④ これに関連して，Servey for Health center activities and Health care usage の調査を実施したい。目標は,Health centerの活動内容の評価とuserの利用状況，Health worker がどんなtrainingを受け，これからどのようなtrainingを希望するかを調査することでHealtl center activities については調査票を作りThai language に translate を終えた。Usage 調査は現在作成中，7月に実施予定

これをもとに，Villageの保健需要がどの提度Health Centerにより満されているか，Communicator との関連などを検討したい。

コメント：1－② Dr. Damuron に実状をよく聞いた上で判断することになった。

発言要旨：外海

1. 月例の水，氷の分析

5月24日，6月1日の2回にわたり新計画第1回目のサンプリングが行なわれた。チャンタブリからバンコクへの検体輸送はすみやかに行なわれた。化学分析はＤＦＡの水分析室で行ない，結果は約2週間後に得られた。空ビンの返送方法についてもシステム化したいと考えている。

2. 地方検査所の視察

5月19日～23日にソンクラのＤＭＳ所属地方検査所を視察した。これは，ソンクラ病院内に間借りの状態にあり，食品，薬品，毒性の各一名が5週間交代で滞在している。サンプルは地方のポリスが採取して持込み，その約半数は違反となっている。使用機器としてはＰＨメーター，分光光度計，ポテンシオメーターなどがあった。

3. 携行機材の修理について

ガスクロマトグラフYanaco GC－2800型の温度制御部が故障して使用不能となったので，東京ＪＩＣＡ本部に問い会せて至急に部品を空輸してもらった（約1週間）。修理は知人の好意によりやってもらっている現状であり，Expert 帰国後はどの様になるのか心配である。

コメント：3について，Project が存在する間は，他のExpert にお願いできるが，Project 消滅後の修理については，日本側は感知しない原則である。

1982年度第4回専門家会議記録

日　時：7月9日(金)　9：30～12：00

場　所：医科学局（Dep.Med.Sci）会議室，ヨッセ,バンコック

出席者：長谷川チームリーダー，渡辺調整員

伊藤，武衛，宮崎，西村，各専門家

司会記録：西村専門家

外海専門家が病気加療中のため出席されなかったが，前本チーム専門家の宮崎先生が再び本チームに参加されることになり，冒頭，着任のあいさつをされた。

I　長谷川チームリーダーより

1）Research.Protocol：Project Directorからの要請で研究課題毎のProtocolを提出してほしい。尚今後のProgress ReportはこのProtocolに従って記載されたい。

2）日本からの来訪者の受け入れについて

機材修理班（JICA）7月18～29日

チャンタブリ来訪については到着後，渡辺調整員が日程を調整する。

佐賀大学医学部学生　8月3日～30日

チャンタブリを来訪し，Field workを手伝いたい旨申し入れがあり受け入れることを決定した。仕事の内容，宿舎他，詳細は到着後協議する。

五十嵐班（長崎大・医動物）8月21～23日

II　渡辺調整員より

1）宮崎専門家（生化学）の着任

6月29日から1ケ年の予定。主な勤務先はチャンタブリPHL

2）機材修理班の派遣

7月18日(日)から7月29日(木)までJICA1名（Mr.寺沢）を含む4名で構成，スケジュールはティーム来泰後調整予定

3）基盤整備費による井戸堀事業について

7月1，2日現在でInspection Committeeを開催，水量，水質のチェックを完了。

井戸の部分の工事が完了したことを確認

コメント：付帯工事が開始される。

4）秘書，運転手に対するDTECからのrefundについて

4－1　4月からbase upが実施されている。

4－2　所得税は源泉徴収されている。

コメント：以上の2項が確認されたので，取扱いにつき協議の結果4月にさかのぼり，差額を

支給する。所得税の払い過ぎの分も合わせて，７月分支給時に調整することとした。

Ⅲ　各専門家業務経過報告

Ⅰ）伊藤専門家（ウイルス学）

1. アルボウイルスの赤血球凝集（ＨＡ）反応，特に凍結乾燥で安定化した初生ビナ赤血球の応用について検討した。今月はDengue virusの３型（再実験）と日本脳炎VirusのＨＡ抗原との反応を調べた。

〔結果〕　初生ビナ凍結乾燥赤血球（FDCRBC）は，①Dengue virusの３型のＨＡ－testにおいても，従来既に確認済みのDengue virus １，２，４ 型の場合と同様に，実用的な使用の可能性を示した。

②日本脳炎VirusのＨＡ抗原との反応性においては，アルボウイルスＨＡ反応における特徴の１つにあげられている。ｐＨ依存性が著しく緩和した。この現象の確認は，当専門家が日本で実施した実験結果と一致した。本現象でみる限り，日本脳炎ウイルスはDengue Virusの１，２，３型とは異なっているが，Dengue virus ４型と類次の現象を示した。

2. 来る７月１０日から１カ月間にわたって一時帰国する。これに伴い，手持ちの組織培養細胞株の保存に気を配っている。

① ジメチールスルエキシッドを7.5％に添加した。組織培養用液体培地に培養細胞を浮遊させ，－７０℃に凍結保存した。

② １部の株化細胞は日本に持参して培養する準備をした。

提案事項

1. 国内委員長から話が出ている，Chanthaburi地区の蚊からのウイルス分離をどのようにするか？。正式な実験法を採用した場合，最少限度約５０万～６０万円＊の経費が必要である。

＊コメント：typing用既知抗血清 Safety box等

2. ウイルス分離以前の問題として，Seroepidemiologicalな見地からの調査も重要と考えられる。

a　日本脳炎ウイルスの流行状況を知るため，ブタ血清中のＨＩ抗体価の測定。

b　ブタ血清と比較の目的で，ヒト血清中の抗体価についても調べる。（この処理血清は同時に風疹抗体価測定もできる。）

＊コメント：いずれも５０～６０検体を予定

コメント：提案された２研究について，実施の可否のみきわめが必要なので宮崎専門家の協力でPretestすることにした。

Ⅱ）武衛専門家（医動物学）

1. ５月２９日～６月２９日，休暇一時帰国したが，その間日本衛生動物学会大会（帯広畜

産大学）に参加。大阪では阪大微研の深井教授を訪問した。

2. 6月中の蚊の定点採取は計画どおり無事遂行された。しかし，コガタアカイエ蚊の飼育（Colonization）には失敗した。

3. 8月の行事予定

8月16日より20日頃にかけて，伊藤専門家と協同して，チャンタブリにおいて蚊を採集し，蚊からのアルボウイルス分離テストを行なう予定。これに伴なう器材の借入れ等についてVRIとのコンタクトをお願いしたい。

コメント：蚊の採集には来訪予定の佐賀大医学生の協力を得る。Field は Tagad Ngao

Ⅲ）西村専門家（公衆衛生学）

1. Water check 7月の日程

7月13日(火)当日 Sample を Bangkok へ送る。
7月19日(月)，20日(火)，20日に Sample を送る } 1回10検体前後，合計21検体

2. Medical Service 日程

7月21日(水)，Thambon Bo へ

3. Health Center Activities and Health care usage Servey.

6月29日，30日の両日にわたり，District Health officer を通じて各保健所へ，調査票を配布，回収は8月5日予定。

4. House hold Servey は格別進展はない。

5. HP－Computer について

- 7月1日，Dr. Dnayi と供に本体の作動試験を実施，使用可能を確認
- Disk.Printer の作動試験は7月14日(水)に実施の予定
- HP－Computer Operation の training を開始する。

対象は Dr. Danayi　Mss Chanchana

6. 視聴覚教材整備事業について

新しい進展はないが，今月中旬来訪される寺沢氏によって，日本で進行中の津野 Plan について，何らかの連絡があると思われる。

7. 中堅技術者養成事業について

- この事業に使用される予算の使途項目について，タイ側 Project Director から，クレームがあり，現在調整中のため，進展はみられない。

Dr. Khungton の Plan についても，予算の使途項目で不適当なものがあり，調整を必要とする。

この他の training plan は，まだ作られていない。

1982年度第5回専門家会議記録

日　時：8月11日(水)9：30～12：00
場　所：医科学局　JICA 事務室，バンコク
出席者：長谷川チームリーダー，渡辺調整員
　　伊藤，宮崎，西村，武衛，各専門家
記録・司会：武衛専門家

Ⅰ　長谷川チームリーダーより

チームリーダー代行者について

長谷川が8月28日より9月28日にわたる約1カ月間休暇一時帰国のためにタイ国を離れる。この間のチーム・リーダー業務の代行者として，武衛和雄専門家を委嘱したい。

Progress Report 提出について

前回の専門家会議で提出方を依頼した各研究テーマに関するProtocol に基いて，4月～6月の間のProgress Report を至急提出して戴きたい。尚，上記Protocolも同時にお出し願いたい。

携行機材申請について

T/L 帰国に際して，各専門家の携行機材を申請する(Chanthaburi Laboratory よりのRotor もこれに含む)。

希望の専門家は，品目，型式，数量，購入理由を至急提出してほしい。

Ⅱ　渡辺調整員より

(1)　7．15　打ち合せ会議議事録取付

7月15日，チャンタブリで開かれたDr.Naduit を含めての会議の議事録

(2)　Expert List の取付

8月1日　現在のExpert List

(3)　深井教授の来泰

Seamic 特別講師とし，9月2日TG621にて来泰，同月12日帰国の予定，日程未詳

(4)　食品分析，外海専門家の帰国

8月4日，1ケ年の任期を終了し，TG 740 にて無事帰国済み。

コメント：(3)深井先生来タイを機会に，9月3日夕，先生を囲んで懇談会を開く。したがって同日午後Yodse（渡辺氏）と連絡をとること。

Ⅲ　各専門家業務経過報告

1）宮崎専門家（生化学）

携行機材が到着したので，これから活動を開始する。供与備品のなかに，耐用年数がきた

ものがあって，使用不能のものが出ている。応急処置としてこれをどうするかを考えてゆく必要がある。

2）西村専門家（公衆衛生学）

1. 8月分Water collect 日程

8月17日(火)
8月24日(火) } Sampling 後，同日 Bangkok へ送る。Cheanical check．9 sainples Chemical check. 9 samples／1 time Bacteriological check 20 samples／ time

2. Health Center Activities Servey.

調査票の回収は，2，3の保健所を残し，完了，調査票のCheck整理を始めた。残りの分は再度 radio を通じて依頼中。

3. House hold Servey について

8月17日　午後1時，看護大学との打合せ

調査票の印刷，調査準備等にかなりの予算が必要と思われるので協力をお願いしたい。実施時期・調査費用等については後程報告する。

4. H－P　Computer について

- 7月29日　H－P　Bangkok office へ行き，System の構成等を Check の後，8月4日(水)，5日(木)，7日(土)，8日(日)作動試験を行った。card reader（HP9869A）を除き，正常
- card reader は，card press weight の半分失による誤動作。card prees weight（Port No. 07261 － 60380）を日本から購入したい。
- In － Patient　Summary sheet の処理 Program を作成中
- Health center servey の Data 処理にも使用する予定

5. 視聴覚教材整備事業について

- Dr. Khungton より購入依頼のあった保健教育用 Slide を発注した。約 5000 B
- 映画の購入について新たに希望が伝えられたので，Plan of action を作成するよう依頼
- 腸内細菌検査マニュアルについては，非公式の情報では英文の作成がほぼ完了とのこと。9月，津野氏来泰時に実態が知られる。

3）伊藤専門家（ウイルス学）

1. 57年7月10日から1カ月間にわたって一時帰国した。この間，東京で開催された日米医学会ウイルス研究会に出席したり，阪大微研の防疫研究会（深井教授）でアルボウイルス研究に関する技術指導をうけた。なお，上記の日米医学会の theme はデング狂犬病下痢応ウイルスであった。この中でデングウイルスに関するトピックスの2，3を紹介する。

① 現在米国では古タイヤの投棄と蚊の集団発生が論じられつつある。

② 蚊の栄養状態とウイルス伝播力の関係が問題にされている。

付記：上記研究会にはタイ代表としてナチラ博士とアバ博士（赤十字）が招待されている。

2. 実験室内で各種の細胞を継代培養で維持しているが，一時帰国でその取り扱いが問題になっていた。この対策として，これらの細胞を帰国直前に－70℃ に凍結保存した（DEMSO 7.5%，ウシ胎児血清を10%に添加したMEM 培地に細胞をSuspend ）。帰国後再培養を実施しているが，特に問題はないようである。すなわち，培養細胞に関して，一時帰国による影響を回避することができた。

4) 武衛専門家（医動物学）

1. 蚊の生態学的調査：5地点の発生消長調査をつづけた。内，4地点は8，9月で終了する。今後，蚊の発生源調査に主力をおく一方，標本の整備に全力をあげたい。
2. 野外蚊からのアルボウイルス分離：来たる8月16日～20日にかけて夜間採集をTag-ad Ngao で行なう。佐賀医大学生の協力を得る。21～22日は，伊藤専門家に協力してウイルス分離テストを実施予定。Counterpart としてDMEのMr. Prakongが参加予定。
3. 硫球大学医学部保健学科：宮城一郎教授が8月2～4日来チ。蚊の現地予備調査に同行した。

次回は9月10日㈮ 9：30より医科学局で。司会は宮崎専門家。

1982年度第6回専門家会議記録

日　時：9月10日(金)　9：30～12：00
場　所：バンコク，医科学局内ＪＩＣＡ事務所
出席者：渡辺調整員，武衛，宮崎，西村，伊藤
　　各専門家　（長谷川チームリーダーは
　　一時帰国で欠席）
司会・記録：伊藤専門家

1. 渡辺調整員より

9月5日からChaingmaiで開催されたSEAMIC（South Asian Medical Information Center）Workshop参加について説明

SEAMICにはＪＩＣＡ国内委員長の阪大微研深井教授も参加された。参加国はタイ，インドネシヤ，フイリッピン，マレーシヤおよびシンガポール，日本で，observerとしてスリランカWHOおよびＪＩＣＡが出席した。

議題は，"Health for all by the year 2000"で各国のPrimary Health care（PHC）の現状紹介があった。またタイの実施状況の視察ではLampang project，PHC実践の現場としてはHot District Hospital Chaingmaiを視察した。

以下に特に印象に残った点を述べる。

○　タイの場合，第5次5カ年社会経済開発計画でＰＨＣを前面に押し出して，大学と協調するなど着実な前進がうかがわれた。

検査室の機能拡充を中央とのLinkageの中で考え，地方の疾病構造を調査している。すなわち，我々のPromotion of Provincial Health Services Projectとはかなり違うニュアンスがこの国の基本方針であることが明かになった。従って我々のProjectの終結に向けての動きは，この点を抜きにしては語れない。

○　MESRAP（Medical Education for Students in Rural Area Project）の紹介に関連して

これはチェラロンコン大学医学部で，従来の入試制度とは別枠で，地方からの学生に医療教育を施し，地方での医師不足を解消させることを目的としている。

「問題は，この場合のClinical EducationがPropokkulao Hospital担当になっていることである。」

現在進行中の校舎がそれにあたり，我々Projectから供与された大量の機材がそちらに流れる恐れがある。すなわち，タイ国政府の基本方針にのっとったＰＨＣが，我々のProjectを利用し，機材と技術を取得することが懸念される。

○ その他の事項

新しいProjectの導入 ― SecretaryやDriverからの不満があるので，レシートの様式を改良したい。近い将来，オラパンらをまじえて話し合うことで一致。

2. 武衛専門家（医動物学）

(1) この1年間，チャンタブリを中心に主としてフィルドワークを実施してきたが，DMSの衛生昆虫部の指導を行なうため，9月から月の半分をバンコックで送ることになった。したがって，9月からSkuhmvit Soi 24（White Mansion，Skuhmvit通りから徒歩7分，自宅の電話番号は391－8581直通）にアパートを借りて生活している。

(2) 8月16～20日にかけて，野外蚊からのアルボウイルス分離テストを行なうため，Tagad Ngaoの豚舎（2カ所）で蚊の採取を行なった。カウンターパートとして，DMEのMr. PrakongがChanthaburiに来た。

(3) タイ産の蚊のPictorial Keyの作製に着手した。

(4) 9月の行事予定：9月20日からチャンタブリ地区（市街地）のAedes aegypti成虫を採集，Dengue virus分離のテストが行なわれる。同時に，水田におけるコガタアカイエカ幼虫の駆除のため，幼若ホルモン（Altosid）の散布テストが行なわれる。このため，DMEから2名のスタッフが派遣される。

3. 宮崎専門家（生化学）

(1) P.H.L.で実施した精度管理に関するデーターの検討，重要13項目の生化学分析について

異常値を示すOmega Control Ⅱを使用，尚これは現在USAに於いて標準血清として 諸分析の規準より高い値を示したものはDUN総コレステロール低い値を示したものは尿酸，クレアチン，総ビクルビンでこれらについては何を標準に測定しているか，亦その選び方が適切であるか再検討する必要がある。総蛋白，アルブミン，グルコース，Na，K，Cl，アルカリホスファターゼ　Got などについては大体良い値が得られた。尚，問題は測定時に於ける個人差であろう。

(2) 水の採取分析に立ち合ったが，今後方法論的に，すべてP.H.L.で廉価で継続して実施されるような基盤を作りたい。

(3) ブタの血清（疫学的調査用被検血清）を7月と8月の2カ月間にわたって30サンプル宛を採取した。7～8月分のこの血清検体について伊藤専門家によるチャンタブリ出張，ウイルスHI検査の実施指導を早急にお願いしたい。そして今後の方針を決定したい。

4. 伊藤専門家（ウイルス学）

(1) アルボウイルスの疫学的調査（HI抗体の分布）を実施する目的で，本ウイルスHI試験用のDiluentを作製し，自家試験した。この試作品は市販の日本脳炎ウイルス乾燥HA抗原を3200～6400倍希釈まで凝集した。すなわち，実用的に使用できることを確認した。

(2) 武衛専門家らがChanthaburiで採取した蚊のPool（前記）の1例から（№4），tissue cultureで累代継代培養可能なfiltrable agentを分離した。いままでに判明した特徴を以下に列記する。

a) 蚊からの樹立細胞（C6/36）で継代培養できる（現在まで3代にわたって継代）

b) C6/36に接種すると細胞融合に基ずくと見なされる巨大細胞を作る。

c) Tissue Cultureにおける感染価は比較的高く1×10^6 TCID50（50% Tissue Culture infective dose）に達する。

d) 一般の動物細胞（PS，BHK−21）に接種した場合軽微な変化を与える（小hole形式試験管壁からのdetaclなど）。

なお，本ウイルスの分類学的位置を決定するため，さらに検討を続けている。

5. 西村専門家（公衆衛生）（数字を含む表があるのでOriginalを掲載する）

第9回専門家会議業務経過報告

1982．9．10

公衆衛生　西村雅晴

1. 9月分Watercheck日程

9月14日(火)
9月21日(火)
} Sampling後即日Bangkokへ輸送

Sampling数　for Chemical check　8 samples／time

for Bacteriologicel check．14 samples／time

雨期のため，Road Conditionが悪く，時間の割に能率が上がらないのでBangkokへの輸送Sample数が，しばしば変るので連絡は密にしたい。

2. Health Center Activities Servey

	HC No	pop	pop/HC	user	user/HC	(user/HC)／(pop/HC)×1000
MUANG	10	65,629	6563	675	68	10.2
TAMAI	21(19)	74,734	3933	1802	95	24.1
KLUNG	10	37,047	3705	651	65	17.1
MAKHAM	11(10)	30,338	3034	1008	92	30.3
LEAMSING	6	23,732	3955	435	73	18.5
PONGNAMRON	10	41,718	4172	720	72	17.3
Total	68(65)	273,195	4203	5291	81	19.4

