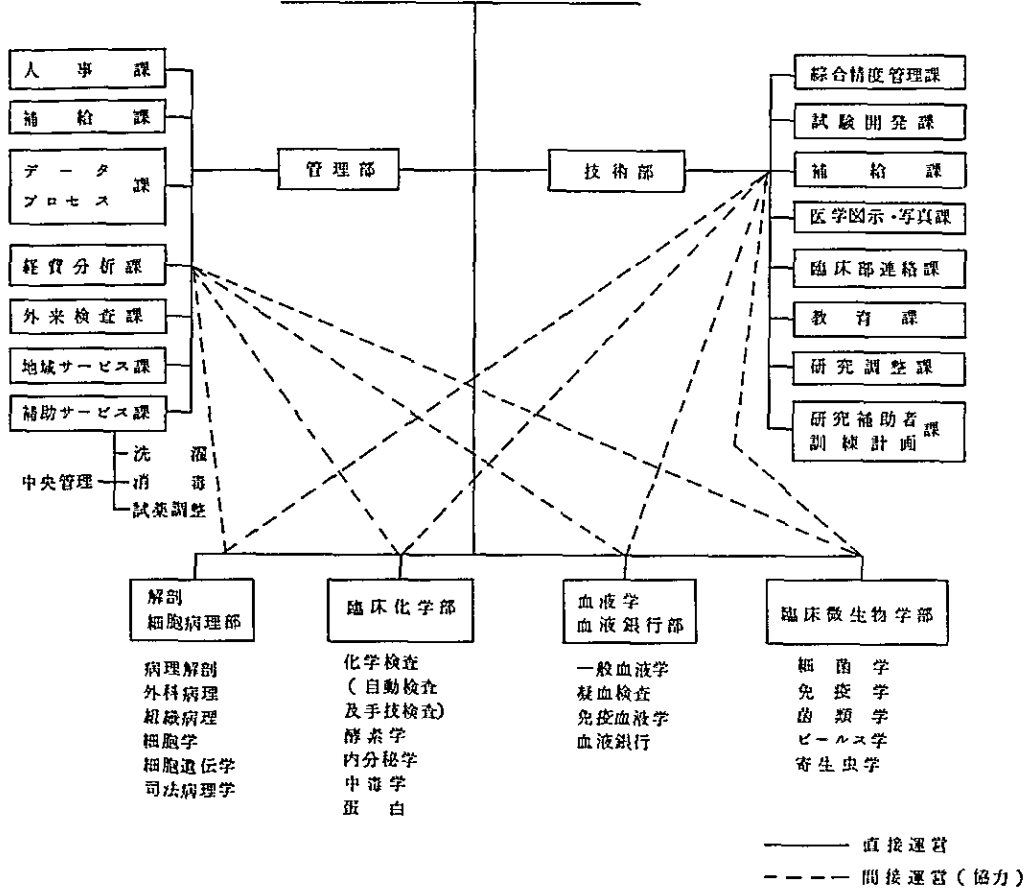
病理専門者は認定された病院で3年間訓練をうけて資格がとれるのであるが、1968 年以来タイから20名の専門家が自国で働くのをきらって、給料のよい米国へ行ってしまっている。Dr. Natth としてはどうしてもこの部門を強化したく、1972 年までには肝、腎、脳、婦人科関係等の病理分野を強化し、更に新開発分野として眼科病理学、悪性新生物、胃腸関係を加えたい考えである。

研究別にみると、前述の電子顕微鏡は主としてこの分野で使用することになり、免疫病理も Dr. Songsee のもとで準備中である。オートラジオグラフィーに関してはタイからはすでに技術者を日本の微研に派遣して訓練中である（OTCA）。組織のラジオオートグラフィーに関してはその実施はやゝ延期される模様である。組織培養分野は Dr. Anog がインドから最近帰ってきて準備完了している。

- 3 臨床病理学（Clinical Pathology）部門の全タイ中の約100の病院で働く medical technologist（病理検査技師）を養成する部門でラマチボデイ病院の臨床病理検査及び近郊の病院から依頼の試料の検査を日常の業務としている。この技術者は4年コースを終了した B. S.（Bachelor of Science）の者を更にこの業務において訓練し M. S. in Clinical Pathology として資格を与える。1971 年は10人の卒業訓練生をとりたい考えである。将来の OTCA との関連はこの部門の発展のために光電比色計とか PH メーター等の臨床病理検査用の機械がほしいという希望も述べられた。

ラマチボデイ病理の最も重要な、最も Priority の高いものは Clinical Pathology であり、病院管理組織の中でも Multidisciplinary Laboratory として存在している。Dr. Natth によって提示された Clinical Pathology 部門の中央化組織は次の通りである。

ラマチボデイ病院院理学教室
臨床病理部門組織図



以上の基本的な病理教室の三部門のほか Dr. Natth によって説明された環境病理学 (Environmental Pathology) の将来の研究分野は次の通りである。これは組織上の部門でなく研究機能上の研究題目である。

環境病理学：

1. 栄養に関するもの：(1)母子衛生上チエンマイ地区に多発している問題になっている蛋白不足を主因とするクワシオコール病の基礎および臨床研究。
(2) 肝疾患研究—肝硬変およびヘパトマ、および黄疽性肝炎等がタイ国で問題になっている。
2. マイコトキシン、アスペルギルス、等に関する研究。
3. デング熱、出血熱、等の研究。これには上述の電子顕微鏡、免疫病理等の施設が利用可能である。

このほか甲状腺腫、アフラトキシンの研究等が計画されている。

Dr. Natth によって提出されたラマチボデイ病理学教室に関する日タイ協力計画の

Progress Report：

首題の件に関し Dr. Natth が日タイ会議で討議を円滑にするために提出した Progress Report は病理学教室の歴史、OTCA との関連、将来計画現在人員構成表等詳細に記載されており、以下にその全文を原語のまま再録する。

8. PROGRESS REPORT
JAPANESE THAI MEDICAL COOPERATION IN PATHOLOGY
FEBRUARY 1971

Background

At present there is a severe shortage of basic medical scientists especially pathologists in Thailand. The shortage of basic medical scientists in the following specialties Anatomy, Physiology, Biochemistry, Pharmacology and Microbiology, are being remedied by providing graduate training programs leading to M.S. or Ph.D. degrees to young University graduates in Sciences (in Biology, Pharmacy, Chemistry etc.) with fair success. In pathology, however, the situation is still critical. Out of some three hundred graduates of the four medical schools in Thailand, very few choose pathology as their career. This creates severe shortage of staff in the Department of Pathology of the existing medical schools, and will make it difficult to start new departments of Pathology in the two new provincial medical schools which are being planned. In addition, there is also a shortage of research pathologists, which are needed by several research institutions such as National Cancer Institute, Virus Institute, Nutrition laboratories, Food and drug control laboratories etc.

Out of some ninety hospitals in the provinces of Thailand, only 2 or 3 have pathologists. This situation discourages well trained clinicians from taking jobs in the provincial hospitals because of a lack of proper laboratory facilities.

It is apparent that a strong effort must be made to correct the shortage of pathologists in Thailand. Several measures can be taken. These include:

1. To recruit university graduates in fields related to medicine such as veterinary medicine, dentistry, pharmacy etc. to get advanced training in experimental pathology leading to M.S. or Ph.D. degrees similar to what is being done in other fields of basic Medical Science.

2. Ways must be found to recruit young physicians more effectively into pathology. This necessitates the improvement of the activities of the Department of Pathology in teaching, research and services, so that pathology will exert an intellectual attraction to the young physicians and medical students.

This approach has been strongly endorsed by Mahidol University.

The development of Japanese Thai Medical Cooperation in Pathology

A request for a short term visiting professor in Pathology from Japan was first made from Mahidol University through DTEC office of the Thai Government, to the OTCA office. This resulted in a visit by Dr. Hideki Miyaji, Assistant Professor of Pathology of Wakayama Medical College, during January 30 - February 12, 1969. In this period, besides Faculty of Medicine, Ramathibodi Hospital, Dr. Miyaji had the opportunity to visit the Department of Pathology of two other medical schools in Bangkok, the National Cancer Institute and the Virus Institute.

At the end of the visit, Dr. Miyaji and Dr. Natth Bhamaraprat, Chairman of the Department of Pathology of the Faculty of Medicine, Ramathibodi Hospital formulated a joint report on the implementation of Japanese Thai Medical Cooperation in Pathology for the purpose of developing and strengthening the research and training at future university teachers in pathology with the support of the Japanese Government. Experts in experimental pathology and human pathology will be sent from Japan to work with Thai pathologists in developing this program. The aim of the program should put equal emphasis on both training and research.

It was also agreed that the site where this program was to be implemented would be at the Department of Pathology located at the Faculty of Science as well as at the Faculty of Medicine, Ramathibodi Hospital. Both faculties are under Mahidol University. This location was appropriate because the Faculty of Science is the national center of the graduate training programs in Basic Medical Sciences (Anatomy, Physiology, Biochemistry etc.) to the level of M.S. or Ph.D. degrees in Thailand. The Faculty of Medicine, Ramathibodi Hospital is a new faculty and is very close to the National Cancer Institute and other research and medical institutions such as the Neurological Institute, Army Hospital, Women and Children Hospital, and Faculty of Tropical Medicine. All of these are in Pyathai district and lie within one or two blocks of streets from each other.

Implementation of the Medical Cooperative Project in Pathology

The medical Cooperative project in Pathology was started with the arrival of Dr. Hideki Miyaji for the second time in late December 1970, almost one year after his first visit. The main activities that were accomplished during the seven months that he stayed in Thailand were:

1. The renovation and improvement of the animal facilities. The whole

animal facilities of the Department of Pathology was modified according to Dr. Miyaji's suggestion. New equipments which included food preparation machine, cage sterilizer, air-conditioners for animal rooms, were installed. When the animal facilities were completed, the department was able to expand the breeding and holding facilities for monkeys, rabbits, rats, mice and guinea pigs about 300% of the previous existing facilities. Our chief of the animal facilities, Mr. Pongpan Kongtong, who was sent in 1969 to study animal care at the various institutes in Japan, was back in Thailand before Dr. Miyaji's second visit. He was able to learn more about animal care methods from Dr. Miyaji during this period.

2. The planning and development of electron microscopy laboratory.

Since electron microscopy is an important technique in experimental pathology. Dr. Miyaji helped in the planning of an electron microscopy laboratory in our department. He also prepared a request for equipments for this laboratory which included a medium sized electron microscope. It was agreed that a medium size machine may be appropriate for the present need of the Department and for the present level of research. The request was favourably approved by OTCA. The equipment just arrived in the middle of January 1971 and is now in the final stage of installation.

To prepare personnel for our EM. laboratory, we had sent an EM. operator, Miss Siriporn Sriurairatana to get further training in Japan at Biken Institute and at the Application Laboratory of Hitachi Co., for 8 months in 1968. Miss Siriporn is now studying for an M.S. degree in Experimental Pathology in our department. She is expected to receive her degree in May 1971 and would become Chief EM. Technologist for this laboratory.

Two of our pathologists, Dr. Vjitr Boonpaknavig and Dr. Sukhum Bunyaratvej had received advanced training in electron microscopy in the U.S.A. and are working on research projects on kidneys, liver and dengue hemorrhagic fever at present. Three other pathologists also are being trained in EM. technique abroad. It is expected that once the laboratory is operational, it would be fully utilised for both training and research in the near future.

3. Undergraduate and graduate teaching and research. Dr. Miyaji was actively involved in the teaching of pathology to the 2nd year medical students and to graduate students in Experimental Pathology. His main area of contribution was in experimental carcinogenesis of the liver. Two medical students did special research projects with Dr. Miyaji on experimental

gastric ulcer.