調査票のうち，Userの個人特性についてData整理が終了，現在訴えと処置について整理中未回収3保健所は分析の対象から除く。

保健所特性の調査票の整理を進める。

3. House hold Servey について

9月6日，7日にわたり調査対象地区のDistrict Hospiral. District chief officer 村長を訪問し，現地踏査と事情聴取をした。

Klung　　2 Vllages 350 houses

Pong Namron, Makam　　2 Vllages 230 houses

Thamai　　2 Vllages 300 houses

調査員（看護大学校生徒）と教官がDistrict Hospitalに滞在し，調査に当る。

調査票は1000部印刷，近日中に入手の予定。予算については看護大学校の報告書にもとずき検討後作成する。主な項目は，ガソリン代，謝金，印刷費となると思われる。

4. H.P Computerについて

現在，機械に対する習熟とDr.Danai. Miss Chintanaへの伝達を実施している。扱うDataが大きいこと，Desk driveが一台しかなく，大量データの取扱いが困難なことなどの問題をかかえている。TareとDeskの併用を考えているが，Desk Driveがもう一台ほしいが，獲得，供与の方法はありや無しや，Dataの Back upのため是非ほしい。

1982年度第7回専門家会議記録

日　時：1982年10月8日(金) 9:30—11:45
場　所：医科学局ＪＩＣＡ事務室
出席者：長谷川チームリーダー，渡辺調整員
武衛，伊藤，西村，宮崎各専門家
司会・記録：宮崎専門家

1. 長谷川チームリーダー

先に一時帰国された時開催された国内委員会及びＪＩＣＡ東京での打合わせ事項と，今後の案件について説明された。

○ 国内委員会（9月20日）

1) Project Activity 今後の方向づけ
2) 本年度未派遣の専門家について
3) 本年度供与資材の決定
4) 機械修理班の来タイは11月に
5) 細菌学提要の発行について
6) 今回申請の携行機械について
7) 技術普及対策費の運用計画について
8) その他

現在専門家派遣中の分野については出来得る限り現体制のままProject終結に向け，専門家帰国の分野については短期専門家で補充，新しい分野に業務の拡大はしない。技術普及対策費の運用計画については，長谷川，渡辺，西村3氏で原案をより具体化していただく。

9月追加携行機械として申請して頂いたものについては，一部入手困難なものを除き概ね手続き完了。入手不可能なCoolspinのローターに関しては別途方策を考える。尚新たに追加としてComputer一式も送付される予定。

最大重要事項の渡辺氏の後任についても各方面に強力に交渉中。来年度供与機械，研修員等の予算は大体本年度と同等と考えてよい。6月～9月間のProgress Reportを各自のProtocalに基いて作製の上提出されたい。

2. 渡辺調整員

1) 1982年度カウンターパート　2名決定（日本研修）
2) 1983年度カウンターパート日本研修　4名申請
3) 機器修理保守管理Projectについて

Dr. Samkiat（ＶＲＩ）が中心に立案　ＪＩＣＡに個人派遣専門家の形で対応するよう

進言したい。

4) Team Leader Roomの移動　１０月１４日(日)に１日Dr.Nadiratの部屋へ

5) Coordinating Committeの開催　１０月２２日(金)に８３年度供与機械の要求の進め方について多少討議

3. 武衛専門家

1) ９月より毎月前半をBangkok DMS後半をChanthaburiに滞在と決定

2) 蚊の検索表３０％進行出来れば年内に完成

3) １０月３０日より一週間チェンマイに比較調査のため出向

4) ９月２０日ＤＭＳのMr.WirahtがChanthaburiに。
コガタアカイエカ及びネッタイイエカの幼虫防除試験を実施

5) Chanthaburiに於ける蚊のEcological SurveyはMakhamを除き他の予定４地点の同年調査を９月に終了。

4. 伊藤専門家

1) Chanthaburi地区の蚊から分離したVirusの性状組織培養法（Ｃ６／３６）で，中和試験及びＨＡ産生能をみたが，Ｊ・Ｅ及びDengue Ⅳとは関係なく，他のanimal virusらしい。Ｊ・Ｅの流行はもっと以前のようである。

2) Chanthaburiの層場で得た豚血清の疫学調査
９月末Chanthaburi PHRA POKKLAO HOSPITAL Lab.にて実施。Ｊ・Ｅ Virusに対する抗体陽性率が高い（約９０％）。今後の方向として流行期期及び人とのかかわり合いを多角的に周年的に実施する必要があり，亦蚊からのＪ・Ｅ Virus分離との関係等残る問題は多い。

5. 西村専門家

1) １０月の水質検査予定　１２日，１９日

2) House hold Survey
看護大学と連絡をとりつつ調査票により，１０月１１日より開始，全調査677を１２月終了の予定で進行，ガソリン代の半額は，日本人チームで負担

3) 保健所調査　現在集計中

4) 保健教育用スライド
先に供与したものについてCheckした。使用については尚工夫を要する。
ＤＣ－ＡＣ Adapterが入用

6. 宮崎専門家

1) Scope of workについて簡単な説明

2) ９月に実施した精度管理の報告

3) 豚血清中の免疫グロブリン（ＩgG, IgA, IgM）の調査をしたい。

以上，詳細は配布されたプリントを参照されたい。

次回，１１月１２日(金)，司会は西村専門家。

1982年度第8回専門家会議記録

日　時：11月12日(金)　9：30～11：00
場　所：BKK　DMS，PPHS事務所
出席者：長谷川チームリーダー，渡辺調整員
　　宮崎，伊藤，武衛，西村の各専門家
司会・記録：西村専門家

1. 長谷川チーム・リーダー

1）深井国内委員長の叙勲について

深井先生がタイ国より，白象勲章を授与されることになった。伝達式は，深井先生の来泰時に合せる。

2）Symposiumの進展状況について

11月9日，第1回Steering committee開催

問題点：参加者の日当・宿泊費→日本側の予算で考慮する方向で解決が計られる。

前項の伝達式をSymposiumに合せるよう深井先生と交渉中。

3）Interim Reportの原稿作製依頼

〆切　1983年1月末日

4）Symposiumの講演者選定と指導について

演題，演者名等について，11月中に長谷川先生へ。

5）Progress Report 7月～9月分の提出について

大至急

2. 渡辺調整員

1）技術普及対策費について

シンポジウム予算　11月11日付　JICA　BKK　Oflice経由で申請済（950万）

2）訓練事業費

11月1日　Dr. Khungtong，Dr. Somkiatへ交付

チャンタブリ1回目12日に終了

3）国内旅費清算法変更について

円急落のため，交通費（実費）を除き0.85までの減額をお願いする。

4）研究費第2回半期決算書について

5）機械修理班来泰スケジュール

11月22日～12月3日までJICA，日立計測，トミー精工から4名来泰。チャンタブリ滞在は，11月28日夜より12月1日まで

6）井戸の進展状況

水質（化学・細菌），水量（ポンプアップ法）の検査を終了，Inspection Committeeを開催の予定

7）公用車ガソリン代オーバー分の処理について

研究費残余分（外海）にて処理

8）映画「結核との戦いはつづいている」の送付・配布について

試写の後配布先，贈呈式等につき検討する。

3. 伊藤専門家（ウイルス学）

1）Seroepidemiological Assayのため，HI－test（赤血球凝集阻止抗体価測定試験）に使用するが鳥赤血球の安定化（フォルマリン固定）に関する検討を開始。JICA専門家とChanthaburi，プラポックラオ病院，DMSウイルス研究所との協同研究。

2）Chanthaburiにおけるウイルス性伝染病のSeroepidemiological調査

今月は先月に引き続き，飼育ブタ血清中の日本脳炎（JE）ウイルス抗体価を測定し5／30のブタがJEウイルス抗体価陽性を示した。（7月分は3／30が陽性），今後毎月定期的に測定し年間変動を調査・検討する。

3）Tissue Culture systemを応用し，風疹およびArbo virus（JE，Dengue virusなど）の診断用抗原作製の検討を進めている。

4. 武衛専門家（医動物学）

1）北タイ（4市）の衛生昆虫調査について

10月30日から1週間，DMS，衛生昆虫部のスタッフに同行し，出張した。

2）コガタアカイエカおよびネッタイイエカの幼虫駆除テストについて

幼若ホルモン様物質による蚊の幼虫駆除テストを9月に実施し，その効果判定を週1回の間隔で行なった（Tagod Ngao，市街地Ehaisiri）著しい残効効果があるようである。

3）蚊のPictorial Keyの作製について

現在60％進行中，年内に完成させたい。

Pictorial Keyについては，視聴覚教材整備費による本の作成について討論した。原稿完成後具体的に計画することとした。

4）11月の予定：11月25日前後3日間コガタアカイエカからのアルボウイルス分離テストのための蚊の採集を実施予定。今回は2回目の計画であり，伊藤専門家の協力をお願いしたい。

5. 宮崎専門家（生化学）

1）着任後の生化学検査数と精度管理結果について説明

10月度は検査員の出張が多く精度が悪化した。

2）PHLとして水質検査が出来るように検査法の検討と指導を行ないたい。

6. 西村専門家（公衆衛生）

1） １１月分の水質検査日程

①11月16日(火)，②１１月23日(火)，いずれも当日サンプルをBangkokへ送る。

2） 保健所実態調査，集計・分析中，今月末を目途に報告書をまとめたい。

3） House hold Survey，進行中，近日中視察に行く予定

4） HP. Computer，現在一時中止中，Card Readrの動作試験では読み込みがおこなわれずインターフェース・カードに欠陥があると思われる。

5） 視聴覚教材整備関係につき現況を報告

以　上

1982年度第9回専門家会議記録

日　時：1982年12月9日(木)
場　所：医科学局（バンコク）
出席者：長谷川，渡辺，伊藤，宮崎，
　　西村，武衛
司会・記録：武衛専門家

1. Team Leader

1）Symposiumについての経過

ＪＩＣＡ東京本部から，この予算の中，参加者の日当，宿泊，旅費は認められない旨の連絡があり，再三にわたる交渉も進展をみなかった。本部としては運用によってこの項をまかなうようとの意見である。

2）深井国内委員長の来タイ

昨８日入電，１０日より２４日まで滞在とのこと。詳細の日程は不明

3）岩島牧夫君（東大生）のProject訪問

１２月１４日より２５日まで来タイ，１５～２３日はChanthaburiに滞在する。受入れ方について了解。

4）Interim Report ，Progress Report

前回お願いしたが，更にご努力を願いたい。

5）井戸の贈呈式の件

１２月２０，２１日両日を予定。governer，河西所長出席とのこと，具体的な実施方法について討議

2. Coordinator

1）先日来タイした器材修理班に対し，チャンタブリ側から不満が出ている。

この件について宮崎専門家から経過説明があった。

修理完了の分　Tomy オートクレーブ　部品交換
　　平沢乾熱器　　〃
　　ミクロトーム　　〃

修理未完了の分　Beckman Klina Flame
　　COSMO Densitometer
　　〃　DC.C. stabilizer
　　Hycell counter, Water Distillor,
　　PH meter

Formar Scientific CH/P Co_2 コントローラー

Electric Generator

修理未完了の内，Beckmans は研究費で修理する。

Electric generator はタイ側からのリクエストを待つ

2) 井戸の贈呈式

贈呈式はタイスタイルで行なう。式の予算は日本側が考慮する。

3. 各専門家からの経過報告

1) 伊藤専門家（ウイルス学）

a) ホルマリン固定で安定化した鵞鳥赤血球のArbovirus 血清診断への応用

ホルマリン固定が鳥赤血球を arbovirus（日本脳炎，デング１．２．３．４型およびチクングンヤウイルス）の赤血球凝集（ＨＡ）および同凝集阻止（ＨＩ）試験に応用する検討を進めている。

上記が鳥の安定化赤血球が新鮮生赤血球の替りに使用できる可能性を得つつある。ホルマリン固定赤血球は，ＨＡ反応系におけるｐＨ依存性が緩和すること，ヒナ赤血球よりもウイルス特異抗原との反応感度が高い点（２～４倍）でメリットを示している。

b) 組織培養を応用する arbovirus 特異診断抗原の製造に関する検討

ハムスター腎，ブタ腎ならびに蚊細胞由来の樹立細胞の単層培養層に arbovirus（上記）を感染させ，赤血球凝集抗原の産生量についても比較している。いままでのところ，ハムスター腎細胞ＢＨＫ－２１のTissue culture 系で良好な成績を得ている。

2) 宮崎専門家（生化学）

a) ８２年１１月生化学検査件数は，総計7680件（前月 6045 ）一日平均256件（ 〃 195 ）であった。ＢＵＡ（ Blood Urea Nitrogen ）Na ,K, Cl ,Co_2 ,Creatinine ,Glucose 等が多い。

b) 血球計算器に使用する溶血液（ＷＢＣ用）の検討

Sample	相　関	回　帰
Normal Range	0.96	$y = 0.01 + 0.97x$
Low 〃	0.99	$y = 0.004 + 1.039\ x$
High 〃	0.87	$y = 0.015 + 0.971\ x$

日本より供与の市販品をベースに，次第に自家製に切換える。

c) ８月末に携行機材として要求した冷却遠心器クールスピンについて説明，本機材はバンコクの代理店を通しても入手可能である。

3) 西村専門家（公衆衛生）

a) 飲料水分析について

１１月分飲料水Checkにあわせて PKK Hospital 他３カ所の新深井戸の水を検査した

ところ，filter後の水がfilter前より細菌学的に汚染していることがわかり，このためfilterの殺菌，洗浄後再検査した。結果は１２月第３週にわかる予定。Chemical checkの結果はfilterの効果が認められ，特にFe^{3t}の減少がみられた。深井戸は３月まで経過を観察する。

１２月の日程：今月は検体数が多いので，１２月７日(火)，１２月１４日，１２月２４日の３日間に分けて採水する。

b) 保健所実態調査

タイ一英訳がおくれており，集計は完全に終ったわけではないので，報告書の完成は多少おくれる見込

c) House hold Survey

現在進行中

d) 視聴覚教材費について（細菌学検査マニュアル）

１１月１９日付で津野氏からの連絡によると（実際に落手したのは１１月末日，聞いたのは１２月８日），現在英文原稿がほぼ完成の段階と思われる。今後の日程としては，detailのつめを行ない，タイ語版の原稿を作製し，印刷の手順になると思われる。

問題点：1.前書きの内容をどうするか　2.同書の編集方針とその記名　3.出版社，原著者名等の取扱いの問題，従って，３月実施予定のシンポジウム時に配布予定については結論は得られない。

e) ＨＰコンピューターについて

現在，指導を再開した，寺沢氏来タイ時にDisc Driveの購入を依頼した。

4) 武衛専門家（医動物学）

a) １１月２４～２６日，Tagad NgaoおよびNong Buaの豚舎で，arbovirus分離のための野外蚊の採集を実施した。今回は２回目で，ＤＭＳより２名のスタッフが参加して行なわれた。合計2529匹，内コガタアカイエカ２１プール（1990），Cx.gelidus ４プール（263），その他５プール（276）を作った。サンプルは液化窒素で保存中，ウイルス分離テストはＤＭＳで行なわれる。

b) 蚊のPictorial Keyは現在８０％の進捗をみている。１月末までに完成の見通し。

4. 提案事項

1) 年次報告書の作製を１月１０日締切で準備されたい。本報告書中generalに関しては，各自で問題点をもちよって次回meetingのさいにまとめることになった。

2) 伊藤専門家の部屋がクーラー故障のまま放置されているため，実験に支障を来たしている何とか考慮してほしいという提案があった。

次回expert会議は１月７日(金)，医科学局で。

司会は伊藤専門家

1982年度第10回専門家会議記録

日　時：1983年1月7日(金)　9：30～12：00
場　所：医科学局内　JICA事務室(Bangkok)
出席者：長谷川チーム・リーダー，渡辺調整員
　　武衛，宮崎，西村，伊藤各専門家
司会・記録：伊藤専門家

1. 長谷川チーム・リーダーより

ⓐ チームリーダー会議出席について

2月7日～17日の間，JICA東京本部を会場に医療協力プロジェクト・チームリーダー会議が開催されるので，2月6日バンコック発，13日間不在となる。この間リーダー業務の代務者として，武衛専門家をお願いしたい。尚，これに関連し，2月の専門家会議の開催日を2月4日として戴きたい。

……上記の提案課題了承

ⓑ 上記会議資料として提出すべき昭和57年度年次報告の草稿が完成したので，ご検討戴きたい。

……上記年次報告書の取りきめが，全般にわたって通読紹介された。次いで各専門家および調整員からの意見交換があり，若干の訂正が加えられた。

ⓒ "医療協力プロジェクトの進め方"に関しての意見について同会議第3日目に上記主題の討議が行なわれる。これに提出すべき資料作製について，特に意見があればチームリーダーまで至急に申し出られたい。項目としては，次の2点が予定されている。

(Ⅰ) プロジェクトの効果的な運営促進のため必要と思われる新しい施策(予算措置)について

(Ⅱ) 医療協力プロジェクトの協力終了前及び終了後に望まれる対応策について

2. 渡辺調整員より

① プロジェクト紹介パンフレットの改訂

渡辺調整員が担当して目下改訂作業中であるが，各専門分野からの協力をお願いする。

② チームリーダー会議に関する件

……前記チームリーダーからの議題でとりあげているので省略

③ 西村専門家の任期延長

3月31日(S．58)までの延長が正式に決定した。

④ シンポジウムの準備状況

(Ⅰ) タイ側との協議に基き予算案を立て直して東京に提出済み

(ii) Invitation および Information 印刷中

(iii) Hotel room を booking した。

(iv) 秘書，タイピスト各１名採用済み

⑤ 深井戸工事

工事完了に伴い，S．57．12月20，21日にタイ側にひき渡し完了

3. 各専門家による業務状況報告

① 西村専門家（公衆衛生学）

ⓐ 飲料水 Check について

１月から Ministry of public Health および Environmental Health Division でも飲料水の Check が可能になり，準備を始めている。