In addition, Dr. Miyaji also gave advice to two graduate students who were working on their research. The fact that Dr. Miyaji's tour of duty was only for six months, prevented him from taking an active role of a research supervisor of graduate students. Candidates for an M.S. degree in Experimental Pathology are expected to spend at least one year in full time research.

4. General activities. Dr. Miyaji participated fully in other activities of the department such as conferences, seminars, grand rounds etc. He also had made studies of liver cirrhosis and hepatoma and gastric ulcers in Thais and had given us some of his impression on the differences or similarities of the morphological changes of these conditions which may be worth a comparative study in depth in the future.

On the whole we feel that Dr. Miyaji's stay in our Department of Pathology, even though for a relatively short duration, has been most useful and productive and has paved the way for future cooperation.

Three months after Dr. Miyaji returned to Japan, his successor, Dr. Makoto Miyamoto from Osaka University, arrived on October 30th, 1970. Dr. Miyamoto has now been with us for 3 months and his contribution can be summarised as follows:

1. Further improvement of animal colonies. Dr. Miyamoto continues to improve the operation of the animal facilities particularly in the efficiency of breeding animals and by further training of Thai personnel.

2. Research Supervision of graduate students. Since Dr. Miyamoto will stay until November of 1971, he would be able to direct the research of at least 2 graduate students in Experimental Pathology to the conclusion. Two graduate students have been assigned to Dr. Miyamoto and they would begin active research work in March 1971 after they finish their required course work.

3. Course in experimental chemical carcinogenesis. A post graduate course in experimental carcinogenesis is scheduled to begin sometime in March and will run for about 8 weeks. This course will be organised by Dr. Miyamoto with the help of other pathologists in our department. The basic methodology in experimental chemical carcinogenesis will be covered.

4. Research. Dr. Miyamoto is actively conducting his own research in experimental choriocarcinoma, and testicular carcinoma in rats which he started before coming to Thailand.

5. Improvement of laboratory techniques in histopathology. Dr.

Miyamoto is working on the improvement in techniques in our histopathology laboratory in conjunction with our staffs mainly Dr. Vajitr and Mr. Manat, Chief histopathology technician.

6. General activities. Dr. Miyamoto is actively participating in the various activities of the department such as autopsy conference, histopathology conference, and seminars, as well as giving consultation on diagnostic problems in pathology to our staff.

Just a few days ago, a technician and a secretary have been assigned to work for Dr. Miyamoto. The salary of these two individuals are paid by DTEC of the Thai government.

In summary, two visiting pathologists from Japan have worked in the department for a cumulative period of 10 months. The first was here for 7 months and the second pathologist is completing his third month. We feel that this ten months only represent the initial starting and acquainting period and the real work will only begin from now on.

The Department of Pathology of Faculty of Medicine, Ramathibodi Hospital.

This is a new department which was officially started in late 1967. It has three major components, experimental pathology, human pathology and clinical pathology, which makes it rather different from other departments of pathology in Thailand, and to some extent, from those departments in Japan as well. It occupies one floor in the Faculty of Science (mainly for experimental pathology), and four floors at Ramathibodi Hospital, for a total floor area of about 4,000 m². It has at present 14 professional staff (M.D.s), 28 technical staffs with B.S. or M.S. degrees, 3 residents in Pathology (M.D.) and 10 graduate students working for M.S. degrees in experimental pathology (with degrees in dentistry or veterinary medicine). In human pathology service, the department performs annually some 240 autopsies, and examines 10,000 surgical specimens (40% sent from the provincial hospitals throughout Thailand). The clinical pathology service operates diagnostic laboratories in clinical chemistry, hematology, clinical microbiology, immunology, and blood bank. This service performs 500,000 diagnostic tests yearly for out patients and 300 beds in patients. It is expected that when Ramathibodi Hospital bed capacity reaches 600 beds in 1972, the clinical pathology service will perform about one million tests yearly. The department also operates a school of laboratory assistants which train high school

students for 12 months in clinical pathology technique. Twenty six laboratory assistants have been produced in the past two years and 15 new students are being trained.

At present our staffs are relatively young and inexperienced and it is hoped that visiting pathologists from Japan with expert knowledge in different areas will be able to help in the development of our staff further.

Future direction for Japanese Thai Medical Cooperation in Pathology.

It can be visualized that with the progress already made or being made in experimental pathology, the direction of medical cooperation should move toward strengthening human pathology and clinical pathology. While detailed planning is currently being discussed with Dr. Miyamoto and local OTCA officials and cannot be officially defined at present. From the Thai side, we would like to suggest that the following areas should receive immediate attention.

1. Electron Microscopy. With the complete installation of the electron microscopy laboratory, and the beginning of active training and research using this technology, short term visiting pathologist from Japan who has expert knowledge in electron microscopy will be needed to provide advice or even an advanced training for Thais. A visit of 4-6 months by one expert is being considered and we hope that this will receive favorable support.

2. Organization of special laboratory for experimental pathology work. At present our experimental pathology laboratory is equipped solely for morphological techniques. It is hoped that a laboratory which can perform tracer experiment with isotopes can be set up to support the morphological aspects of experimental pathology.

3. Eye Pathology. The development of eye pathology receives high priority as far as human pathology is concerned. This is because eye pathology is neglected in Thailand at present. The development of a good ophthalmology training program in our Ophthalmology Department, which is another Japanese Thai Medical Cooperative project, requires good eye pathology service for both training and research. It appears that contrary to the practice of placing eye pathology service in the Ophthalmology Department as in Japan, it may be better to organise eye pathology laboratory jointly between the Department of Pathology and Ophthalmology here. This is because of the present shortage of Thai ophthalmologists especially the ones who want to make eye pathology their area of special interest.

Dr. Vijitr Boonpaknavig, one of our senior staff member and who has had excellent background in general pathology is very much interested in developing eye pathology laboratory and we hope that a visit to several eye pathology laboratories in Japan can be arranged for him. Later a Japanese eye pathologist may be requested to come here to start the training of Thai pathologists and ophthalmologists.

4. Immunopathology. Immunopathology is one area in our department where work involves both experiments and application to human pathology are actively pursued. This laboratory is under the direction of Dr. Somnetr Boonpaknavig who is training one graduate student and another graduate student is expected to enter into this field shortly. A visit of 4-6 months by an immunopathologist from Japan will greatly help Dr. Somnetr in the development of her laboratory.

5. Clinical Pathology. Clinical pathology or the application of laboratory techniques to the practice of clinical medicine for diagnostic and therapeutic purposes, is poorly developed in Thailand. This has hampered the progress of clinical medicine in the hospitals in the provinces. The Department of Pathology is preparing a graduate training program leading toward M.S. degree in Clinical Pathology for university graduates in Sciences (non physician) to prepare them as laboratory supervisors in the provincial hospitals. This program is expected to start in June 1971. However the shortage of senior staffs in clinical pathology may delay the progress in this direction. An assistance in clinical pathology in term of personnels and equipments will be of tremendous help.

Planning and establishment of new provincial medical schools.

The Department of Pathology of this Faculty, through its chairman, Dr. Natth, is involved in the planning and establishment of two new provincial medical schools, one in the North East and one in the South to be established within the next five years. It is expected that new specialists in different areas of pathology; *Experimental Pathology, Human Pathology and Clinical Pathology*, which are produced from our department at present or will be produced in the near future, will go and help in the staffing the two new departments of Pathology to a considerable extent. Any assistance we receive from this Japanese Thai Medical Cooperative project in Pathology will have multiplying effects not only for the Department at Ramathibodi Hospital but to the two other new departments as well.

DEPARTMENT OF PATHOLOGY
FACULTY OF MEDICINE, RAMATHIBODI HOSPITAL

February 1971

- | | |
|--|--|
| 1. Natth Bhamarapavati, M.D., D.Sc.,
Diplomate Am. Board of Pathology
Dengue hemorrhagic Fever,
Liver diseases. | Professor and Chairman |
| 2. *Somnate Boonpaknavig, M.D.
Immunopathology. | Lecturer in Immunopathology |
| 3. Anong Nondasuta, M.D.
Obstetric Gynecological
Pathology Cytogenetics. | Assistant Professor of
Pathology |
| 4. Bencha Petchchai, M.D.
Immunology. | Assistant Professor of
Clinical Pathology |
| 5. Kasem Angkustsiri, M.D.
Ophthalmic Pathology. | Study Leave |
| 6.**Makoto Miyamoto, M.D. | Visiting Lecturer in
Experimental Pathology |
| 7. Panida Jayanetr, M.D.
Diplomate Am. Board of Pediatrics
Diagnostic Microbiology. | Lecturer in Clinical
Pathology |
| 8. Pimol Chiewsilp, M.D.,
Diplomate Am. Board of Clinical
Pathology
Immunohematology, Blood Bank. | Lecturer in Clinical
Pathology |
| 9. Frapasri Boonyaraj, M.D.
Forensic Pathology. | Associate in Pathology |
| 10. Prawat Nitiyanand, M.D.
Hematopathology. | Associate in Pathology |
| 11. Sawarng Chuahirun, M.D.
Neuropathology. | Study Leave |
| 12. Songsee Sriwanboon, M.D., M.PH.
Cytology, Ob. Gyn Pathology. | Lecturer in Clinical
Pathology |
| 13. Sukhum Bunyaratvej, M.D.,
Diplomate Am. Board of Pathology
EM. of liver. | Lecturer in Pathology |
| 14. Suwarind Kanthanapar, M.D.,
Diplomate Am. Board of Pathology
Neuropathology, Neoplasia. | Lecturer in Pathology |
| 15. Vijitr Boonpaknavig, M.D.
EM. of kidney
Ophthalmic Pathology. | Assistant Professor of
Pathology |

* Members of the staff of Department of Pathobiology, Faculty of Science, Mahidol University.

** From Department of Pathology, Medical School University of Osaka.

9. Gist of Discussion 作成の経緯

前述の如くOTCA調査団とタイ側との第1回meetingは2月5日の午前に行われ、タイ側からラマチボデイ病院々長のDr. Arce、眼科学教授Dr. Uthar、病理学教授Dr. Natthが出席し、日本側から外山、中島、溝淵(OTCA)のほか在タイOTCAから宮本所長、高橋氏等が出席し、宮本所長より今回の会談はラマチボデイ病院の眼科部門と病理部門のみに内容を限る旨述べられた。General meetingのあとを直ちに日本代表団とDr. Konyama等を中心とする眼科部門についての討議がなされた。

日本代表団と病理部門との会談は2月8日に行われた。タイ側はDr. Natthを中心とした教室員約10名が出席した。この会談の終りにはProf. Dr. Swasdi Skulthai (Vice Rector, Training & Deuelopment, Mahidol UIniversity)も出席した。

Dr. SwasdiはFaculty of Graduate Studewtsの学長を兼任している。

Gist of Discussionの原案はDr. Uthai及びDr. Natthから出された報告書及び討議及びOTCAの意向等を勘案して日本側代表によって宿舎に於て作成され、2月12日の最終meetingに於て日タイ両者によって追加訂正確認され、その日の夕方Dr. Jajawan主催の夕食の席に於て日本側は外山、中島、によりタイ側はUthai, Natthによってサインされた。その全文のコピーは次に示す通りである。

10. GIST OF DISCUSSION

Between

THE REPRESENTATIVE OF DEPARTMENT OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

and

THE DEPARTMENT OF PATHOLOGY, FACULTY OF MEDICINE, RAMATHIBODI HOSPITAL

and

JAPANESE SURVEY MISSION FOR THAILAND

Introduction

The OTCA has begun cooperation with the Department of Ophthalmology and Otolaryngology of the Faculty of Medicine, Ramathibodi Hospital since 1968 and with the Department of Pathology of the same faculty since late 1969 in the development of their activities.

From 3rd to 13th February, 1971 the Mission, Representatives of the two departments and the dean discussed various aspects of the projects to evaluate the past, three years among five year plan for Department of Ophthalmology and Otolaryngology, one year among three year plan for Department of Pathology, and to set the plan for the remaining years to come. The mission received the progress reports of the projects from the chairmen of the two departments.