本年４月までは我々のプランに従い，継続，５月以降は別に企画されると思われる。詳細は不明。これらのタイ側の動きは，我々にとっても望ましいものであり，ＰＨＬと中央及びＰＣＭＯの関係は将来とも続けられることになったと思われる。

１月のスケジュールは不定。

ⓑ 保健所活動の状況調査

ほぼ集計完了。Interim report 作成中。この内利用状況調査 data は集計がまだ終っていない医療・保健機関の実態，一般的健康指標等の data の分析と併せ report を作成する。

ⓒ Household Servey

その後 Contact していないため，現状は不明，Chanthaburi へ帰り次第 Contact をとり data の集計に入る予定

ⓓ 視聴覚教材費関係

津野氏より便りあり，懸案の前書き案について，最終決定を伝達３月の Symposium に間に合うよう仕事を進めることを依頼。この他，武衛先生，長谷川先生のところでも原稿が着々と進行中の模様なので，次回に詳しく紹介したい。

② 武衛専門家（医動物学）

ⓐ 蚊の Pictorial key が完成した。

ⓑ 幼若ホルモン類似物質 Altosid による蚊の幼虫駆除テストは１２月下旬に終了した。

ⓒ ＤＭＥに保存するための蚊の標本整理に入った。

③ 伊藤専門家（ウイルス学）

ⓐ 先月（１２月）に阪大微研の深井孝之助教授が来タイされたのを機会に，ウイルス学的業務推進上の諸問題について指導をうけた。

ⓑ Chanthaburi で採集した蚊からの virus 分離試験（第２回目）を実施中

ⓒ Chanthaburi において domesticated peg から採血した血清 Sample について日本脳炎ウイルス感染に対する抗体検査を継続実施中。日脳ウイルス抗体保有率は約９０％と相変

らず高い。

④ 宮崎専門家

ⓐ Prapokklao Hospital, Chanthaburi の検査科

Pathology, Clinical Chemistry, Bacteriology, Virology, Hematology, Clinical Microbiologyおよび Blood Bank に及ぶ検査科の陣営総数６４名の最近の活動状況について紹介

ⓑ Quality Control

今月のＱＣ問題に関連して，ＰＳ（Pooled Serum）とＨ.Ｌ.Ｓ（High Level Serum）とを無作為的に順序を変えて測定した。

Ｐ.Ｓの成績及びＨ.Ｌ.Ｓの成績とも相対的に良好であった。

以　上

第２回目専門家会議は昭和５８年２月４日㈮９：３０分開始，

司会は宮崎専門家。

1982年度第11回専門家会議

日　時：1983年2月4日(金)　9:30～11:00AM
場　所：DMS Expert Room（Bangkok）
出席者：長谷川チームリーダー，渡辺調整員
　　武衛，伊藤，西村，田中，宮崎各専門家
司会・記録：宮崎専門家

1. 長谷川チームリーダー
   - 田中専門家の着任と紹介，主にBangkok DCPにて細菌学を担当，Cholburi より要請もあったのでCholburi，亦Chanthaburiも時々指導
   - チームリーダー会議への出席
     2月6日(月)より2月18日(金)まで
     国内委員会が2月15日(火)に開催されるので要望事項があれば討議を。
   - Interim Report の原稿を2月20日までに提出されたい。タイ語の表題，著者名 Summary を必ずつけること。
   - 携行機材リストの提出について
     次年度分として提出したので1人分40万円を限度として至急作成してほしい。
     限度額超過については各専門家間で相互に融通しあってほしい。
2. 渡辺調整員
   - 田中専門家の着任，2月1日TG 601便DCPにて1カ年の予定（細菌学）
   - Symposium（3月14日～3月18日）の準備
     Invitation letter の印刷完了
     技術普及対策費もJICA BKK OFFICEに到着ずみ
   - 1982年度第3四半期決算報告（700万円）
     研究費の入金が収入として1月分も入っているので注意
   - Expert List（1983.1）現在分の配布
   - 第5次タイ国社会経済計画（仮訳）の配布（意見があれば述べてほしい。）
3. 田中専門家の自己紹介
   - テーマ，方針については目下検討中
4. 武衛専門家
   - 蚊の図式検索表が完成した。
   - Interim Report に着手（以下のもの）
     A. 蚊の生態に関するもの

B. ヌカカの分布調査（家畜衛試の井岡氏と共に）

C. チャンタブリに於けるアノフェレス蚊の駆除，野外テスト（Mr. Poonyos）

○ ＤＭＥの標本整備のための材料の採集同定にあたった。今後の仕事の主目標としたい

5. 伊藤専門家

○ Virus．血清学的診断法の改良

ホルマリン固定で安定化したgoose赤血球がヒト被検血清中のアルボウイルスＨＩ抗体の測定にあたり，Fresh．Goose ＲＢＣと同等の感度で使用出来ることが分った。

○ 1982年１０月にChanthaburi 地区の飼育ブタから採血して得た被検血清についてＪ・Ｅ抗体の有血及びその力価を調査

２９検体が100％Positive（anti body）同時に実施したDengue Ⅰ，Ⅱ，Ⅲ及びⅣ型Virusの抗原に対してもＨＩ抗体がPositiveヒトgroup specific（gs）抗体によるものと思われるが今後再調査したい。

更に他のgroupに属するChicken guuga Virus抗原に対してはＨＩ抗体が原注であった（４：１０）。

豚におけるSecondary Infectionが問題である。

6. 西村専門家

○ 飲料水の細菌学，生化学的検査のための体制づくりが大切。（タイ側の体制確立）目下予算及び組織づくりが急務，なぜならばタイ公衆衛生省保健局環境衛生部にて飲料水の検査が開始されたので我々の計画をそのまま移行することになった。

今後の活動にどのような変化がおこるか不明

○ 保健所及びその利用状況調査

３月末までにデータ整理を実施したい。

○ House hold Survey

先月末看護大学校より全データを受領資料が多く任期中のまとめは不可能。

資料が多く任期中のまとめは不可能。

完了は帰国（３．３１）後２カ月以内にする。

○ Haspital のComputer

ようやく軌道にのったが，機械側に問題が多くProgramの開発がおくれている。

7. 宮崎専門家

○ Quality Control の中間報告

注意力の不足が多くHuman Control が先決のようである。

Symposium．Iuterim Report 作成に向けてまとめたい。

○ 豚血清の採取は順調に進み５８年７月まで続けたい。

次回は３月１１日(金) 司会 西村氏。 （以上 宮崎 記）

1982年度第12回専門会議

日　時：1983年3月11日(金) 9:30 ～ 11:30AM

場　所：DMS，7階カンファレンス・ルーム(Bangkok)

出席者：長谷川リーダー，渡辺調整員
武衛，伊藤，宮崎，田中，西村各専門家
尚，来泰中の深井国内委員長が出席された。

司会・記録：西村専門家

1. 長谷川チーム・リーダー

1) 昭和57年度業務報告作製の件

各担当分野に関しての業務報告を作製・提出して戴きたい。

2) Symposiumの件

14日以降のSymposiumについて，夫々出来る限りの協力をお願いしたい。

3) Dr. Panchittaの招待の件

25日の招待について，一括してお祝いを贈りたいので御了承願いたい。

4) 通訳割振りの件

Symposiumの際の日本語通訳助手（チャラ・日本語科学生）を，日本よりの来訪者と専門家の組み合せで割振りしたので，ご了承願いたい。

2. 渡辺調整員

1) Symposiumへの日本からの参加者について，日本からのmissionは3月12日(土)JL714にて来泰，同時に専門家との懇親会をナライ・ホテルで持ちたい。

2) 専門家の帰国

西村，渡辺の両専門家は任務を終え，3月31日JAL 462(8:50)にて帰国の予定

3) JICA長谷川理事の来泰

3月27日から29日までの予定で，長谷川理事が来泰される。

"人ずくりセンター"関連

4) キュービクル型電源安定装置すえ付専門家の派遣予定。

小泉専門家が5月18日から2週間の予定で来泰する。

チャンタブリでの受入れ方を宮崎専門家にお願いしたい。

3. 各専門家業務報告

① 武衛専門家（医動物学）

4月1日～8日の予定でDMEのstaffに同行し，南タイ5県へ調査旅行する予定。ネッタイイエカ，ネッタイシマカ及びイエバエの薬剤感受性ないし抵抗性の調査

② 田中専門家（細菌学）

1） Division of Clinical Pathology の現状とこれからのプラン

ⓐ Campylo bacter の isolation

ⓑ Clostridium Clifficile の isolation

ⓒ Enterotoxic E. coli （ＬＴ）の examination

全んどの enteric pathogen はＤＣＰで分離同定可能。しかし，ⓐはWeak point .ⓑ，ⓒの検査は行われていない。

2） Lagionella pneumophila の分離，同定

environmentol source（水，土，etc ）と Cliniccl source より分離・同定の予定（ epidemiological servey ）

3） Public Health Laboratory （ Chanthaburi ）

現状ではこれ以上手を広げるのは無理と思われる。現在はClinical Lab として作動，これに対し，長谷川リーダーから Chonburi のＰＨＬの方が新らたな仕事の受け入れ体 制は良いので検討するよう，助言があった。

③ 伊藤専門家（ウイルス学）

1） Chanthaburi の蚊からのVirus 分離について報告

感染組織培養液（培養細胞とともに，３回凍結融解した）の超遠心沈澱からウイルス粒子を検出，電顕像観察（試料の調製及び写真撮影は Virus Research Institute のMrs. Suramga SAGUANWONGSE ）から来泰中の深井孝之助阪大教授によって，写真の粒子が形態学的にみて，Virus 粒子であることを確認し得た。

2） Chanthaburi 地区のブタ血清の日本脳炎（ＪＥ）抗体について，ＨＩ試験ではDeng Virus とＪＥ Virus との間に交差がみられ中和試験による区別が必要となって来た。本件に関しても深井教授のご指示により検討を進めることになっている。

④ 宮崎専門家（生化学）

Chanthaburi．ＰＫＫ病院生化学検査室において，Internal Quality Control．International External Quality Assessmentを実施，検査値の異常の発見と，検査室ー利用者（ Dctor ）間のCommunication の確立に努めている。Human factor equipment factor．試薬その他の factor が複雑に関連して，検査値の異常が起こっている。

Quality Control 以前の問題も多く，この点を中心に Symposium に発表したい。

⑤ 西村専門家（公衆衛生学）

1） ＰＨＣ実施において重要な担い手となるHealth Center の実態について分析中，コンピュータの故障のため，利用者実態の分析は不可能となった。Symposium は Health Center の Activities を中心に報告したい。

2） Household survey については，整理が出来ていないので，帰国後２カ月以内に報告書

基礎データを提出したい。

3) HP Computer について

病院総計プログラムの開発，改良を進めているが，Disk drive が故障のため，仕事を中断せざるを得なくなった。

修理には約3万B必要とのことで善処をお願いしたい。

PROGRESS REPORT I

THE PROMOTION OF PROVINCIAL HEALTH SERVICES PROJECT

(Chanthaburi Project)

January - March, 1982

Department of Medical Sciences, Ministry of Public Health

Yod-se, Bangkok 1 Thailand

Distribution of copies :-

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Deputy Director-General, Department of Medical Sciences (2)
Director, Virus Research Institute
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Dr. Khunthong Sukatipanta, Assistant Chief, Provincial Medical Officer, Chanthaburi
Miss. Paradee Mamechai, Division of Provincial Health Laboratory Services

ACTIVITY I

Strengthening of Provincial Health Laboratory (PHL) and Side-room Laboratory (SRL), Chanthaburi.

1. Strengthening of the PHL as a clinical diagnostic laboratory

1.1 Clinical chemistry

No further progress

1.2 Clinical Hematology

a. Number of white blood cell count, automated method : 5929
b. Number of red blood cell count, automated method : 4
c. Number of platelet count, phase-contrast method : 136
d. Number of test, Partial thromboplastin time : 22
e. Number of test, Prothrombin time : 42

1.3 Virology

a. Detection of HB_s Ag and Anti HB_s

Sera from patients were examined for HB_sAg and Anti HB_s during January 1982 to March 1982

The results are shown in Table I

Sources of specimen	HB_sAg			Anti-HB_s		
	No. of specimen	No. of positive	Percentage	No. of specimen	No. of positive	Percentage
Patients	48	13	27.08	1	0	0

b. Serodiagnosis of DHF suspected patients

Six cases of recent DHF were detected among twenty five samples submitted during January 1982 - March 1982

2. Strengthening of the PHL as a public health laboratory

2.1 Examination of fecas for surveillance of diarrheal diseases

2.1.1 Number of specimen from PCMO & district hospitals : 241
Number of specimen positive for enteropathogens : 37
2.1.2 Number of specimen from Prapokklao Hospital : 1,720
Number of specimen for enteropathogens : 269

2.2 Bacteriologic examination of food and water

2.2.1 Water, number of specimen : 127
2.2.2 Food, number of specimen : 13

3. Strengthening of the SRL in the four district hospitals

The laboratory activities of four SRL during the period of three months are listed as follows ;

3.1 TAMAI DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain-Pathogen	= -
- Gram stain - G.C.	= -
- AF stain - TB	= -
- Blood parasitology-Malaria	= 860
- Stool parasitology-Protozao:Helminths	= 15

HAEMATOLOGY

- Haematocrit	= 220
- WBC count	= 215
- Diff. count	= 223
- Pregnancy test	= 45
URINE ANALYSIS	= 176

3.2 KLUNG DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens	= 19
- Gram stain - G.C.	= 19
- AF stain - TB	= 14
- Blood parasitology-Malaria	= 1,050

HAEMATOLOGY

- Haematocrit	= 254
- Haemoglobin	= 254
- WBC count	= 250
- Diff. count	= 262
URINE ANALYSIS	= -

3.3 LAEMSINGHA DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens	= 9
- Gram stain - G.C.	= 5
- AF stain - TB	= 16
- Wet preparation - Fungi	= 3
- Blood parasitology-Malaria	= 187
- Stool parasitology-Protozoa : Helminths	= 35

HAEMATOLOGY

- Haematocrit	= 72
- Haemoglobin	= 53
- WBC count	= 36

- Diff. count = 36

URINE ANALYSIS = 69

3.4 PHONG NUM-RON DISTRICT HOSPITAL

MICROBIOLOGY

- Gram stain - Pathogens = 26
- AF stain - TB = 40
- Blood parasitology - Malaria = 1,969
- Stool parasitology-Protozoa:Helminths = 7

HAEMATOLOGY

- Haematocrit = 25
- Haemoglobin = 26
- WBC count = 12
- Diff. count = 12

URINE ANALYSIS = 138

ACTIVITY II

Strengthening function of the Virus Research Institute (VRI)

1. Arbovirology.

1.1 Production and Standardization of arbovirus reagents.

1.1.1 Production of antigen

Dengue-2 SA antigen 239x0.5 ml.

1.1.2 Production of reference antisera.

-

1.2 Train personnel in the field of arbovirology.

-

1.3 Give assistance or advice to PHL Chantaburi.

-

2. Respiratory Viruses.

2.1 Sero-epidemiological survey of respiratory viruses in Chantaburi.

2.1.1 Survey in normal population in difference age group for antibodies to Influenza, Adeno and Respiratory Syncytial viruses.

Serum specimen are collecting.

Activity II Strongthoning function of the Division of Medical Entomology (DME).

1. Rodent study

1.1 Preliminary study of population density of urban rodent in Thamai.

The DME has had attempted to study the population density of urban rodents. Thamai is selected for this study. In November and December 1981 the study area was mapped and sampling sites were located. The study area is 20.7 hectares. inwhich there are 500 houses. 210 houses were selected by random sampling for placing wire live rodent traps. Three traps were placed in one house, 630 traps were placed per week, the traps were checked everyday and the captured animals were recorded and brought back to the laboratory for identification. The trapping were done continuously for 6 weeks then stopped two weeks and resumed again one more week. The number of animals collected during the last week was small and it was the end of budget period, the study was therefore temporary stopped. It will be resumed in the next season.

1.2 A study on the efficacy of different kinds of rodent traps.

The study was carried out at Nongbua village of 3.79 hectares with 104 houses, about 4 people/house. Thirty houses were randomly selected for traps placing in the kitchen. In one kitchen six kinds of traps, one each, were placed. Three live traps in one corner and three snap traps in another corner. The traps were placed every night for ten nights by changing the positions and animals collected every day. The results were statistically analysed.

Results

Live traps were more suitable for general trapping, especially Rattus exulans. Local wire live traps and local snap traps were more efficient than Japanese traps.

2. Mosquito vectors study

2.1 Seasonal prevalence of Culex vectors of Japanese B Encephalitis.

2.2 Seasonal prevalence of Aedes albopictus.

The DME staff have been working under the supevision of Japanese expert (Dr. Buei) studying the mosquito vectors 2.1, 2.2. The technical report is in the activity V.

ACTIVITY II

Strengthening function of the Division of Clinical Pathology (DCP)

1. Laboratory for Bacteriology

1.1 Serotyping of enteric pathogens from PHL chanthaburi :

Salmonella typhi	1
Other Salmonella	12
Shigella	112
E.coli	33
V.parahaemolyticus	69
Other	2
Total	229

1.2 Supply of antisera to Chanthaburi PHL :

Shigella	10	ml.
Salmonella	4	ml.
E.coli	14	ml.
Total	28	ml.

2. Laboratory for Parasitology

2.1 Angiostrongylus cantonensis found in the lungs

Area	No. examined	No. Pasitive
Thamai - Jan.	129	14
Feb.	217	8
March.	36	4
April.	-	-
Total	382	26 (=6.80%)

2.2 Endoparasites of rats that could be human infection

	No.examined	No.pasitive		
		Hn	Hd	Rs
Thamai - Jan.	129	-	20	2
Feb.	217	-	23	2
March.	36	-	2	2
April.	-	-	-	-
Total	382	-	45 (11.78%)	6 (1.57%)

Note: Hn = Hymenolepis nana

Hd = Hymenolepis diminuta

Rs = Railliotina Siriraji

ACTIVITY II

Strengthening function of the Division of Food Analysis (DFA)

1. In order to solve the analytical problems concerned with the analysis of coloring matter in food as well as speeding up the analytical work, liquid ion-exchange resin method was recommended.

2. Gas chromatographic method was introduced for the examination of volatile substances which migrate from various kinds of plastic food container.

3. Sixty-five samples of ice, supplied and drinking water from Chantaburi were analysed for safety. Three samples of water supply at school contain ammonia 0.225, 0.220 and 0.400 ppm. while the limited level is 0.1 ppm. It should be noticed that the organic substance may absorbed from the toilet which is located near the well.

   Lead content of 0.13 ppm. was found in one sample of bottle water. The amount is quitely high, for drinking water should not contain lead more than 0.10 ppm.

Activity II

Strengthening function of the Division of Public Health Laboratory Services (DPHLS)

1. Supply

   1.1 Chemical reagents have been supplied regulary to Chonburi Reginnal Health Lab. Chanthaburi P.H.L.

   1.2 Bacteriological media and antisera have been supplied regulary to PHL Chonburi and Chanthaburi

2. Repairing Equipment

   2.1 Equipment of PHL Chonburi have been repaired

   2.2 Equipment of PHL Chanthaburi have been repaired

ACTIVITY III

Strengthening of Epidemiological Surveillance

Provincial Chief Medical Office, Chanthaburi (PCMO)

Mobile Medical Services

May 10, 1982 at Ban Sum Rong, Pong Num Ron District

Patient attention	160
Dental care	17

ACTIVITY IV

Training - None

ACTIVITY V

V-1 Operational research in Virology

V-1-1 Research on arbovirus infection in Chanthaburi area

Rubella virus

Production of rubella virus hemagglutinin in tissue culture was studied. The concentration of bicarbonate in tissue culture medium played an important role in the production of rubella virus hemagglutinin (HA). The production of rubella virus HA was stimulated by addition of excessive dose (0.56% - 0.7%) of bicarbonate. The result will be published in "Interim Report III".

V-1-2 Entomological and ecological studies on the arbovirus vector mosquito

Survey on adult mosquito

During January to March, mosquito collections were carried out at the five locations: Muang (municipality), Tagad Ngao, Laem Sing, Pak Nam Krachae and Makam, by using light traps.

A total of 25 species of mosquitoes were collected. The species composition varied by the collection sites. It was generally shown that the population densities of *Cultx tritaeniorhynchus* decreased markedly in dry season. However, *Culex gelidus* in Muang was abundant during the period from the latter half of the rainy season to the latter half of the dry season. *Cx. fatigans* was abundant in the dry season and scarce in the rainy season.

Survey on mosquito breeding

During January to March, a survey was made on mosquito breeding. A total of 15 species of mosquito larvae were collected. Total of 363 mosquito larvae, belonging 15 species, were found from 9 kinds of different habitats: Artificial container 3, Ground pool 2, Well 2, Rock pool 1, Pond 1. From Artificial container and Well, 6 species of mosquito larvae were found respectively. *Culex (Lophoceraomyia) sp. 36* from "Well" showed biggest number (109) and 82 of *Culex* sp.35 followed in the number of larvae in the same habitat. From Artificial container, 78 individuals of *Armigerea subalbatus* was the biggest and *Aedes aegypti* were found in the same breeding place.

These results will be reported in "Interim Report III".

Control of mosquito larvae in Makam district

Using monomolecular oil (ISA-2-OE), control study for *Anopheles* species have done at Makam from December, 1981 to January, 1982. Japanese expert in Medical Zoology consulted this work.

V-2 Analysis on causative agents of GI disease

V-2-1 Comparison of serotype between the year 1980 and 1981 in the isolates in Cholburi Hospital

Shigella - Number of isolates of each year were 81 and 59, respectively. In 1980, nearly half of them (38 - 46.9%) were *Shigella flexneri* 1b *and S. sonnei* (21 - 28.4%) followed. But in 1981, nearly 3/4 were *S. flexneri* 2a (43 - 72.9%) and *S. f.* 1b found only 8 cases (13.6%).

Salmonella - Total 74 isolates (belongs 18 species) were found in 1980, and 116 (belongs 16 species) in 1981. *S. krefeld* showed biggest number in each year, but rate of this species doubled in 1981 (77 - 66.4%) compared with 1980 (22 - 29.7%).

Vibrio - In 1980 total number of isolates was 246 and in 1981 it was 163, *V. parahemolyticus* (04:K8) showed biggest number in 1980 (22 - 13.5%) and in 1981 *V. parahemolyticus* (Out:Kut) found in biggest (33 - 13.4%).

Escherichia - Number of isolates for both year were 29 and 15, respectively. In 1980 *E. coli* (044:K74) found in biggest number (11 - 37.9%), but 1981 this type could not find at all.

About new type of *Vibrio* group (group F) survey started in Cholburi laboratory in this quarter.

V-2-2 Antibiotic resistant pattern of pathogenic bacteria in Cholburi district

Against 11 antibiotics (Chloramphenicol, Amikacin, Kanamycin, Tobramycin, Tetracycline, Ampicillin, Cafalotin, Carbenicillin, Colimycin, Gentamycin and Cotrimoxazol) antibiotic resistant pattern were checked for isolates bacteria in Cholburi district. *Shigella* (77), *Salmonella* (100) and *Escherichia coli* (108) showed very high resistance against Totracycline, and to Chloramphenicol, Ampicillin, Cefalotin and Carbenicillin they have rather high resistance. But to Amikacin only some of *E. coli* showed some resistance and Tobramycin and Gentamycin were effective for these pathogens. For *V. parahemolyticus* (144) Tetramycin showed high effectivity but for Ampicillin, Carbenicillin and Colimycin they showed high resistance.

These results will be reported in "Interim Report III".

V-3 Operational research on community participation in health promotion.

V-3-1 Medical service

On 10th of January at Ban Sam Rong and 22nd of March at Tagad Ngao, medical service carried out and 54 and 165 persons attended for this service, respectively. The results of stool examinations at that time were as follows.

V-3-1-1 Bacteriological examination (Sam Rong)

No. of examination	No. of positive		% of positive
58	*P. shigelloides*	5	12.1%
	V. parahemolyticus	1	
	NAG vibrio + V. para.	1	

V-3-1-2 Parasitological examination

		No. of examinat.	No. of positive Ev	To	HW	Ta	Op	% of positive
SamRong	Male	55		2	4	1		
	Female	36		1	4		1	
	Total	91		3	8	1	1	14.3%
TagadNaao	Male	34	1		1			
	Female	27			1			
	Total	61	1		2			4.9%

V-3-2 Water check

In February bacteriological and chemical examination continued on 44 samples from the same places with last progress report.
By the bacteriological examination from almost all samples (41/44 - 93.2%) some bacteria were found and Caliform bacteria were detected from one third of samples (23/44 - 36.4%). It should be rather important fact that *Salmonella* group F and *P. shigelloides* were found final water and well water used for drinking purpose. The results of chemical examination were not so serious. Almost all samples were under the limitation of Thai regulation, except one well water of preliminary school showed over high NH_3 value over than Thai regulation. These results showed in next two tables.

Results of bacteriological examination on water samples

1-2, February

	No. of examined	No. of samples some bacteria found	No. of samples Caliform found	Pathogen found
Final water	2	2 (10 - 26)	0	
Well water	5	5 (10 - 300)	3 (4 - 16)	*P. shigelloides*
Original water	3	0	0	
Final product	3	2 (5 - 1600)	1 (3)	
Treated water	4	4 (20 - 46)	2 (1 - 5)	
Ice	4	3 (41 - 280)	1 (2)	
Rain water	3	3 (10 - 100)	2 (8 - 14)	

22-23, February

Final water	2	2 (16 - 80)	1 (8)	
Well water	5	5 (LA - 66)	3 (1 - 4)	
Original water	2	2 (LA - 169)	0	
Final product	3	3 (LA - 570)	1 (20)	
Treated water	4	4 (LA - 90)	1 (2)	
Ice	4	4 (LA - 140)	1 (4)	

Results of chemical examination on water samples

		No. of exam.	pH	NH_3	NO_2	NO_3	$KMnO_4$	Solid	Hard-ness	Cl^-	F^-	Fe^{3+}	Pb^{2+}
1 - 3/Feb.	Final water	2	(6.20-6.65)	(0.009-0.010)	(ND)	(0.002-0.005)	(2.53-3.16)	(61- 66)	(6- 24)	(1.8-2.1)	ND	(0.25-0.30)	(0.01)
	Well water	5	(4.35-5.65)	(ND -0.228)	(ND -0.011)	(0.005-1.828)	(1.42-2.05)	(47-481)	(12-114)	(1.8-198.5)	ND	(0.04-0.20	(ND-0.08)
	Original water	3	(4.85-6.35)	(ND -0.034)	(ND -0.003)	(0.006-0.361)	(ND -2.21)	(43-176)	(12-156)	(2.5- 72.0)	ND	(ND -0.12)	(ND-0.08)
	Final product	3	(4.55-6.25)	(ND -0.013)	(ND -0.001)	(0.002-0.567)	(0.38-1.26)	(29-169)	(4-198)	(0.7- 88.6)	ND	(0.05-0.10)	(ND-0.09)
	Treated water	4	(5.35-6.65)	ND	(ND -0.002)	(0.006-0.309)	(0.79-2.84)	(14-109)	(12- 46)	(5.3- 12.4)	ND	(0.03-0.22)	(ND-0.01)
	Ice	4	(4.70-6.80)	(ND -0.119)	(0.001-0.003)	(0.009-0.134)	(2.53-56.88)	(10- 77)	(4- 77)	(2.5- 94)	ND	(0.03-0.15)	(ND-0.05)
	Rain water	3	(6.95-7.40)	(ND -0.010)	(0.001-0.002)	(0.005-0.013)	(1.42- 1.89)	(98-143)	(66-102)	(5.0-5.1)	ND	(0.01-0.06)	(ND)
22-24/Feb.	Final water	2	(6.70-7.00)	(0.058-0.063)	(0.002-0.003)	(0.003-0.016)	(1.74-3.32)	(49- 53)	(15- 21)	(ND-1.4)	ND	(0.05-0.08)	(ND)
	Well water	5	(4.40-5.65)	(0.013-0.400)	(ND -0.11)	(0.14 -0.540)	(ND -2.21)	(33-102)	(11- 97)	(4.6-197.3)	ND	(ND -0.18)	(ND-0.03)
	Original water	2	(5.00=6.85)	(0.029-0.052)	(0.001-0.002)	(0.031-0.076)	(1.74-2.21)	(51- 97)	(38- 59)	(6.4- 67.9)	ND	(0.06-0.17)	(0.03-0.10)
	Final product	3	(4.90-6.50)	(0.002-0.003)	(ND -0.001)	(ND -0.119)	(ND -1.42)	(11-100)	(4- 53)	(ND- 73.0)	ND	(ND-trace)	(ND-0.08)
	Treated water	4	(5.40-6.95)	(ND -0.073)	(0.001-0.003)	(0.004-0.417)	(1.42-2.69)	(77-230)	(10- 26)	(1.4-36.1)	ND	(0.01-0.05)	(ND)
	Ice	4	(5.30-6.65)	(ND -0.016)	(ND -0.001)	(ND -0.004)	(0.95-2.84)	(13-544)	(2- 15)	(ND- 7.1)	0.3	(ND-0.03)	(ND)
	Thai regulation		6.5 - 7.5	0.1	0.1	4	-	1,000	300	250	1.5	0.50	0.1
	Japanese regulation		5.8 - 8.6	ND	ND	3	3 - 5	200	100	30	0.8	0.07	0.1

V-3-3 Checking of Food Shops and Restaurants

As the target to be checked, 14 food shops and restaurants were selected and following samples were collected from each target :

1. Ice for drinks
2. Washing water (before use)
3. Rain water for drinking
4. Stool samples from workers.

V-3-3-1 Results of bacteriological examination

	No. of examin.	No. of samples positive for some bacteria	No. of samples Caliform found	No. of samples pathogen detected
Ice for drinks	14	14($1.0X10^1$-$1.0X10^3$)	1 ($2.0 X 10^2$)	0
Washing water	14	12($7.0X10^0$-$1.6X10^2$)	1 ($3.2 X 10^1$)	*P.shigelloides* 1 NAG vibrio 1
Rain water	1	1 ($1.0 X 10^3$)	1 ($5.0 X 10^2$)	0

V-3-3-2 Result of parasitological examination on stool samples

	No. of examined	No. of positive				% of positive
		Ss	HW	Tt	Cl	
Male	53		15			
Female	44	1	12	1	1	
Total	97	1	27	1	1	30.9 %

V-3-4 Village Medical Service News

In this quarter, "Village Medical Service News" No. 9 and No. 10 were published and distributed to sanitarians and midwives of Heal Centers in Chanthaburi Province and to communicators of project fields.

V-4 Researches in medico-zoological field in the model area.
In this quarter, some works of this field have been done, but results will be reported in next progress report.

V-5 To make researches in other related fields as necessary.

V-5-1 Hygienic surveys of plastics in Thailand

60 samples of palstic cup, dish, bowl, spoon, lunch box, ice cube tray etc. were surveyed from January to March in 1982. All of them were made of polyethylene or polypropylene, and migration test was carried out according to the Japanese Food Sanitation Law for plastic container. Results showed that they had no problems for consumption of potassium permanganate and heavy metals, but there was some problems for volatile residue. When water was used as eluting solvent, 19 samples (31.7%) were over limit, and 4% acetic acid was used as eluting solvent, 16 samples (26.7%) were over limit. It means that the plastics seemed to contain large amount of additives, such as increasing agent, antioxydant, plasticizer etc.

V-5-2 Determination of coloring matters in dried shrimp and shrimp paste

Using new method which used by liquid anion exchange resin (Amberlite LA-2), 21 samples of dried shrimp and 37 samples of shrimp paste were surveyed. These results showed that 3 samples of dried shrimp (14.3%) contained Orange II or Rhodamine B and 13 samples of shrimp paste (35.1%) contained Rhodamine B. These colors are not permitted as food-color in Thailand as well as in Japan, therefore they should confirm spectro-photometric after eluting colors from paper developed.

These results will be published in "Interim Report III".

PROGRESS REPORT II

THE PROMOTION OF PROVINCIAL HEALTH SERVICES PROJECT

(Chanthaburi Project)

April - June 1982

Department of Medical Sciences, Ministry of Public Health

Yod-se, Bangkok 1 Thailand

Distribution of copies :-

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Miss. Paradee Mamechai, Division of Provincial Health Laboratory Services

ACTIVITY I

Strengthening of Provincial Health Laboratory (PHL) and Side-room Laboratory (SRL) Chanthaburi.

1. Strengthening of the PHL as a clinical diagnostic laboratory

1.1 Clinical Chemistry

The regular activity is expected to be resumed in July 1982.

1.2 Clinical Hematology

a. Number of white blood cell count, automated method : 7039
b. Number of red blood cell count, automated method : 0
c. Number of platelet count, phase-contrast method : 239
d Number of test, Partial thromboplastin time : 62
e. Number of test, Prothrombin time : 60

1.3 Virology

a. Detection of HB_s Ag and Anti HB_s

Sera from patients were examined for HB_sAg and Anti HB_s during April 1982 - June 1982.

The results are shown in Table I

Sources of specimen	HB_sAg		
	No. of specimen	No. of positive	Percentage
Patients	63	19	30.2

b. Serodiagnosis of DHF suspected patients.

No cases of recent DHF were detected among five samples submitted during April 1982 - June 1982.

2. Strengthening of the PHL as a public health laboratory.

2.1 Examination of fecas for surveillance of diarrheal diseases.

2.1.1 Number of specimen from PCMO & district hospitals : 44
Number of specimen positive for enteropathogens : 14
2.1.2 Number of specimen from Prapokklao Hospital :1679
Number of specimen for enteropathogens : 396

2.2 Bacteriologic examination of food and water.

2.2.1	Water, number of specimen	= 24
2.2.2	Food, number of specimen	= 161

3, Strengthening of the SRL in the four district hospitals

The laboratory activities of four SRL during the period of three months are listed as follows:

3.1 TAMAI DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain-Pathogen	= 9
- Gram stain-G.C	= -
- AF stain - TB	= 10
- Blood paraditology-Malaria	= 1335
- Stool parasitoology-Protozao : Helminths	= 11

HAEMATOLOGY

- Haematocrit	= 408
- WBC count	= 391
- Diff, count	= 390
- Pregnancy test	= 40
URINE ANALYSIS	= 231

3.2 KLUNG DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens	= 20
- Gram stain - G.C.	= 21
- AF stain - TB	= 15
- Blood parasitology - Malaria	= 555
- Stool parasitology	= 25

HAEMATOOLOGY

- Haematocrit	= 313
- Haemoglobin	= 313
- WBC count	= 239
- Diff, count	= 231
URINE ANALYSIS	= 235

3.3 LAEMSINGHA DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens	=	29
- Gram stain - G.C.	=	4
- AF stain - TB	=	19
- Wet preparatin - Fungi	=	4
- Blood parasitology - Malaria	=	236
- Stool parasitology - Protozoa :Helminths	=	3

HAEMATOOLOGY

- Haematocrit	=	73
- Haemoglobin	=	106
- WBC count	=	68
- Diff, count	=	68
URINE ANALYSIS	=	205

3.4 PHONG NUM-SON DISTRICT HOSPITAL

MICROBIOLOGY

- Gram stain - Pathogens	=	5
- AF stain - TB	=	6
- Blood parasitology - Malaria	=	1,588
- Stool parasitology - Protozoa : Helminths	=	2

HAEMATOLOGY

- Haematocrit	=	76
- Haemoglobin	=	43
- WBC count	=	43
- Diff, count	=	43
URINE ANALYSIS	=	148

ACTIVITY II

Strengthening function of the Virus Research Institute (VRI)

1. Arbovirology.

1.1 Production and Standardization of arbovirus reagents.

Supply dengue type-1 antigen 10 amps, dengue type-4 antigen 10 amps and pool DHF 5 amps to virus diagnostic laboratory in PHL. Chanthaburi Province.

1.1.1 Production of antigen.

Dengue type-2 SA antigen 0.5 ml.x 96 amps.

1.1.2 Production of reference antisera.

-

1.2 Train personels in the field of arbovirology.

-

1.3 Give assistance or advice to PHL.

-

2. Respiratory viruses.

2.1 Serological survey of Respiratory Syncytial Virus (RSV) in Chanthaburi.

2.1.1 During September to October 1981, serological survey of antibody to Respiratory Syncytial Virus of 207 healthy persons from Klung, Ta-mai, Pong Numron and Leam-Singha districts and also the patients from Muang district who came to hospital, any illness other than illness of respiratory tract in Prapokklao Hospital, the age of the persons from whom sera were collected varies from less than 1 year to over 50 years. The microneutralization test against RSV was performed at VRI.

The antibody examination is under study.

Activity II Strengthening function of DME.

1. Mosquito vectors study

Mosquito collection via Monk wood light traps was carried out in Chaiyaphum Province during June 21 to 25. The mosquitos collected in 8 traps during 2 hours/night for four nights were 2594. Mansonia spp. was found in high density 49.1%. The Japanese B Encephalitis vectors were found as follows :- Cx tritaeniorhynchus 27.8%, Cx fuscocephala 10.3% and Cx gelidus 3.5%. Others were Culex spp., Aedes spp., Anopheles spp. and Armigeres spp.

Larval collection in rice field was also done. The predominant species were Anopheles spp. and Cx pseudovishnui. The J.E. vectors were found as well in low density.