The Japanese mission understood, after the explanation given by the representatives and visits to rural hospitals, that there is in Thailand a shortage of medical personnel, especially in Pathology and in Ophthalmology and Otolaryngology. The aim of Ramathibodi Hospital is to create the personnel who will take part in the medical education which will ultimately supply enough manpower to run the adequate medical service throughout the country.

The discussions held between them are summarized in the following:

1. Project for Department of Ophthalmology and Otolaryngology

1.1 Evaluation of the past activities of cooperation. The items discussed are as follows:

1) Residency training program in basic ophthalmology: The Department sent four residents in 1968, another four residents in 1969 to Japan for training in basic ophthalmology for the period of 9 to 11 months. The result is favourable.

2) Refraction clinic: This was set up at the early phase by Dr. Konyama and is gradually being taken over by Thai counterparts at present.

The result seemed to the mission satisfactory.

- 3) Contact lens units.
- 4) Orthoptic clinics and the training of orthoptists.
- 5) Fundus fluorescein angiography and fundus photography unit.

These three units are in the process of building up their activity smoothly, and they are hoped by the mission to get to their full activity very soon.

As for 6) Biochemistry unit, it did not give expected result as originally planned. The mission, however, noted that the major equipments donated by OTCA under this item is currently serving for the research activity of the Hospital, being on loan to the Central Research Laboratory of the same hospital. The mission expressed their hope that they will continue to be useful in the activity of the Hospital, and in the near future they will serve for the research activities of the Department again.

The mission understood with deep satisfaction the appreciation of Dr. Uthai, the Chairman of the Department, for the activities of Dr. K. Konyama, the expert sent by OTCA to his department, on various aspects of the department and on his participation in rural health project in Bang-pa-in, which may give one of the basic aspects in planning the ophthalmic service for the country.

1.2 The projects requested in 1970 by Ramathibodi and under consideration by OTCA.

These items are the followings:

- 1) The fellowship to send Dr. Vijitr and Dr. Thongchai to Further their study in *pathology and glaucoma for three and two months respectively* and two fellowships to send nurses to Japan for three months to study the operating room's management and new technique in ophthalmic nursing.

- 2) Equipment for electrophysiology unit, dark adaptometer and small amount of equipment for setting up the ophthalmic pathology unit and for teaching.

- 3) Short term visiting professor in ocular electrophysiology and neuro-ophthalmology. Prof. S. Ishikawa is already requested in 1970 to visit the Department.

The mission expressed their hope that these being all important for the activity of the department, these requests will be met at an earliest possible date.

1.3 Future plan and requests from Ramathibodi.

The items requested by Ramathibodi in accordance with the future planning of the development of the department are as follows.

- 1) One long term expert to work at the department.
- 2) Fellowship for four first year residents to receive basic ophthalmology training in Japan.
- 3) Fellowship for teaching staff to study the retina and ophthalmic microsurgery in Japan for three months.
- 4) Two fellowship for nurses or orthoptists to study nursing in ophthalmic clinics, or to study pediatric ophthalmology, orthoptics and methods of ophthalmic examination.
- 5) Photocoagulator for retinal diseases.
- 6) Ophthalmic microsurgery unit.

The summary of discussion on these items will be given later.

2. Project for Department of Pathology

The mission understood from the explanation of Dr. Natth that the Department of Pathology is related in the activities, is not only other departments in Ramathibodi but also to other hospital throughout the country. They also understood the difficulty and shortage of manpower in pathology in this country, that is caused by the pathology operating behind the scene of clinical medicine.

2.1 Evaluation of the past activities of cooperation.

The items discussed are as follows:

- 1) Animal facilities for experimental pathology.
- 2) Electron microscopy laboratory.
- 3) Experimental pathology research development.

Dr. Natth divided the activity of his department into three: human pathology, clinical pathology and experimental pathology. The former two are for the medical service throughout the country. The last one, experimental pathology, especially, is aimed for the upgrading of the pathology researches in this country, and for the training of pathologists and technicians in pathology. The activities in experimental pathology will serve not only for the training of the personnel in advanced stage, but also will be an important basis to keep the quality of the techniques in clinical pathology and human pathology. The mission is satisfied with the progress in setting up the animal facilities and breeding pure strain animals, which will be the basis of further activity in experimental pathology. As for

electron microscopy laboratory, the mission hopes that the electron microscope which has just arrived will be installed and begin the service quickly, and the activity of the laboratory will be built up as planned. The mission also noted that Dr. Natth already has two senior staff and one technologist who have good experience in electron microscopy. The mission noted with pleasure that Dr. Miyamoto, the expert sent by OFCA, is working on animal facility, performing experiments on cancer, and is engaged in other activities of the department.

2.2 The project requested by Ramathibodi in 1970 and under consideration, including funds for super freezer, refrigerators, centrifuge and a few small equipment. The mission expressed their hope that these being all important for the activity of the department, these requests will be met at an earliest possible date.

2.3 Future plan and requests from Ramathibodi

The items requested by Ramathibodi in accordance with the future plan of the department are as follows:

- 1) One long term expert to work at the department continuing in 1972.
- 2) Two short term visiting professors for 1971 and another two in 1972.

For 1971, assistant Prof. S. Onishi in electron microscopy, and Prof. Miyaji, in liver cancer, are requested in 1971 to be at the department for the period of 3 months. For 1972, the experts in immunopathology and autoradiography are being considered for visiting professors to the department.

- 3) To send three Thai staffs of the department to Japan in 1971, four Thai staffs in 1972.

- 4) Possibility is being explored to have cooperation in clinical pathology in 1972.

Past cooperation in Pathology has conformed with the initial report and recommendation made by Dr. H. Miyaji in 1969.

Final conclusion

There were several other problems discussed about the future plan of the cooperation for The Department of Ophthalmology and Otolaryngology and the Department of Pathology. These problems will continue to be investigated until they will be taken up in more definite shape.