2. Biological Control

2.1 Laboratory testing on the toxicity of Bacillus thuringiensis israelensis against Aedes albopictus larvae from Chanthaburi.

Tests of second instar Aedes albopictus larvae, Chanthaburi strain to Bti were carried out. Two series of tests were done one series in petridishes (30 ml/dish) and another series in white plastic containers (200 ml/container). The results showed that the Bti was more effective against Aedes albopictus than Aedes aegypti.

2.2 Isolation for local pathogens in mosquito larvae collected from different places.

101 larval specimens collected from Tak, Trad and Rayong Provinces were cultured for pathogenic bacilli. Three strains of Bacillus thuringiensis and 8 strains of Bacillus sphaericus were isolated. The strains have been kept for further studies.

ACTIVITY II Strengthening function of the Division of Clinical Pathology (DCP)

Laboratory for Bacteriology

1.1 No of strains submitted from Chanthaburi PHL for serotyping :

Salmonella typhi	2
Other Salmonella	21
Shigella	76
E.coli	14
Vibrio parahaemolyticus	23
Other	1
Total	137

1.2 Amount of antisera and antigen supplied to Chanthaburi PHL:

Salmonella antisera	42	ml
Shigella antisera	23	ml
E.coli antisera	29	ml
Widal antigen	600	ml

Activity II

Strengthening function of the Division of Food Analysis (DFA)

Twenty - five water samples from Chantaburi were analysed at Water Analysis Section. They were 4 , 16 and 5 samples of bottled water , supplied water and treated water respectively. It was found that one sample of bottled water - " Rose " brand contained 0.13 ppm. of lead. which is higher than the limited level (0.1 ppm.)

About iron content , the maximum permissible level is - 0.5 ppm. but we found 0.6 to 1.3 ppm. in four samples of supplied water.

It was noticed that 32% of different kinds of water have pH lower than 6.5

Activity II

Strengthening function of The Division of Provincial Health Laboratory Services (DPHLS)

1. Chemical reagents, bacteriological media and antisera have been supplied regularly to Chonburi Regional Health Lab. as follows :-

1.1 Sodium acetate (500 gm.)	1	bottle
1.2 Bleaching powder (1 lb.)	1	bottle
1.3 Ammonium acetate (500 gm.)	1	bottle
1.4 Sodium azide (100 gm.)	1	bottle
1.5 TCBS Agar (300 gm.)	11	bottles
1.6 SS Agar (500 gm.)	3	bottles
1.7 MacConkey Agar (500 gm.)	4	bottles
1.8 Standard Method Agar (500 gm.)	6	bottles
1.9 EMB Agar (500 gm.)	2	bottles
1.10 Corn meal Agar (1 lb.)	1	bottle
1.11 Nutrient broth (500 gm.)	2	bottles
1.12 Trypticase soy Agar (1 lb.)	3	bottles
1.13 Trytose (1 lb.)	3	bottles
1.14 Proteose pepton No. 3 Agar (1 lb.)	2	bottles
1.15 Trypticase soy broth (1 lb.)	4	bottles
1.16 Thiourea (25 gm.)	1	bottle
1.17 Hemoglobin (100 gm.)	1	bottle
1.18 Brain Heart Infusion Agar (500 gm.)	4	bottles
1.19 Lactose (500 gm.)	2	bottles
1.20 Bacto Agar (1 lb.)	1	bottle
1.21 Pathogenic E.coli polyvalent I, II	1	set
1.22 Salmonella antisera	1	set
1.23 Shigella antisera	1	set
1.24 Vibrio cholera antisera	1	set

2. Antisera and glassware have been supplied regularly to Chanthaburi P.H.L. as follows:-

2.1 Pathogenic E.coli polyvalent I, II	1	set
2.2 Shigella group B	1	bottle
2.3 Vibrio Cholera antisera	1	bottle
2.4 Petridish	216	pairs
2.5 Erlenmeyer flask(2000 ml.)	8	pieces
2.6 Test tube (20 x 150 mm.)	250	tubes
2.7 Filter paper No. 1 (1 ea.)	40	boxes
2.8 Lens paper	10	packes

Activity II

Progress Report of Chon-buri Hospital for April to June 1982

No.	Description	April	May	June
1.	Microbiology	3,898	4,297	5,963
2.	Blood for Serology	900	1,254	1,304
3.	Stool Examination	5,463	5,547	5,561
4.	Mycology	332	354	422
5.	Complete Blood Count	10,949	11,238	11,788
6.	Blood Chemistry	5,497	5,161	7,330
7.	CSF Examination	106	335	293
8.	Urine Examination	5,190	5,314	5,999
9.	Sanitation	214	36	56
10.	Reagent Preparation (C.C.)	356,010	429,009	458,500
11.	Rabies Fluorescent Technique	31	27	23
12.	Hemoglobin Typing	27	24	36
13.	Hepatitis B Antigen	15	24	36
14.	Protein Fraction	18	26	28
15.	Bacteria Fluorescent Technique Examination	195	208	226

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Progress Report of Panus-Nikom Hospital

1.	Blood film for Malarial	432	470	742
2.	Complete Blood Count	432	470	742
3.	Blood Chemistry	118	100	119
4.	Blood for VDRL	164	178	201
5.	Blood for Serology	31	32	51
6.	Stool Examination	65	52	60
7.	Urine Examination	820	812	994
8.	Microbiology	245	286	217
9.	Bleeding Donox (C.C.)	8,500	10,950	9,400
10.	Blood Transfusion (C.C.)	15,750	10,950	12,800
11.	Urine Pregnancy test	71	57	57

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Progress Report of Laboratory Services, Bang-lamung Hospital

No.	Description	April	May	June	Total
1.	Sputum Examination	11	27	28	66
2.	Gram's Stain	85	66	74	225
3.	V.D.R.L.	131	126	128	385
4.	Complete Blood Count	45	30	63	138
5.	Hematocrit	151	104	192	447
6.	Blood Malaria Parasite	119	83	127	329
7.	Blood Grouping	32	16	77	125
8.	Donor Blooding	28	9	36	73
9.	Gross Matching	12	12	32	56
10.	Widal Agglutination	8	7	8	23
11.	Bleeding Time	-	-	1	1
12.	40% KOH Fa Fungus	-	-	1	1
13.	Urine Examination	395	295	404	1,094
14.	Usine Pregnancy Test	44	36	40	120
15.	Stool Examination	19	18	39	76
16.	Rectal Swab and Culture	33	32		
17.	F.B.S.	31	19	31	81
18.	B.U.N	3	2	4	9
19.	Creatinine	6	2	5	13
20.	Uric acid	2	0	1	3
21.	Cholesterol	5	1	1	7
22.	Total Protien	4	1	1	6
23.	Albumin	3	1	1	5
24.	Bilirubin	5	4	5	14
25.	Alkaline Phosphatase	5	4	4	13
26.	S.G.O.- Transaminase	5	4	4	13
27.	S.G.P.- Transaminase	5	4	4	13
28.	Serum Amylase	-	-	1	1

****

Activity II

Pregress Report of Ban-Bung Hospital in 1982

No.	Description	April	May	June	Total
1.	Complete Blood Count	264	351	457	1,072
2.	Malaria	335	440	545	1,320
3.	rine analysis	108	111	160	379
4.	Stool exam		28	280	358
5.	Widal's test	5	4	74	83
6.	Pregnanc 's test	22	47	47	116
7.	Blood Chemistry	8	5	10	23
8.	Gram's Stain	35	54	50	139
9.	Acid Fast Stain	1	5	3	9
10.	V.D.R.L.	44	59	63	166
11.	KOH	-	-	10	10
12.	Urine for ANC.	168	211	239	618

****

Activity III

Strengthening of Epidimiological Surveillance - None

Activity IV

Training - None

Activity V.

Progress Report (April - June 1982)

V.1 To make research on mosquito borne diseases in model area on virological, epidemiological and entomological studies.

V.1.1 Application of freeze-dried red blood cells to viral hemagglutination and HA-inhibition test.

Formalinized, freeze-dried, one-day-old chick erythrocytes ($FDCRBC_s$) were agglutinated by the Dengue Virus (type 4) HA antigen.

The susceptibility of $FDCRBC_s$ for the HA antigen was higher than fresh, one-day-old chick erythrocytes in two kinds of diluents, BS 9.0 and PBS. Furthermore $FDCRBC_s$ showed a tendency of looseness for PH-dependency in the HA reaction of Dengue Virus (type 4).

V.1.2 Production of viral diagnostic hemagglutinin (HA) in tissue culture.

The minimum essential medium (MEM, Earle base) was enriched in accordance with supplimentation of Bovine serum albumin (BSA) or lactalbumin hydrolysate (LA) and their mixture, in order to compare the production of Rubella Virus HA antigen in different tissue culture media.

The highest titer of Rubella Virus HA was obtained in the basal MEM medium. The supplement of BSA and LA in the basal MEM medium eas inhibited the production of the Rubella Virus HA antigen.

V.1.3 Entomological and ecological studies on the arbovirus vector mosquito (Survey of mosquitoes in Chantaburi).

V.1.3.1 Su ey on mosquito breeding.

During April to June, a survey was made on mosquito breeding. Total of 472 mosquito larvae qere found from five kinds of different habitats, Artificial container 3, pond 3, Puddle 2, Well 4, Rubber grove 3. A total of 20 species of mosquitoes were collected which included *Aedes*, 2 spp.; *Culex*, 9 spp.; *Anopheles*, 8 spp. and *Toxorhynchites*, 1 sp.

From wells and ponds, 9 and 6 species of mosquito larvae were found respectively, From rubber grove, *Culex (Eumranomyia) brevipalpis* and *C. (Lophoceraomyia) spiculosus* were found commonly.

V.1.3.2 Survey on adult mosquitoes.

During April to June, mosquito collection were carried out at the five locations: Muang (municipality), Tagad-Ngao, Laem Sing, Pak Nam Krachae and Makham, by using light traps.

A total of 33 species of mosquitoes were collected. The species composition varied by the collection sites. It was generally show that the population densities of *Culex tritaeniorhynchus* were rather high from begining of the rainy season.

V.2 To analyse on causative agents of G.I. disease in the model area.

V.2.1 Checking of water and ice for general uses.

These checking of water and ice were excuted six times in this period. Number of the samples that were collected and examined, were 53 in total for chemical examination and 83 in total for bacteriological examination. Excuted rate was 97.6% or more of planed samples.

Not only detection of pathogenic bacteria but also total bacterial counts, coliform bacteria counts were tried, collected from "water supplies", "deep wells" and "water containers". Pathogenic bacteria was not detected, but there was one sample that showed more than 1.6×10^3 totla bacterial counts. Chemical examination which was done on same samples showed high value of Fe^{3+} in 9 samples.

V.5 To make researches in other related fields.

V.5.1 Hygienic surveys of plastics in Thailand.

32 samples of plastic container were surveyed from April to June 1982. Plastic containers were made of polyethylene, polypropylene, polycarbonate and melamine which were made in Thailand. All of them were carried out by migration test according to the Japanese Food Sanitation Law.

Phenol and Formaldehyde were not detected in Malamine. Volatile residue of 8 samples (25%) were over limit. Moreover, one sample had high value for consumption of potassium permanganate. These samples had no problem about heavy metals.

V.5.2 Improvement for the determination of Histamine in canned and dried seafoods.

Until now the determination of histamine in food has been carried out by Japanese method, i.e. colorimetric determination after purification by column chromatography. But it takes one hour to carry the column chromatography, so some amount of histamine changes to histidine during the process. To prevent this changes during analytical procedure, improved method used by solvent extraction instead of column chromatography.

Total of 18 samples (Canned seafood: Tuna in oil 3; Tuna in brine 3; Shrimp in brine 3. Dried seafood: dried shrimp 3; dried fish 3; dried squid 3). Were tested by this method.

Average histamine values of "Tuna in oil", "Tuna in brine" and "Shrimp in brine" were 0.199, 0.191 and 0.170 mg/g, respectively, and those values were seemed not to be toxic to human being. Average histamine values of "Dried shrimp", "Dried fish" and "Dried squid" were 0.129, 0.241 and 0.226 mg/g, respectively. In the case of dried fish and dried squid, those values were approximately two times higher than that of fresh one. Therefore, we had better determine the amount of histamine to check freshness of the sea foods.

Miscellaneous

Expert

- Mr. Masaaki Tuno, Expert in Microbiology went back to Japan on April 14, 1982. After his one year service period.

- Mr. Takeo Miyazaki, Expert in Clinical Chemistry came to Thailand on June 29, 1982 with his one year period.

Fellowships

- NO fellowship during this period.

Equipment

Almost all equipment which was programmed to come in Thailand by Japanese fiscal year 1981 had been delay and arrived on May 1982.

Total amount of C I F price is ¥ 18,301,823.-

PROGRESS REPORT III

THE PROMOTION OF PROVINCIAL HEALTH SERVICES PROJECT

(Chanthaburi Project)

July - September 1982

Department of Medical Sciences, Ministry of Public Health

Yod-se, Bangkok 1 Thailand

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ACTIVITY 1

Strengthening of Provincial Health Laboratory(PHL) and Side-room Laboratory(SRL) Chanthaburi.

1. Strengthening of the PHL as a clinical diagnostic laboratory

1.1 Clinical Chemistry

With the assistance from Japanese Expert in clinical Chemistry, a lot of "Omega serum" were supplied to the laboratory for running of quality control

The results are shown in Table I

Table I

	Quality Control (Omega Serum)					Various Allowable Coefficient Variation(%)			
	Expected Value	$\bar{X}$	H L	S.D	CV(%)	Tonk's	Barnett	Cotlove	WHO
- Glucose	267	264	↓	5.09	1.93	10.0	5.0	4.7	7.7
- Total Protein	6.6	6.8	↑	0.68	10.01	7.0	4.3	3.2	3.9
- Albumin	4.14	3.89	↓	0.22	5.68	10.0	7.1	3.5	7.5
- Total Cholesterol	255	302	↑	18.4	6.09	10.0	-	8.2	7.6
- Na	153	154.4	↑	2.39	1.55	1.8	1.5	0.4	1.6
- K	6.1	6.09	-	0.16	2.63	10.0	6.2	3.4	2.9
-Cl	112.0	110.0	↓	1.70	1.55	2.0	2.2	0.9	2.2
- B U N	48.4	51.1	↑	2.69	5.26	10.0	7.4	7.5	5.7
- Creatinine	5.1	4.5	↓	0.19	4.19	10.0	-	-	8.9
- Uric acid	9.7	8.8	↓	0.28	3.18	10.0	8.3	12.3	7.7
- Total Bilirubin	5.1	4.55	↓	0.22	5.06	10.0	20.0	-	19.2
A L P	-	105.5	-	5.3	5.02	(10.0)	-	-	-
G O T	88.6	82.9	↓	8.15	9.83	(10.0)	-	-	-

1.2 Clinical Hematology

a. Number of white blood cell count, automated method : 5337

b. Number of red blood cell count, automated method : 4

c. Number of platelet count, phase-contrast method : 296

d. Number of test, Partial thromboplastin time : 66

e. Number of test, Prothrombin time : 101

1.3 Virology

a. Detection of HB_sAg

Sera from patients were examined for HB_sAg during July 1982-September 1982

The results are shown in Table II

Table II

Sources of specimen	HB_s Ag		
	No. of specimen	No. of positive	Percentage
Patients	61	16	26.22

b. Serodiagnosis of DHF suspected patients.

Seven cases of recent DHF were doteced among twenty six samples submitted for examination during July 1982-September 1982, constituting 26.92 percent positive rate.

2. Strengthening of the PHL as a public health laboratory.

2.1 Examination of feces for surveillance of diarrheal diseases.

2.1.1 Number of specimen form PCMO & district hospital : 11

Number of specimen positive for enteropathogens : 2

2.1.2 Number of specimen from Prapokklao Hospital : 1332

Number of specimen for enteropathogens : 468

2.2 Bacteriologic examination of food and water

2.2.1 Water, number of specimen = 81

2.2.2 Food, number of specimen = -

3. Strengthening of the SRL in the four distric hospitals

The laboratory activities of four SRL during the period of three months are listed as follows;

3.1 TAMAI DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain-pathogen = -
- Gram stain- G.C. = 7
- AF stain - TB. = 3
- Blood parasitology - Malaria = 1118
- Stool parasitology - Protozao : Helminths = 3

HAEMATOLOGY

- Haematocrit = 398

- Haemoglobin = -
- WBC Count = 360
- Diff.count = 356

URINE ANALYSIS = 269

3.2 KLUNG DISTRICT HOSPITAL (JULY, AUGUST)

MICROBIOLOGY & Parasitology

- Gram stain-Parasitology = 15
- Gram stain - G.C. = 15
- AF stain - TB = 7
- Blood parasitology - Malaria = 388
- Stool parasitology-Protozoa-Helminths = 22

HAEMATOLOGY

- Haematocrit = 254.
- Haemoglobin = 254
- WBC count = 185
- Diff. count = 173
- VDRL = 82

URINE ANALYSIS = 176

3.3 LAEMSINGHA DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens = 8
- Gram stain - G.C. = 4
- AF stain TB = 20
- Wet preparation - Fungi = 2
- Blood parasitology - Malaria = 196
- Stool parasitology - Protozoa : Helminths = 367

HAEMATOLOGY

- Haematocrit = 96
- Haemoglobin = 84
- WBC count = 56
- Diff. count = 56
- Others = 66

URINE ANALYSIS = 43

3.4 PHONG NUM-RON DISTRICT HOSPITAL

MICROBIOLOGY & Parasitology

- Gram stain - Pathogens = 18
- AF stain - TB = 2
- Blood parasitology - Malaria = 1845
- Stool parasitology-Protozoa : Helminths = 12

HAEMATOLOGY		
- Haematocrit	=	258
- Haemoglobin	=	-
- WBC count	=	66
- Diff. count	=	66
- Others	=	47
URINE ANALYSIS	=	204

Quarterly Report Chanthaburi project (July-September 1982)

Plan of action for strengthening function (Activity II)

and research (Activity V) of VRI.

1. Arbovirology

1.1 Production and Standardization of arbovirus reagents
Supply dengue type-4 antigen 2 amps and JaGAr # 01 antigen 2 amps to virus diagnostic laboratory in PHL Chanthaburi Province

1.1.1 Production of antigens
Dengue type-2 SA antigen 0.5 ml. x 192 amps.

1.1.2 Production of reference antisera.

1.2 Train personel in the field of arbovirology.

1.3 Give assistance or advice to PHL.

2. Respiratory virus.

2.1 Serological servey of respiratory syncytial virus (RSV) in Chanthaburi.

2.1.1 Serological survey of antibody to RSV. of 207 healthy persons from Klung, Tar-mai, Pong Namron and Leam Singha districts and patients from Muang district who came to hospital with any illness other than illness of the respiratory tract. The age of persons

from whom sera were collected varied from less than 1 year to over 50 years, The sera were collected during September to November 1981.