The mission understand that the future planning and requests by the two departments are adequate and necessary for the activity of the department in the future, and hoped that they would receive a favourable decision by OTCA. In this connection, the mission thinks it necessary to evaluate the projects again at least one year prior to the end of these projects and discuss the possible extension of the projects or the planning of the new projects which may evolve after the present ones.

As the result of discussion on these projects of cooperation, summarized above, the mission had the impression that these projects are going smoothly in general, thanks to the effort of the people in charge to overcome various kinds of obstacles which may occur in these kinds of international cooperation. Both expressed their hope that further effort should be made to complete these projects in success, under the approval of the governments.

February 12, 1971

Signature

.....*Toshio Toyama*.....

(Dr. Toshio Toyama)

.....*Uthai Rutnin*.....

(Dr. Uthai Rutnin)

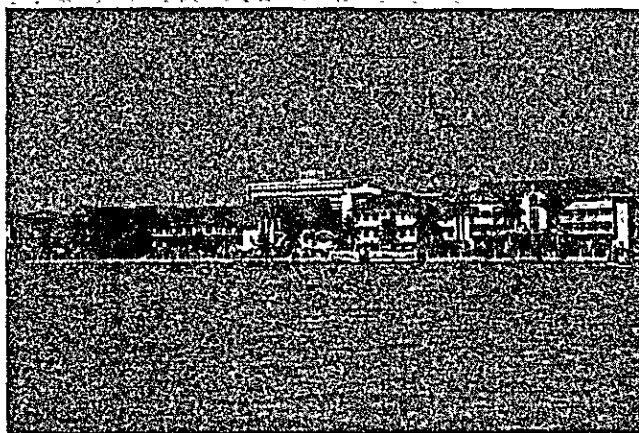
.....*Akira Nakajima*.....

(Dr. Akira Nakajima)

.....*Natth Bhamarapravati*.....

(Dr. Natth Bhamarapravati)

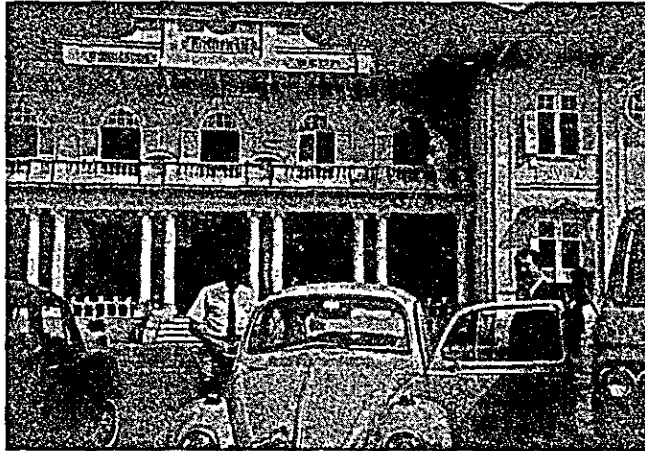
11. その他の医療事情について



シリラーヂ病院

(1) シリラーヂ医科大学病院 (Siriraj Hospital) :

これはマヒドール大学に属する医科大学の一つでバンコック市メナム河の西岸にある最も古い医科大学である。Rector の Dr. Jajawan は此のキャンパス内に事務室をもっている。この病院は患者の医療を主としており教育病院としての機能はすでにラマチボデイ病院に一步をゆづっている。しかも最も伝統ある医科大学として、また現在のタイ国医学指導者の大多数は此の大学の出身者である。新しい病棟の新建築もあるが一般に施設はやゝ老朽化しているように見うけられた。



チュラロンコン病院

(2) チュラロンコン大学病院 (Chulalongkorn Hospital)

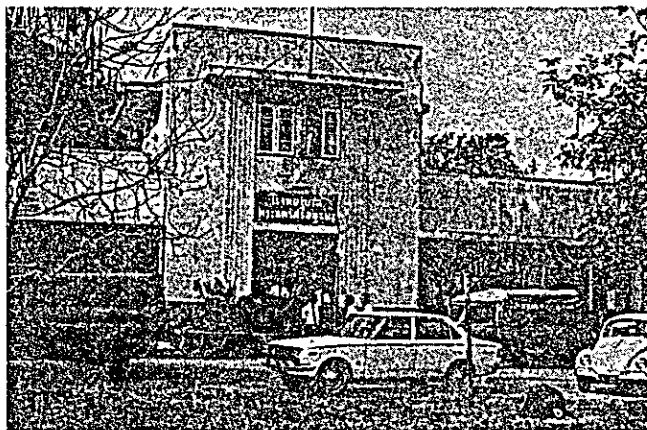
この病院は市内にある有名なタイ国最大の総合大学のチュラロンコン大学にある医学部病院である。歴史も古いので病院内の各病棟は老旧化したものもあるが、一般によく整備されている。外来部門は古い建物であるが、図書館等はチャイナ・メディカル、ボード等の援助もあって施設は立派である。しかし医学図書館としての機能、サービス性、近代性は極めて弱体であるようにみられる。ラマチボデイ病院と特別の関係はない模様である。教育病院としてよりも市内の一総合病院の機能をはたしているとみられる病院である。



チェンマイ大学医学部

(3) チェンマイ医科大学病院 (Chiangmai University Hospital)

この医科大学は1960年にタイ国立として創立され、1968に米国の援助により近代的建築物の建設と共に、タイ北部の地域大学病院として重要な地位と機能をもっている。病床数650、年間外来患者数約15万人とされている。カリキュラムは比較的近代であるが教育要員、及びパラメディカル要員の極端な不足を訴えている。現在教授陣は主として米国留学組で占められており、診療を主とし、研究部門は極めて弱体である。2月7日の日曜日に日本代表団が訪問した際には服装を正した多数の教授によって会議室に於て応待された。当日は学長は不在で副学長のDr. Avudh以下Dr. Prayath. Dr. Tejatat. Dr. Chummum, 等で管理部長Mr. Thipが出席した。教員は優待しなければ赴任して長く居着いてもらえないので教授等Facultyの住居施設は極めて立派で欧米並みと云うことができる。