The microneut ralization test was performed at VRI. The level 1:4 dilution of serum indicates the Presence of antibody. Approximately 87.5% of samples revesled RSV. antibodies; the results were shown in Table 1 and Figure 1. The RSV antibody at the age group of under one year and 1-2 year were 72.0 and 76.7 respectively, then gradually in creased to 92.6, 92.3 and 100.0 at the age group of 3-4, 5-9 and 10-19 respectively. The level reached the peak at the age group of 10-19 year. In young adults were decreased, it was 84.0 88.0 and 96.0 at age group of 20-29, 30-39 and 40- $\geq$ 50 years respectively. The population who came to attended at Prapokkloaw hospital in Chanthaburi had highly previous RSV infection.

Table 1. Serological survey of antibody to RSV at Prapokkloaw hospital in Chanthaburi 1981.

Age group year	No. tested	NT antibody titer	
		< 1:4 (%)	1:4 - 1:64 (%)
< 1	25	7 (28.0)	18 (72.0)
1-2	30	7 (23.3)	23 (76.7)
3-4	27	2 (7.4)	25 (92.6)
5-9	26	2 (7.7)	24 (92.3)
10-19	25	0 (0.0)	25 (100.0)
20-29	25	4 (16.0)	21 (84.0)
30-39	25	3 (12.0)	22 (88.0)
40-≥ 50	25	1 (4.0)	24 (96.0)
Total	208	26 (12.5)	182 (87.5)

ACTIVITY II STRENGTHENING FUNCTION OF DME

1. Mosquito vectors study:

1.1 A small scale trial on the use of methoprene (Altosid SR 10) an insect growth regulator against Aedes aegypti was carried out in 60 houses in Bangkhen village. With the concentrations of 2 to 3 mg/lt. the methoprene was effective for 2 months.

1.2 A moderate scale field trial on the use of fenitrothion 2% plus tetramethrin 0.05% against Aedes aegypti. After 3 applications of the formulation via Tifa truck mounted machine plus one A bate application the Aedes population in the area was suppressed more than two months.

2. A study on human lice (head lice)

A team composed of entomologists, mosquito scouts and driver from the Division had visited schools in rural area (Amphoe Pak Chong Nakhon Ratchasima) and examined 356 school children in order to investigate the head lice infestation. The team had given advice about sanitation at home and demonstrate to the children how to get rid of head lice.

ACTIVITY II Strengthening function of the Division of Clinical Pathology (DCP)

1. Laboratory for Bacteriology

1.1 Number of strains submitted from Chanthaburi PHL for serotyping :

Salmonella typhi	1
E. coli	13
Vibrio parahaemolyticus	68
Total	82

1.2 Amount of antisera and antigen supplied to Chanthaburi PHL : nil

Activity II

Strengthening function of the Division of Food Analysis (DFA)

Sixteen water supplies, eleven deep-well water and eighteen rain-water from Chanthaburi were analysed for safety.

Three water supplies at primary schools contained iron 0.7 to 1.2 ppm. when the standard level is 0.5 ppm.

All eleven deep-well water did not meet the standard of drinking water because of 0.7 to 30 ppm. iron, 504 to 880 ppm. total residue and 112 to 620 ppm. total hardness.

One sample of rain-water got 112 ppm. of total hardness when the highest permissible level is 100 ppm.

Activity II

Strengthening function of the Division of Provincial Health Laboratory Services (DPHLS)

1. Chemical reagents, bacteriological media, antisera and glass ware have been supplied regularly to Chonburi Regional Health Lab. as follows :-

1.1 Picric acid (100 gm.)	3	bottles
1.2 Molybdic acid (100 gm.)	2	"
1.3 O-Toluidine (1 lb.)	2	"
1.4 Hematoxyline stain (25 gm.)	3	"
1.5 Wright stain (25 gm.)	5	"
1.6 Phenol Red Indicator (25 gm.)	2	"
1.7 Lactose (500 gm.)	2	"
1.8 Bacto - Agar (1 lb.)	2	"
1.9 Trypticase Soy Broth (1 lb.)	2	"
1.10 Ox - bile Associated (1 lb.)	1	"
1.11 Brain Heart Infersion Broth (1 lb.)	2	"
1.12 SS. Agar (1 lb.)	2	"
1.13 Muller Hinton Agar (1 lb.)	2	"
1.14 McConkey Agar (1 lb.)	2	"
1.15 Lab Lemco Broth (500 gm.)	2	"
1.16 Agarose (10 gm.)	2	"
1.17 Blood Agar Base (500 gm.)	2	"
1.18 Potato Starch (500 gm.)	1	"
1.19 Tryptic Soy Agar (1 lb.)	2	"
1.20 Vibrio Cholera antisera (2 ml.)	1	set
1.21 Samonella Antisera (2 ml.)	1	"
1.22 Shiglella Antisera (2 ml.)	1	"
1.23 E.coli poly valent I, II (2 ml.)	1	"
1.24 VDRL Antigen	3	boxes
1.25 Petridish (15 x 100 mm.)	288	pairs

1.26 Screwcap tube 13 x 100 mm.	72 tubes
1.27 Lens paper	10 packes
1.28 Filter paper (11 cm.)	30 boxes

2. Antisira have been supplies regularly to Chanthaburi P.H.L. as follows:-

2.1 Shigella antisera (2 ml.)	2 sets
2.2 Pathogenic E.coli polyvalent I, II, III (2 ml.)	2 "
2.3 Vibriocholera antisera (2 ml.)	2 "
2.4 Widal Antigen (2 ml.)	4 bottles

Activity II

Progress Report of Chon-buri Hospital for July - September 1982

No.	Description	July	August	September
1.	Microblology	4,712	4,815	5,049
2.	Blood for Serology	1,390	1,478	1,670
3.	Stool Examination	5,668	5,544	5,909
4.	Mycology	302	353	520
5.	Complete Blood Count	12,364	11,020	12,054
6.	Blood Chemistry	7,092	9,175	5,492
7.	CSF Examination	249	412	335
8.	Urine Examination	6,259	6,445	6,672
9.	Sanitation Examination	50	154	30
10.	Reagent Preparation (cc.)	455	473	463
11.	Rabies Fluorescent Technique	26	28	32
12.	Viruses Hepatitis test	29	41	34
13.	Hemoglobin Typing	28	17	20
14.	Protein Fraction	14	26	12
15.	Bacteria Fluorescent Technique	8	7	3
16.	Detection Morphine in Urine	42	114	18
	Progress Report of Panus-Nikom Hospital			
1.	Blood film for Malarial	719	479	596
2.	Complete Blood Count	719	479	596
3.	Blood Chemistry	154	148	142
4.	Blood for VDRL	188	170	233
5.	Blood for Serology	32	28	33
6.	Stool Examination	65	47	38
7.	Urine Examination	844	878	797
8.	Microbiology	260	224	242
9.	Bleeding Donox (c.c.)	13,950	9,900	10,250
10.	Blood Transfusion (c.c)	17,500	11,500	17,300
11.	Urine pregnancy test	60	61	50

Progress Report of Laboratory Services of Bang-Lamung Hospital

No.	Examination	July	August	September	Total
1.	Sputum Examination for A.F.B.	21	19	30	70
2.	Gram's stain	77	66	63	206
3.	V.D.R.L.	131	188	216	535
4.	C.B.C.	64	63	94	221
5.	Hematocrit	124	145	259	528
6.	Blood Malaria Parasite	144	112	140	396
7.	E.S.R.	-	-	2	2
8.	Blood Grouping	23	38	105	166
9.	Donor Bleeding	24	12	43	79
10.	Cross Matching	19	23	30	72
11.	Widal Agglutination	4	10	11	25
12.	F.B.S.	32	33	43	108
13.	B.U.N.	4	5	6	15
14.	Creatinine	3	5	6	14
15.	Uric Acid	1	1	1	3
16.	Cholesterol	3	-	3	6
17.	Total Protien	1	-	-	1
18.	Albumin	1	-	-	1
19.	Bilirubin	1	1	1	3
20.	Alkaline Phosphatase	1	1	1	3
21.	SGO.- Transaminase	3	1	1	5
22.	S.G.P.- Transaminase	3	1	1	5
23.	Urine Examination	428	349	484	1,261
24.	Urine Pregnancy Test	41	49	52	142
25.	40% KOH. for Fungus	4	1	1	6
26.	Stool Examination	22	11	18	51
27.	Serum Amylase	1	-	-	1

Progress Report of Ban-Bung Hospotal

No.	Examination	July	August	September	Total
1.	Complete Blood Count	494	335	304	1,133
2.	Malaria	587	425	390	1,402
3.	Urine analysis	124	148	160	432
4.	Stool Examination	119	42	44	205
5.	Widal's Test	10	10	8	28
6.	Pregnancy's test	29	30	33	92
7.	Blood Chemistry	13	18	18	49
8.	Gram's stain	75	69	74	218
9.	Acid Fast Stain	1	421	10	432
10.	VDRL.	54	83	60	197
11.	KOH	9	12	15	36
12.	Urine for ANC.	196	218	243	662

Activity III

Strengthening of Epidemiological Surveillance

- None -

Activity IV

Training

- None -

Identified mosquitoes, *Culex tritaeniorhynches, CX. gelidus, CX. fuscocephala and Mansonia uniformus,* were pooled into test tubes, then used for virological study mentioned above.

V-1-4 Souvey on mosquito breeding.

During July to September, a survey was made on mosquito breeding. Total of 1106 mosquitoes larval were found from eight kinds of different habitals: *puddle 5, marsh 3, pond 1, rush land 1, well 1, bamboo stump 4, rubber grove 3, leaf axil 3.* A total of 18 species of mosquitoes were colledted, which included *Aedes, 1 sp; Culex, 12 spp; Anopheles, 2spp; Tripteroides, 1 sp; Mimomyia, 1 sp; Uranotaenia, 1 sp; and Malaya, 1 sp.*

V-1-5 Survey on adult mosquitoes.

During July to September, mosquitc collections were carried out at the five locations; Muang (municipality), Tagad-Ngao, Laem Sing, Pak Nam Krachae and Makam, using light traps.

A total of 5500 female adults mosquitoes, belonging 40 species, were colledted. Among the species collected, *Culex tritaenorhynchus,* the principal vectors of JE virus was the dominant species. High population density of *Cx. tritaeniorhynchus* was seen during the period from May to July. It was found that the number of mosquitoes rapidly decreased after August.

V-5 To make researches in other related fields.

V-5-1 Actual surveys of plastics in Thailand 112 samples of plastics in Thailand were hygienically surveyed according to the Japanese Food Sanitarian Law. All of them were such food containers as cup, dish, plate, bowl, vegetable oil bottle etc. Migration tests were carried out for polyethylene, polypropylene, polycarbonate, melamine, polystylene and polyvinylchloride. Moreover, material tests were carried out for polystylene and polyvinyl-chloride. Almost of them had big values of volatile residures. It means that the plastics seemed to contain large amount of additives, such as increasing agent, antioxydant, plasticizer etc. Therefore, Food Sanitation Law for plastics is ernestly required in Thailand.

V-5-2 Analysis of Health officer's activities in Health Centers in Chanthaburi Province. In July, for health officer in Chanthaburi we made investigation for their daily works in Health Centers. Questionnaire distributed for all of 68 Centers and they made an entry their daily records. Results are analysing by Mr. Nishimura now.

Activity V

Progress Report of July-September 1982

V-1 Operational research in virology.

V-1-1 Characterization of a filtrable agent isolated from a pool of mosquitoes which caught in Chanthaburi.

One pool of mosquito sample mentioned in article V-2-1 below, out of 21 pooles showed cytopathogenic effect (CPE) in the monolayer culture of mosquitoe's cells (established C6/36). Another characteristics of the filterable agent which revealed by this time are:

a) The main characteristic of CPE is a formation of typical multinucleated giant cells.

b) Serial passages of the filterable agent through the monolayer cultures of mosquito's cells are possible. And the infection titer usually reaches at the level of 1×10^6 $TCID_{50}$ (Tissue culture infection dose).

c) The pH value of tissue culture medium in which the filterable agent was inoculated, turns to acidic side quickly.

d) The filterable agent does not show any cross reactios to JE virus' or Dengue type 2 virus' specific immuno sera.

V-1-2 Seraepidemiological investigation for Japanese encephalitis (JE) virus.

The hemagglutination-inhibiting (HI) antibody against JE virus was tested on sera obtained from domesticated pigs. The HI-antibody for JE virus was detedted in high rate (80-90% in total 60 samples) in pig sera. This fact showed the dangerous situation for spreading of JE virus among human beings. And vaccination for JE virus infection for domesticated pigs and inhabitants in Chanthaburi migh be necessary.

This study will continue untill next July on 30 pigs sera per each month to know yearly change of JE titer in pig's sera.

V-1-3 Attempt to isolate arbovirus from field caught mosquitoes.

During the period of 16-20 August, mosquito collection were carried out at Tagad-Ngao. The vilage is situated in the plain area and surrounded by rice field. We selected two pigs site in this village as collecting place. Mosquitoes were caught by sucking tubes and hand-hold nets for 2 hours just after sunset.

Collected mosquitoes were kept at room temperature for few days to allow the engorged blood to be digested. Then, these mosquitoes were anesthetized with chloroform and identified under a stereoscope.

PROGRESS REPORT IV

THE PROMOTION OF PROVINCIAL HEALTH SERVICES PROJECT

(Chanthaburi Project)

October - December 1983

Department of Medical Sciences, Ministry of Public Health

Yod-se, Bangkok 1 Thailand

Distribution of copies :-

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Dr. Khunthong Sukatipanta, Assistant Chief, Provincial Medical Officer, Chanthab
Miss. Paradee Mamechai, Division of Provincial Health Laboratory Services

ACTIVITY I

Strengthening of Provincial Health Laboratory(PHL) and side - room Laboratory(SRL) Chanthaburi.

1. Strengthening of the PHL as a clinical diagnostic laboratory

1.1 Clinical Chemistry

The results of Quality Control using "Omega serum"(B Group) supplied by Japanese Expert in Clinical Chemistry,and locally prepared pooled serum (A Group) are shown in Table I.

Table I Quality Control (Oct - Dec 1982)

		B Group			A Group		
	Expected-Value	X	S.D	CV(%)	X	S.D	CV(%)
UN	48.4	49.6	3.23	6.5	34.2	1.54	4.5
UA	9.7	9.1	0.49	5.4	5.6	0.30	5.4
Creat	5.1	4.5	0.51	11.3	2.7	0.15	5.4
Prot	6.60	6.53	0.47	7.2	5.78	0.18	3.1
Alb	4.14	4.05	0.46	11.2	3.03	0.49	16.1
Glucose	267	258.6	13.66	5.3	100.1	5.99	5.9
T-ch	255	259.4	21.48	7.3	124.1	14.34	11.56
Na	153	155.4	2.18	1.4	127	1.50	1.2
Cl	112	110.5	1.66	1.5	94.8	1.79	1.9
K	6.1	6.10	0.15	2.4	4.88	0.08	1.74
ALP		104	18.5	17.8	28.5	3.22	11.3
SGOT	88.6	81.5	15.59	19.1	25.1	5.65	22.5
T.B	5.1	3.63	0.71	1.97	0.58	0.32	55.1
Number		17			29		

1.2 Clinical Hematology

a. Number of white blood cell count, automated method : 6879
b. Number of red blood cell count, automated method : 8
c. Number of platelet count,phase-contrast method : 689
d. Number of test, Partial thromboplastin time : 64
e. Number of test, Prothrombin time : 77

1.3 Virology

a. Detection of HB_sAg

Sera from patients were examined for HB_sAg during October 1982 - December 1982

The results are shown in Table II

Clinical Diagnosis	Total No.	HB$_s$Ag Positive	
		No.	%
Viral Hepatitis	2	-	-
CA liver + Cirrhosis	3	2	66.67
Malaria	2	1	50.00
Healthy Check	4	-	-
Unclassified Disease	50	11	22.00

b. Serodiagnosis of DHF suspected patients.

Seven cases of recent DHF were deteced among sixteen samples submitted for examination during October - December 1982 constituting 43.75 percent positive rate.

2. Strengthening of the PHL as a puplic health laboratory.

2.1 Examination of feces for surveillance of diarrheal diseases.

2.1.1 Number of specimen from PCMO & district hospital : 51

Number of specimen positive for enteropathogens : 20

2.1.2 Number of specimen from Prapokklao Hospital : 1942

Number of specimen for enteropathogens : 479

2.2 Bacteriologic examination of food and water

2.2.1 Water,number of specimen = 90

2.2.2 Food,number of specimen = -

3. Strengthening of the SRL in the four distric hospital

The laboratory activities of four SRL during the period of three months are listed as follows.

3.1 TAMAI DISTRICT HOSPITAL

MICROBIOLOGY & PARASITOLOGY

- Gram stain-Pathogen = -
- AF stain - TB = 15
- Blood parasitology - Malaria = 1031
- Stool parasitology - Protozao : Helminths = 89

HAEMATOLOGY

- Haematocrit = 169
- Haemoglobin = -
- WBC count = 215
- Diff.count = 218

URINE ANALYSIS = 301

3.2 KLUNG DISTRICT HOSPITAL (OCTOBER, NOVEMBER)

MICROBIOLOGY & PARASITOLOGY

- Gram stain-Pathogens = 15
- Gram stain - G.C = 15
- AF stain - TB = 6
- Blood parasitology - Malaria = 347
- Stool parasitology-Protozoa-Helminths = 63

HAEMATOLOGY

- Haematocrit = 244
- Haemoglobin = 244
- WBC count = 212
- Diff.count = 178
- VDRL = 82

URINE ANALYSIS = 224

3.3 LAEMSINGHA DISTRICT HOSPITAL

MICROBIOLOGY & PARASITOLOGY

- Gram stain - Pathogens = 19
- Gram stain - G.C = 16
- AF stain TB = 97
- Wet-preparation - Fungi = 17
- Blood parasitology - Malaria = 133
- Stool parasitology-Protozoa-Helminths = 10

HAEMATOLOGY

- Haematocrit = 106
- Haemoglobin = 106
- WBC count = 54
- Diff. count = 54
- Others = 57

URINE ANALYSIS = 255

3.4 PHONG NAM RON DISTRICT HOSPITAL

MICROBIOLOGY & PARASITOLOGY

- Gram stain - Pathogens = 26
- AF stain-TB = 13
- Wet-preparation - fungi = 2
- Blood parasitology - Malaria = 2776
- Stool parasitology-Protozoa-Helminths = 137

HAEMATOLOGY

- Haematocrit = 448
- WBC count = 91
- Diff. count = 91

URINE ANALYSIS = 385

Progress Report Chanthaburi project (October-December 1982)

Plan of Action for the strengthening function (Activity II) and research (Activity V of VRI.)

1. Arbovirology.

1.1 Production and Standardization of arbovirus reagents.

1.1.1 Production of antigen

Dengue-3 SA antigen 101 amps x 0.5 ml.

1.1.2 Production of reference antisera.

-

1.2 Train personel in the field of arbovirology.

-

1.3 Give assistance or advice to PHL.

-

.....

ACTIVITY II STRENGTHENING FUNCTION OF DME.

ACTIVITIES CARRIED OUT DURING OCTOBER - DECEMBER 1982

1. Training course on Vector Biology & Control
2. Workshop on Community participation in Vector Control

1. Training course : The Division of Medical Entomology had carried out a training course on "Vector Biology and Control"at Amphoe Phanus Nikhom, Cholburi Province during 15 to 18 November 1982. The objectives were to train health workers who have been responsible for vector control to understand the vector biology, ecology, control methodologies and safety use of pesticides. There were 33 participants all of them were health officers from Cholburi, Rayong, Chantaburi and Nakorn Nayok. One month after the training course the participants co-operated in the workshop for volunteers which being held at this Amphoe.

2. Workshop on "Community participation in Vector Control" : The workshop was held at Phanus Nikhom district on 23-24 December 1982. There were 97 participants, they were school teachers, chiefs of villagers, village scouts. The outcomes of the workshop could be summarized as follows:

2.1 Vector campaign could be done by local people the participants of the workshop would inform the people and bring their neighbours to assist in vector campaign.

2.2 They were to set up vector campaign teams to carry out larval source reduction via Abate application & simple sanitation.

2.3 They were to set up vector surveillance teams to monitor Aedes aegypti density in model area.

2.4 The Division of Medical Entomology was to provide Abate (larvicide) and necessary tools such as flash lights.

ACTIVITY II Strengthening function of the Division of Clinical Pathology (DCP)

Laboratory for Bacteriology

1. Number of strains submitted from Chanthaburi PHL for serotyping :

Salmonella	30
Shigella	119
E. coli	29
Vibrio parahaemolyticus	172
Other	3
Total	353

2. Amount of antisera and antigen supplied to Chanthaburi PHL :

2.1 Antisera

Salmonella	antisera	12	ml.
Shigella	antisera	16	ml.
E.coli	antisera	10	ml.
	Total	38	ml.

2.2 Antigen

Widal antigen	1,200	ml.

Division of Food Analysis

The activities during October to December 1982 are as follows :

1. Fifty - eight samples of different kinds of supplied and drinking water collected from Chantaburi were analysed at the Division of Food Analysis. About 46% of the samples were over standard limit. It was found that mainly of them have high level of iron , total hardness, chloride and total solids. Some of them have pH value 5.7 to 6.49 while the standard are 6.5 - 8.5.

Kinds	Sample analysed	Sample Violated
Treated water	4	-
Rain water	6	-
Water supplies	12	4
Bottled water	3	1
Shallow well water	22	13
Deep well water	8	6
Filtered water	3	2

Activity II

Strengthening function of the Division of Provincial Health Laboratory Services (DPHLS)

Chemical reagents, bacteriological Media, Glassware and antisera have been supplied regularly to Chonburi Regional Health Laboratory as follows :-

1. Wright stain (25 gm.)	5	Bottles
2. Isopropyl alcohol (1 L.)	1	Bottle
3. Sulfuric acid (2.5 L.)	1	Bottle
4. Sodium carbonate (1 kg.)	1	Bottle
5. Acid fuchin (25 gm.)	2	Bottles
6. Thiourea (25 gm.)	4	Bottles
7. Benzoic acid (500 gm.)	2	Bottles
8. Sodium tungstate (250 gm.)	2	Bottles
9. Brilliant green (25 gm.)	1	Bottle
10. Brilliant cresyl blue (25 gm.)	1	Bottle
11. Phenol crystal (500 gm.)	2	Bottles
12. Sodium acetate (1 lb.)	4	Bottles
13. Potassium Sodium Tartrate (500 gm.)	2	Bottles
14. Sodium hydroxide (1 kg.)	2	Bottles
15. O - Toluidine (1 L.)	1	Bottle
16. Brain Heart Infusion agar (1 lb.)	2	Bottles
17. Brain Heart Infusion broth (1 lb.)	1	Bottle
18. Nutrient agar (1 lb.)	2	Bottles
19. Nutrient broth (500 gm.)	2	Bottles
20. SS agar (1 lb.)	2	Bottles
21. Macoonkey agar (1 lb.)	2	Bottles
22. Lactose (500 gm.)	1	Bottle
23. Tryptose blood agar base (1 lb.)	1	Bottle

24. Tryptic soy agar (1 lb.)	1	Bottle
25. Standard Method Agar (1 lb.)	2	Bottles
26. T.C.B.S. Agar (300 gm.)	10	Bottles
27. Test tube 16 x 150 mm.	300	tubes
28. Screw cap tube 16 x 125 mm.	120	tubes
29. Filter paper 11 cm.	20	boxes
30. Water Bath (7 W TB 121)	1	set
31. VDRL antisera	3	boxes
32. Vibrio Cholera antisera	2	sets
33. Samonella antisera	2	sets
34. Shigella antisera	1	set
35. E. coli polyvalent I, II and III	1	set
36. Widal Antigen	1	set
37. Wiel Felix Antigen	1	set

Progress Report of Laboratory Services of Bang-Lamung Hospital

No.	Examination	October	November	December	Total
1.	Sputum Examination for A.F.B.	29	45	32	106
2.	Gram's stain	79	93	81	253
3.	V.D.R.L.	266	204	218	688
4.	C.B.C.	982	957	763	2702
5.	Hematocrit	177	214	149	540
6.	Blood Malaria Parasite	116	136	96	348
7.	E.S.R.	-	-	3	3
8.	Blood Grouping	75	111	66	252
9.	Donor Bleeding	41	16	35	92
10.	Cross Matching	16	17	20	53
11.	Widal Agglutination	7	11	10	28
12.	F.B.S.	31	45	31	107
13.	B.U.N.	4	9	4	17
14.	Creatinine	6	9	4	19
15.	Uric Acid	2	1	-	3
16.	Cholesterol	2	5	5	12
17.	Total Protien	2	2	2	6
18.	Albumin	2	2	2	6
19.	Bilirubin	30	7	5	42
20.	Alkaline Phosphatase	1	7	5	13
21.	SGO - Transaminase	1	7	5	13
22.	S.G.P. - Transaminase	1	7	5	13
23.	Urine Examination	1013	852	929	2794
24.	Urine Pregnancy Test	38	46	40	124
25.	40% KOH for Fungus	1	2	1	4
26.	Stool Examination	25	51	32	108
27.	Serum Amylase	-	-	2	2
28.	Stool Culture	48	78	57	183

Progress Report of Ban-Bung Hospital

No.	Examination	October	November	December	Total
1.	Complete Blood Count	323	385	341	1049
2.	Malaria	388	439	426	1253
3.	Urine analysis	155	149	126	430
4.	Stool Examination	51	49	22	122
5.	Widal's Test	12	10	16	38
6.	Pregnancy's test	57	35	40	132
7.	Blood Chemistry	20	18	17	55
8.	Gram's stain	57	62	47	166
9.	Acid Fast Stain	7	6	8	21
10.	VDRL.	48	69	166	283
11.	KOH	10	6	10	26
12.	Urine for ANC.	230	232	175	637

Activity II

Progress Report of Chon-buri Hospital for October-December 1982

No.	Description	October	November	December
1.	Microbiology	6,265	11,996	8,973
2.	Blood for Serology	1,370	1,673	1,508
3.	Stool Examination	6,100	6,254	5,581
4.	Mycology	103	311	486
5.	Complete Blood Count	11,874	11,909	11,687
6.	Blood Chemistry	7,050	6,730	6,672
7.	CSF Examination	822	128	200
8.	Urine Examination	6,296	7,171	8,109
9.	Sanitation Examination	52	94	90
10.	Reagent Preparation (CC.)	510	1,160	1,253
11.	Rabies Fluorescent Technique	37	33	40
12.	HAA Examination	35	22	18
13.	Hemoglobin Typing	23	23	22
14.	Bacteria Fluorescent Technique	3	1	5
15.	Detection Morphine in Urine	5	12	32
	Progress Report of Panus-Nikom Hospital			
1.	Blood film for Malarial	478	628	553
2.	Complete Blood Count	590	774	664
3.	Blood Chemistry	139	154	143
4.	Blood for VDRL	217	195	155
5.	Blood for Serology	61	51	41
6.	Stool Examination	41	55	44
7.	Urine Examination	752	822	719
8.	Microbiology	316	224	233
9.	Bleeding Donox (c.c.)	21,550	8,550	5,600
10.	Blood Transfusion (c.c.)	168,000	148,000	8,750
11.	Urine Pregnancy test	61	60	39

Activity V

Progress Report of October - December 1982

V-1 Operation research in virology

V-1-1 Application of formalinized goose red blood cells to arbovirus Hemagglutination-inhibition (HI) test.

Arbovirus HA and HI tests were effectively simplified by substitution of formalinized goose red blood cells (F G R B C)for fresh goose red blood cells. Compared to fresh goose red blood cells, FGRBC aggluti-nated with Japanese encephalitis (JE) and Dengue virus HA antigens over a wider range of pH and agglutinated with Dengue virus type 1 and type 4 antigen at double the titer. Comparative HI assay of human sera, using fresh and FGRBC with arbovirus antigens, showed that antibody titers were the same, or within one dilution of each titer.

V-1-2 Epidemiological Investigation on arbovirus in Chanthaburi Province : Sero-epidemiological investigation for Japanese encephalitis (JE)virus

As a part of viral epidemiological surveillance in Chanthaburi province, the hemagglutination-ingibition (HI) antibody to the Japanese encephalitis (JE) virus has been tested continuring from last quarter of this year. The test has done on sera collected from donestic pigs killed at slaughter-house monthly. The sera were separated from the clotted blood and stored at -20^{o}C until test.

The ages of pigs were from 4 to 8 moths old. But in spite of their short life span, the HI antibody to JE virus was detected very often (Oct.-100%, Nov. - 87%, Dec - 93%) Especially, in November, two pig sera showed most highest titer in this year,(x 1280 and x 2560 respectively).

V-1-3 Attempt to isolate arbovirus from field-caught mosquitoes

1. Mosquito collected at two locations, in pigsties, in the rural areas around Chantaburi. These sites are surrounded by scattered rice fields, which serve as breeding sites of Culex tritaeniorhynchus. Mosquitoes were caught by use the sucking tube and by waving a hand-hold net for 2 hour period just after sunset.

Collected mosquitoes were anesthetized with chloroform and identified under a stereoscope. Identified mosquitoes, Cx.

tritaeniorhynchus, Cx. gelidus. Cx. sitiens and Mansonia uniformis, were pooled according to the site, date and engorgement. A total of 30 pools of mosquitoes (2529 females) were obtained. the pools were kept frozen at -70°C until being processed.

V-1-4 Survey on mosquito breeding

During October to December, a survey was made on mosquito breeding.

Total of 567 mosquito larvae were found from ten kinds of different habitats:groung pool 8, rice field 1, pond 2, canal 1, pit 1, well 1, rock pool 3, bamboo stump 2, leaf axil 1, artificial container 1. A total of 34 species of mosquitoes were collected which included Aedes, 3 spp; Culex, 15 spp.; Anopheles, 9 spp.; Armigeres, 1 sp.; Orthopodomia, 1 sp.; Tripteroides, 1 sp. and Uranotaenia, 4 spp.

V-I-5 Survey on adult mosquitoes

During October to December, mosquito collections were carried out at Makham, by using light trap.

A total of 496 adults, belonging 28 species, were collected. Anopheles(Cellia)philippinensis was the most abundant species, representing 32 % of all mosquitoes collected. Greater numbers of An. philippin. were collected in December.

V-3 Operational research on community participation in health promotion

V-3-1 House - holder survey in some villages in Chanthaburi province.

By co-operational works of nurse students of Prapokklao Nursing Collage, from October to December we made house-holder survey by questionaire method. Students stayed in villager's house and asked about 100 items, such as construction of family, increase and decrease of number of each family, income, spend of money, occupation, nutrition and so on. The results are analyzing by computer now.

V-5 To make researches in other related field.

V-5-1 Quality control of biochemistry in PHL of Chanthaburi.

To know how PHL of Chanthaburi staff are proceeding their toutine works accurately quality control survey have done in this quarter of 1982. The results are analyzing and willbe reported in the symposium of March.

PROJECT: Promotion of Provincial Health Services.
Report of the 10th Coordinating Committee Meeting (2/1982)

Minutes of Meeting

A meeting of the committee was held at the Department of Medical Sciences' conference room 7th floor, Friday 22 October 1982 at 1.30 p.m.

Present Members

1.	Dr. Nadhirat Sangkavibha	Director-General Department of Medical Sciences, Chairman of the Committee.
2.	Mrs. Boonsalpa Boompitnand	For Director, Division of Food Analysis.
3.	Dr. Chaleay Sivasomboon	For Director, Division of Clinical Pathology.
4.	Dr. Sujarti Jatanasen	Director, Division of Epidemiology Ministry of Public Health.
5.	Dr. Tongpoon Vicharnratthakan	For Director, Division of Provincial Hospital. Ministry of Public Health.
6.	Dr. Kati Jirayus	Director, General Commnicable Disease Division. Ministry of Public Health.
7.	Miss Chindawan Kanisthachat	For Director, Division of Budget Analysis. The Budget Bureau.
8.	Dr. Amnuay Uttungkorn	Director, P.C.M.O. Chon Buri
9.	Dr. Damrong Bhanthumkosol	For Director, Prapokklao Hospital.
10.	Mr. Charlermsak Tongthammachart	For Director, Chon Buri Hospotal.
11.	Dr. Khuntong Sukatipanta	Director of Technical and Health Service Promotion, Chanthaburi.
12.	Dr. Somkiat Wungkobkiat	Chief, Scientific Instrument Center, Department of Medical Sciences.
13.	Dr. Nonglak Asavachinda	For Director, Virus Research Institute
14.	Dr. Mongkol Mokkhasamit	Director, Division of Provincial Laboratory Services. Secretary of the Committee.

15.	Dr. Boonluan Phanthumachinda	Director, Division of Medical Entomology, Assistant Secretary.
16.	Dr. Megumi Hasegawa	Expert Team Leader
17.	Dr. Kazuo Buei	Expert in Medical Zoology
18.	Dr. Ito	Expert in Virology
19.	Mr. Nishimura	Expert in Public Health
20.	Mr. Miyazaki	Expert in Clinical Chemistry
21.	Mr. Watanabe	Expert Coordinator
22.	Mr. Yutaka Noshiro	Assistant Resident Representative (JICA)
23.	Mr. Akira Kasai	Director of JICA

Absent Members

1. Director, Division of Rural Health
2. Representative, Office of the Civil Service Commission
3. Director, P.C.M.O. Chanthaburi
4. Mr. Tadaharu Goto, Representative from Embassy of Japan

The meeting was opened at 1.30 p.m., details of discussion on various topics are as follows:

1. Information by Chairman.

1.1 Dr. Somkiat Wungkobkiat was requested to translate Thai to English or Japanese for Japanese members.

1.2 The committee accepted the minutes meeting report of the 9th Coordinating Committee Meeting held on 25 March 1982, without any correction.

2. Appointment new Project Director.

Dr. Panchitta Ekachampaka, Deputy Director-General of the Department of Medical Sciences was appointed to be the Project Director since October 1982.

3. Expert's schedule 1982.

Dr. Hasegawa informed the members about six Japanese experts' status which are as follows:

Expert's name	Title	Termination date
1. Dr. Hasegawa	Expert Team Leader	31 March 1984
2. Dr. Buei	" in Medical Zoology	18 May 1983
3. Dr. Ito	" " Virology	2 July 1983
4. Mr. Nishimura	" " Public Health	19 Jan. 1983
5. Mr. Miyazaki	" " Clinical Chemistry	28 June 1983
6. Mr. Watanabe	" Coordinator	31 March 1983

Besides these members, JICA will send two more experts in the near future, but their name, position and arriving date are still unknown.

1. Expert in Clinical Microbiology (long term, 1 year)
2. Expert in Food Microbiology (short term, 3 months)

Another expert in Food Chemistry whom requested form this project would not come this year because Auto-analyzer for amino-acid could not be provided for this year due to budget limitation.

4. Fellowships' schedule 1982.

The Japanese Government had granted 2 fellowships as follows:

1. Mr. Charlermsak Tongthammachart.

   Training courses: 1. Rapid diagnostics for medical virology.
   2. Rapid diagnostics for clinical immunology.

   Training place: Tokyo Metropolitan Research Laboratory of Public Health, Japan.

2. Dr. Sumalee Boonmar.

   Training course: Virology " Viral Hepatitis

   Training place: Tokyo Metropolitan Institute of Medical Sciences, Japan.

5. Equipment and supplies received 1981-1982.

The list of equipment and supplies which will come in 1982 for each activity was presented as shown in annex I. Total amount of equipment and supplies will be 1/3 compared to the original request due to the JICA's budget limitation. Simultaneously, the importance of pre-discussion among each activity to set up the priority of equipment, practice use of catalogue for equipment and indication of necessity for English-written service manual/operation manual were discussed and agreed.

6. Training course at Chanthaburi Province.

Presented by Dr. Khuntong Sukatipanta (see annex II)

I. Inservice Training Programme for Public Health Officers.

7. Training course at the Department of Medical Sciences.

Presented by Dr. Somkiat Wungkobkiat (see annex III)

II. Inservice Training Programme in Laboratory Instrumentation.

8. Symposium " On the role of Public Health Laboratory for Promotion of Public Health ".

Presented by Mr. Watanabe (see annex IV)

Dr. Boonluan was assigned to be the secretary of Steering Committee which will be the responsible organization of this Symposium, and to set up the meeting as soon as possible. At the same time, the committee agreed the necessity of cooperation of expert on public health in this Symposium. Accordingly, the necessary procedure of extension till end of March 1982 of Mr. Nishimura, expert on public health will be done.

9. Preparation of request for 1983

Dr. Hasegawa presented the request's principles of equipment, experts and fellowships (annex V). These principles and procedure were agreed, on the other hand, the committee requested to JICA to get more number of fellowships. And also committee agreed to request before the end of January 1983 as its dead-line.

10. Miscellaneous.

Water works construction.

The construction started after the contract between JICA and constructor on February 1982. The wells drilling work and attached civil work of three wells at Ban Nongkan, Ban Samrong and Vicinity area are already finished.

Next step is water quality and quantity check. When the results are available, the Inspection committee will be held at Chanthaburi to investigate the results, after that the property will be transfered from Japanese Government to Thai Government.