アユタヤ病院

(4) アユタヤ県病院 (Ayutthaya Provincial Hospital):

この病院はバンコック北方約100kmのメナム河畔の古都アユタヤ市にある国立地方病院である。医師看護婦の補充に悩んでおり特に臨床検査技師不足で肝機能検査にも事を欠くという話である。病床数225、医師5名の規模で、看護婦26名(そのうち正規看護婦RNは8名)看護補助者30名である。1日に200名の来院者があり、救急患者は1日平均15名である。月間の外科手術数は40~50名で「胃かいよう」が多いことが注意されている。これは在タイ日本医師および今回の日本代表医師団の中でも、特に注目された点であって、おそらく非常にからい青色の小形とうからしの常食が関係するのではないかと推測がなされた。

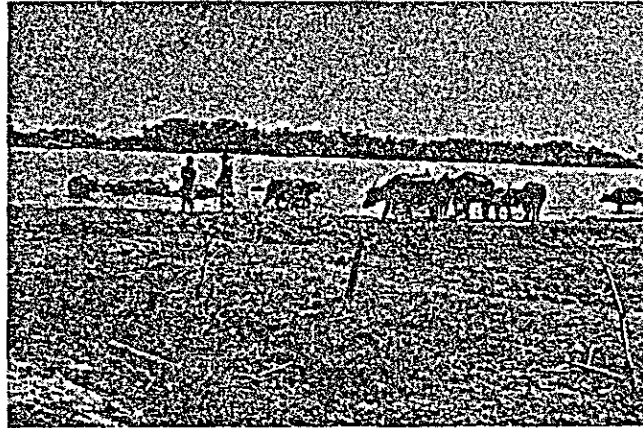
この病院には市民から寄付された借りよ専用の新しい病棟があり私共には目新しいものとして観察された。



バンバイン保健所

(5) 衛生省、国立地方病院課及び衛生統計課 (Ministry of Health, Department of Provincial Hospital, Department of Health Statistics) :

我々は時間の関係でこの2課のみを訪問した。国立地方病院課では課長のDr. Kong とあった。彼によれば現在タイ国の全病院数は84でそのうちProvincial Hospital は68であり、前記のNatth 氏の数よりもやゝ少い。国立地方病院全部の医師の定数は1,000であるが現在800を満たしているという。OTCAからの援助を強く望んでおり、地方病院で働くタイ医師の日本に於ける訓練、とくに眼科、がん対策、胸部外科等、及び集中医療看護や生化学検査技師などの養成も望んでいた。また眼科の器具、心 器具、オートフナライザー等も希望があり、これらはすべて1年前からタイ国のDTBOを介して日本側にとどくように要請中との談話であったがこれは今回のラマチボデイ医大調査団の任務の外であるので単に談話をきくとどまった。



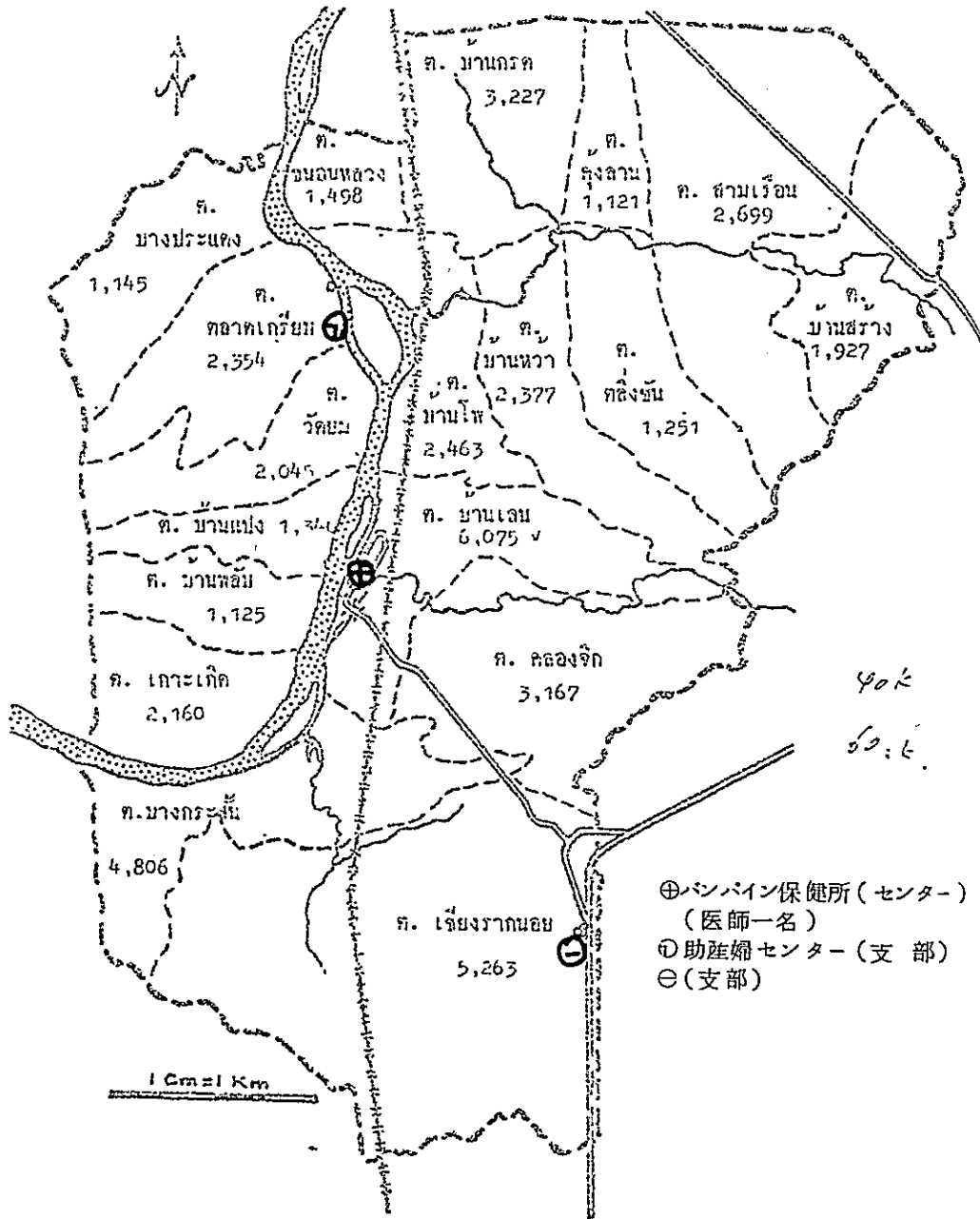
バンパイン地区

(6) ラマチボデイ医科大学の地域保健 (Community Health) の教育について。〔遺補〕

医学生の地域保健の教育のためにラマチボデイ医科大学では1970年度からバンコック市北方メナム河畔のBang Pa-In 地区をテスト地区として、各教室協力のもとにDr. Pensriを長として新しい地域医療教育計画を開始している。これにはロックフェラー財団が全国的に援助し現在Dr. John Bryant が技術指導に当たっている。そのほか不在であったが他に2名の米人医師が参加している。ロックフェラー財団の援助額は大体年間400万バーツで3年間継続される予定である。バンパイン地区の保健所を根拠地として大学からは保健婦(米国仕込み)が参加し学生を指導している。この地区は地図に示す如くメナム河を中心とした平坦な土地で大部分、電気、水道、下水のない所である。地域の中央部の保健所にはDr. Chinda 保健所長の常駐し、北方の村の支部(助産センター)には1名の助産婦がいるのみである。南部の支部には常任の衛生担当者はいない。

保健所として現在最も大きな仕事は住民のBirth controlである。実際には経口避妊剤が用いられている。人口対策はバンコックDTEC部長の説明にもあったがタイ国の最大政策の一つであるとの事である。年間の人口増加率は乳児死亡率が高いにもかかわらず3%という世界における最も高率の部類に入っている。

バンパイン地区のCommunity Health 教育は医学部1年生から開始される。選択科目であるが夏休みを利用し、学生が実際数週間現地に留まって研究を行う。2年目はDr. Bryantの指導計画下のProblem solving cycleの実際に移ってゆき、3年目は疫学を中心とし、4年目は臨床のクラークソップの一環として医療に関係する。3、4年は必須である。この中で眼科部門に於てOTCA派遣の日本医師(楳山博士)が教育に密接に関与している。



BANG PA-IN地区図

〔遺補〕 ラマテイボデイ医科大学のDr. Natth よりOTCA 調査団に出された医療協力の将来
に対する一般的考え方および希望：

バンコック滞在中Dr. Natth からOTCA 調査団長外山あてに提出された首題の書簡を参考
にまで全文のコピーを次にのせる。要点は国際的医学研究のプログラムをテーマごとにつ
て両国学者がそれに参加して研究をなしとげるという案であるが真面目な傾聴に値する文章
であろう。



คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
ถนนพระราม ๖ พระนคร
FACULTY OF MEDICINE, RAMATHIBODI HOSPITAL
RAMA VI ROAD, BANGKOK 4, THAILAND.

February 11, 1971

Dr. Toshio Toyama
Chief, OTCA Evaluation Mission in Ophthalmology and Pathology
Asia Hotel
Bangkok,

Dear Dr. Toyama:

An additional thought has occurred to me concerning OTCA program, and I would like to propose this for your consideration.

At present OTCA programs in medical cooperation involve training, service and research. While training and service can be measured quantitatively i.e. number of trainees or of patients, research is still very difficult to measure. So far OTCA has been very generous in term of supplying major equipments for research, but operational costs which are supposed to be borne by recipient organisation may or may not be available adequately. The experts from Japan also come to work for relatively short periods which make actual research cooperation, supervision, or evaluation difficult. These various reasons point out difficulties in assessing and supporting good research programs. I wonder if it might be possible to set up a program in OTCA for supporting international medical research. This program would solicit and receive research proposals from qualified investigators, either Japanese or citizens of country where OTCA is involved in medical cooperation, for supporting the research to be done in that country. In case Japanese investigators want to do research oversea, a prior agreement with local institution where he wants to work will be needed. The proposals should be strictly evaluated on the basis of scientific merit and competency of the investigators and funded according to priorities and availability of research budget. OTCA could draw on the advice of teams of eminent Japanese investigators to evaluate the proposal and the result of the study in case the proposal is supported. Since there will be a limitation on research fund as well as on member of qualified investigators in developing countries, this program could start in a small way with specific guidance into the areas where research proposals should be receive high priorities. These areas may involve infectious diseases, nutrition and other fields where the information obtained will be relevant to the regional need.



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RAMA VI ROAD, BANGKOK 4, THAILAND.

Research support should be provided for equipments, salaries of research assistant and other operational cost, should be for a specified and reasonable period, and subjected to a periodic or annual review, with free option by OTCA for cancelling or renewing the support according to the scientific evaluation. The research proposal should be received directly at OTCA office either in local country or in Japan without involving the administrative machinery of other countries. It should be made clear in the regulation that OTCA would welcome and would urge the investigators to publish the result in good journals without any string attached, but there should be a short acknowledgement that the particular project is supported by OTCA. This is in addition to periodic progress reports which are required by OTCA during the project time. In case there is some invention or discovery which may lead to marketable products, the right should belong to the research or educational institutions where research is done which must be non profit in nature.

I believe that the resources of Japan, both financial and scientific are adequate for this endeavour. The proposal may lead toward establishing a closer scientific tie between Japan and other developing countries, and will help in the development of scientific research in those countries on the basis of merit without any political implication. This will definitely enhance the over all aim of OTCA in developing countries as far as medical cooperation is concerned.

Sincerely,

Natth Bhamarapravati, M.D., D.Sc.
Professor and Chairman
Department of Pathology

c.c. Dr. Nakajima
Mr. Mizobuchi
Mr. Miyamoto.