On the other hand, time schedule of these works delayed with two major reasons as follows:

1. Failure of first well drilling point.
2. Changing of some specifications.

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Recorded by : Mrs. Amara Sirirojvisuth

Approved by : Dr. Mongkol Mokkhasamit
Dr. Boonluan Phanthumachinda

Tentative Equipment Provision Programme Fiscal year 1982

Activity	Division	No.	Equipment	Set	Remark
I	PHL. Chanthaburi	1-1-6	Spectrophotometer "Shimadzu"	1	
		1-1-7	Protable pH meter	1	
		1-1-8	Counting apparatus	1	
		1-2-1	Spare part for automatic blood cell counter	1	
		1-3-1	Reagents		
II	VRI	2-1-4	Personnel computer Sharp Modal MZ-80B	1	
	DME	2-2-7	Insect Box 16 X 20	160	
		2-2-8	Insect Box variouse size	50	
		2-2-9	Insect Pin	100	
	DCP	2-3-1	Autoclave Hiruyama	1	
	DFA	2-4-2	Copy machine		
	DPHLS	2-5-2	Stercoscopic Microscope	2	
	PHL Chon-buri	2-6-4	Test tube	2000	
		2-6-7	Vim-Silverman biopsy needle	5	
		2-6-8	Reagents		
V		5-1-1	Plain paper copier		
			Equipment Price ¥ 18,000,000.-		
			Deliverly coat ¥ 2,000,000.-		
			Total Price = ¥ 20,000,000.-		

Project: Promotion of Provincial Health Services

Inservice Training Programme (1982)

For Public Health Officers and Laboratory Technicians in Chanthaburi

---

I. Inservice Training Program for Public Health Officers

1. Background and justification

The co-operative project of Japanese and Thai government called Chanthaburi Project was set up in Chanthaburi to promote villager's health by quick determined diagnosis and sending specimens to the laboratory. It needs many levels of officers, so we should train them to know epidemiology.

2. Project goal

To increase the efficiency of health services by broaden the knowledge in epidemiology for health officers.

3. Objectives

1. Training them to understand the network of epidemiology.
2. Training them to know how to cooperate with this project.

4. Trainees

Trainees are selected from health officers of Health Centers in Chanthaburi

Group 1 52 persons

Group 2 51 persons

5. Lecturers and Instructors

Lecturers and instructors are invited from

5.1 Division of epidemiology Office of the Under-Secretary of State, Ministry of Public Health.

5.2 Department of Medical Sciences.

5.3 PCMO Chanthaburi

6. Curriculum

A 5-day workshop on epidemiology comprising 25 hours of lecture and 5 hours of discussion. Tentative schedules are shown in 12.

7. Location

Prapokklao Hospital, Chanthaburi province.

8. Budget

8.1 Travel allowance

8.1.1 Travel allowance for trainees from the place they live to the training place.

฿ 100 X 103 persons	= ฿	10,300.-

8.1.2 Travel allowance for instructors.

฿ 200 X 14 persons	= ฿	2,800.-

8.2 Instructor's fee

฿ 100 X 50 hours	= ฿	5,000.-

8.3 Per diem

8.3.1 Per diem for 103 trainees in 5 days

฿ 250 X 5 days X 103 persons	= ฿	128,750.-

8.3.2 Per diem for instructors from 5.1 and 5.2

฿ 300 X 14 persons X 2 days	= ฿	8,400.-

8.4 Expenditure for teaching materials (List of articles attached)	= ฿	11,300.-
Total	= ฿	166,550.-

9. Expecting results

1. Trainees know the scope of epidemiology.
2. Trainees can cooperate with this project.

10. Evaluation

1. Group discussion.
2. Observing during training.
3. Questionnaires.

11. Authority

1. Director of the Project.
2. Director of the Field Area.
3. Manager of Activity IV

12. Tentative Schedule of Public Health Officer at Prapokklao Hospital, Chanthaburi.

Date	Time	Subjects	N.B.
8,15 Nov 1982	8.30 - 8.45	Registeration	
	8.45 - 9.00	Opening ceremony	
	9.00 - 10.15	Story and objectives of the project	
	10.15 - 10.30	15 min. break	
	10.30 - 11.00	Speach of Japanese Expert	
	11.00 - 12.00	Present condition and problems of P.C.M.O.	
	12.00 - 13.00	Lunch time	
	13.00 - 15.00	Basic epidemilolgy	
	15.00 - 15.15	15 min. break	
	15.15 - 16.15	Role of public health officers and scope of epidemiology	
8,16 Nov 1982	9.00 - 10.00	Present condition, problems of epidemiology in Chanthaburi and how to solve.	
	10.00 - 10.15	15 min. break	
	10.15 - 12.00	Factors of epidemiological data	
	12.00 - 13.00	Lunch time	
	13.00 - 14.00	Diseases in the scope of epidemiology	
	14.00 - 15.00	Investigation of basic epidemiology	
	15.00 - 15.15	15 min. break	
	15.15 - 16.15	Vocabulary in epidemiology	
10,17 Nov 1982	9.00 - 10.00	Etiology and control	
	10.00 - 10.15	15 min. break	
	10.15 - 11.15	Collecting and transportation	
	11.15 - 12.00	Debates and discussion	
	12.00 - 13.00	Lunch time	
	13.00 - 15.00	Record and follow up	
	15.00 - 15.15	15 min. break	
	15.15 - 16.15	Record and follow up	

Date	Time	Subject	H.E.
11,13 Nov 1982	9.00 - 10.30	Laboratory services	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	Aceptic technique	
	12.00 - 13.00	Lunch time	
	13.00 - 15.00	Collecting and transportation	
	15.00 - 16.15	Common laboratory examination	
12,19 Nov 1982	9.00 - 10.30	The role of public health officers and laboratory technicians to malaria control	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	The role of public health officers and laboratory technicians to the research work of the project.	
	12.00 - 13.00	Lunch time	
	13.00 - 15.00	Croup discussion	
	15.00 - 16.30	Discussion from the report of group discussion	
	16.30 - 17.00	Brief the idea and close the training	
		**********	

Expense of materials in the training

Articles	Unit	Price for Unit	Total	M.E.
Slide film	10	250	2,500	
Slide light	2	500	1,000	
Ball pens	120	5	600	
Pencils	120	2	240	
Magic color	6 bxs	50	300	
Roneo paper	15 bxs	50	750	
Wax paper	5 bxs	150	750	
Poster paper	20	10	200	
Big white paper	6 bxs	40	240	
Foam	4	20	80	
Pin	5 dz	40	200	
Poster color	4	30	120	
Paper	2	45	90	
Small clip	12 dz	40	480	
Big clip	2 dz	85	170	
File	120	5	600	
Transparency	3 dz	200	600	
Pen for Transparency	1 dz	70	840	
Staples No. 10	10 dz	30	300	
Overhead light	2	450	900	
Two sides glue tape	2	250	500	
Ink for roneo	6	100	600	
Total			12,060	

II. Inservice Training Program in Laboratory Instrumentation

1. Background and justification.

To strengthen the functions of the provincial and district laboratories in the model area, of the Chon Buri Regional Laboratory and of the Department of Medical Sciences are objectives of the Promotion of Provincial Health Services Project. As it is mentioned in Part II of this project's plan, the main input to be applied in this strengthening scheme are the training of the existing staffs and improvement of the existing equipments and facilities.

For the efficient, effective and continual laboratory service, the personnel involved should have thorough knowledge of the laboratory equipments. Knowing the principle of equipments not only renders them effective works but also prevents the equipments from being unintentionally damaged. A proper in-service training course in Laboratory instrumentation is necessary in views of officiency and economy.

2. Project goal.

To increase the efficiency of health laboratory service by broaden the knowledge of instrumentation for the personnel involved.

3. Specific objectives.

3.1 To enhance the ability of health laboratory service personnel by means of the additional knowledge of instrumentation.

3.2 To minimize the hindrance to the continuity of laboratory services due to the defect of equipments.

3.3 To prolong the in-service life of laboratory instruments.

4. Trainees.

Twenty medical technicians or laboratory assistances; 6 from Chanthaburi, 7 from Chon Buri and 5 from the Department of Medical Sciences.

5. Lecturers and instructors.

Lecturers and instructors are invited from the Scientific Instrument Center, Department of Medical Sciences.

6. Curiculum.

A five-day Workshop on Laboratory Equipments comprises 15 hours of lectures, and 15 hours of workshop. (A tentative schedule is shown in article 12)

7. Location.

Department of Medical Sciences.

8. Budget.

8.1 Travel allowance

8.1.1 For 8 trainees from Chanthaburi and Chan Buri Provinces at an average of 150 Baht per person. = ฿ 1,200

8.1.2 For 7 trainees from Chon Buri Province at the rate of 100 Baht per person. = ฿ 700

Sub total = ฿ 900

8.2 Instructor's fee

8.2.1 Special instruction fee for 15 hours at the rate of 100 Baht per hour. = ฿ 1,500

8.2.2 For 5 workshop instructors for 5 periods at the rate of 150 Baht per period per person = ฿ 3,750

Sub total = ฿ 5,250

8.3 Per diem for trainees (from Chanthaburi and Chon Buri).

For 15 trainees at the rate of 250 Baht per day per person for 5 days = ฿ 18,750

Sub total = ฿ 18,750

8.4 Study and teaching materials.

8.4.1 Text books

(a) Twenty books of Microscopy 100 Baht each = ฿ 2,000

(b)	Twenty books of Medical Instrumentation 100 Baht each	= ฿	2,000
	Sub total	= ฿	4,000

8.4.2 Printed sheets.

(a)	Two cases of stencil paper (48 X 2 stencils)	310
(b)	Two thousand and six hundred sheets of plain paper	380
(c)	Two bottles of ink	280
(d)	Typing subsidy	3,000
	Sub total = ฿	3,970

8.4.3 Overhead projecting materials.

(a)	Transparency marker (2 sets)	200
(b)	Transparency film (100 sheets)	600
(c)	Transparency frame	250
(d)	Projecter lamp (2 bulks)	900
	Sub total = ฿	1,950

8.4.4 Slide projecting materials.

(a)	Black and white film (5 rolls)	455
(b)	Kodalish super contract film (100 ft)	400
(c)	Color slide film (5 rolls processing included)	2,150
(d)	Projecter lamp (2 bulks)	800
	Sub total = ฿	3,805

8.4.5 Miscellaneous

(a)	File (25 files)	600
(b)	Flip chart (25 sheets)	50
(c)	Color pen	200
(d)	Postal expenses	50
	Sub total = ฿	900
	Total = ฿	40,425

9. Expecting Results

Trainees will gain sufficient knowledges for use and care of simple and universal spectroscope, light microscope, electrochemical instrument and centrifuge.

10. Evaluation

10.1 Every trainees satifications will be verified by their works in each workshop.

10.2. The final evaluation will be included in the project authorities' report.

11. Authorities

11.1 Director of the Project.

11.2 Director, Division of Provincial Health Laboratory Services.

11.3 Chief, Scientific Instrument Center, Department of Medical Sciences.

12. Tentative schedule

Mon. 17 Jan.'83

08.30 - 09.00	Registeration
09.00 - 09.30	Opening Ceremony
09.30 - 10.45	" Role of Instrument in Medical Sciences Research and Analysis." *** Prof. Dr. Chusak Vejbaesya
10.45 - 11.00	Break
11.00 - 12.00	" How can you rely on your instrument? " *** Dr. Somkiat Wungkobkiat
13.00 - 14.00	" Let's use the Spectrophotometer versatilely." *** Mr. Sudchit Roongpornchai
14.00 - 16.00	Workshop: Structure and Function of Spectrophotometer.

Tue. 18 Jan.'83

09.00 - 10.00	" Maintenance and Fault Finding for Spectrophotometer." *** Mr. Chusak Chumnanyantarakit
10.00 - 12.00	Workshop: Preliminary repair for Spectrophotometer.
13.00 - 14.30	" Let's use the Microscope thoughtfully." *** Ass. Prof. Watana Ritimati
14.30 - 16.30	Workshop: Using the Microscope.

Wed. 19 Jan.'83

09.00 - 10.00	" Maintenance and Fault Finding for Microscope."
	*** Dr. Somkiat Wungkobkiat
10.00 - 12.00	Workshop: Preliminary repair for Microscope.
13.00 - 14.00	"pH meter, Blood-gas analyser and Electrophoresis equipment."
	*** Mr. Kanshit Komapatara
14.00 - 16.00	Workshop: Preliminary repair for pH meter, Blood-gas analyser and Electrophoresis equipment.

Thu. 20 Jan.'83

09.00 - 10.00	" Thermal equipments."
	*** Dr. Somkiat Wungkobkiat
10.00 - 12.00	Workshop: Preliminary repair for Thermal equipments.
13.00 - 14.00	" Electronics for Laboratory Instruments."
	*** Ass. Prof. Manas Sangwornsil
14.00 - 16.00	Workshop: Read and Repair for Circuit in Instrument.

Fri. 21 Jan.'83

09.00 - 10.00	" Mechanical equipments."
	*** Dr. Somkiat Wungkobkiat
10.00 - 12.00	Workshop: Preliminary repair for Mechanical equipments.
13.00 - 15.00	Discussion
15.00 - 15.30	Break
15.30 - 16.00	Clossing Ceremony.

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Symposium "On the role of Public Health Laboratory for promotion of public health"

1. Date: 14 March - 18 March 1983 (5 days)

2. Place: at Bangkok - Narai Hotel
at Chanthaburi - Travel Ladge Hotel

3. Purpose of Symposium
3.1 To evaluate the result of " Promotion of Provincial Health Services Project " which is conducted form 1976 at Chanthaburi Province.
3.2 To spread the foot-print of P.P.H.S. Project among the whole country's PHL officials.
3.3 To find out the present problem in and around the PHL, and discuss with it.

4. Participant
4.1 Chief of each Public Health Laboratory or his/her representative
4.2 Related officials of PPHS Project.
4.3 Participant from Japan
4.4 JICA Officials
4.5 Representative of Japanese Embassy.
4.6 Other general participant.

5. Management
To manage this Symposium Steering Committee shall found as its responsible organization.

6. Budget
Japanese Goverment shall grant special budget through JICA for this purpose.

7. Tentative Programme
March 14 (Monday)

11.00	Registration	at Narai Hotel
13.00-14.00	Opening speech	by Dr. Hasegawa
		Dr. Manasvi
		Dr. Nakazawa

14.00-16.00 Main speech by Dr. Nadirat
Dr. Fukai

18.00 Reception

March 15 (Tuesday)

10.00 Move from Bangkok to Chanthaburi including field survey.

March 16 (Wednesday) at Travel Ladge Hotel.

10.00-16.00 General speech from officials who in charge of PPHS Project.

March 17 (Thursday)

10.00-12.00 Special speech from representative of each region

13.00-16.00 Group discussion concerning to item 3-3

18.00 Farewell party.

March 18 (Friday)

10.00 Move from Chanthaburi to Bangkok
Break-up

8. Language

Mainly Thai language.

Preparation of request (Equipment, Expert and Fellowship) for fiscal year 1983

I. Priciple

I.1 Equipment

- Spare-part, supplies, exchange of ex-donate equipment.
- Reagents

In principal, new proposal should be avoidable and directly connect with present Project's activities.

I.2 Expert

- Request for new research field should be avoidable.
- Present expert's field might be continuous.

I.3 Fellowship

- Long term learning period candidate should be desirable.
- Candidate should be working in the Project as counterpart.

2. Procedure

2.1 Each division shall discuss with Japanese Expert (in case no expert contact with Team Leader), and making up division's first proposal in the above mentioned limit.

2.2 Each Activity Manager shall prepare the Activity's plan.

2.3 Project Director & Team Leader shall discuss and coordinate to finalize the request before the Coordinating Committee.

Symposium " On the role of Public Health Laboratory for promotion of public health"

1. Date: 14 March - 18 March 1983 (5 days)

2. Place: at Bangkok - Narai Hotel
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4.1 Chief of each Public Health Laboratory or his/her representative
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13.00-16.00 Group discussion concerning to 3 - 3 matters.
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10.00 Move from Chanthaburi to Bangkok
Break-up

8. Language

Mainly Thai language.

Tentative Equipment Provision Programme Fiscal year 1982

Activity	Division	No.	Equipment	Set	Remark
I	PHL Chanthaburi	1-1-6	Spectrophotometer "Shimadzu"	1	
		1-1-7	Portable pH meter	1	
		1-1-8	Counting apparatus	1	
		1-2-1	Spare parts for automatic blood cell counter	1	
		1-3-1	Reagents		
II	VRI	2-1-4	Personnel computer Sharp Model MZ-80B	1	
	DME	2-2-7	Insect Box 16 X 20	160	
		2-2-8	Insect Box variouse size	50	
		2-2-9	Insect Pin	100	
	DCP	2-3-1	Autoclave Hiruyama	1	
	DFA	2-4-2	Copy machine		
	DPHLS	2-5-2	Stercoscopic Microscope	2	
	PHL Chon-buri	2-6-4	Test tube	2000	
		2-6-7	Vim-Silverman biopsy needle	5	
		2-6-8	Reagents		
V		5-1-1	Plain paper copier		

Preparation of request (Equipment, Expert and fellowship) for fiscal year 1983

1. Priciple

1.1 Equipment

- Spare-part, supplies, exchange of ex-donated equipment.
- Reagents

In principle, new proposal should be avoidable and directly connect with present Project's activities.

1.2 Expert

- Request for new research field should be avoidable.
- Present expert's field might be continuous.

1.3 Fellowship

- Long term learning period candidate should be desirable.
- Candidate should be working in the Project as counterpart.

2. Procedure

2.1 Each division shall discuss with Japanese Expert (in case no expert contact with Team Leader), and making up division's first proposal in the above mentioned limit.

2.1 Each Activity Manager shall prepare the Activity's Plan.

2.3 Project Director and Team Leader shall discuss and coordinate to finalize the request before the Coordinating Committee.

Project: Promotion of Provincial Health Services

Inservice Training Programme (1982)

For Public Health Officers and Laboratory Technicians in Chanthaburi

---

I. Inservice Training Program for Public Health Officers

1. Background and justification

The co-operative project of Japanese and Thai government called Chanthaburi Project was set up in Chanthaburi to promote villager's health by quick determined diagnosis and sending specimens to the laboratory. It needs many levels of officers, so we should train them to know epidemiology.

2. Project goal

To increase the efficiency of health services by broaden the knowledge in epidemiology for health officers.

3. Objectives

1. Training them to understand the network of epidemiology.
2. Training them to know how to cooperate with this project.

4. Trainees

Trainees are selected from health officers of Health Centers in Chanthaburi

Group 1	52 persons
Group 2	51 persons

5. Lecturers and Instructors

Lecturers and instructors are invited from

5.1 Division of epidemiology Office of the Under-Secretary of State, Ministry of Public Health.

5.2 Department of Medical Sciences.

5.3 PCMO Chanthaburi

6. Curriculum

A 5-day workshop on epidemiology comprising 25 hours of lecture and 5 hours of discussion. Tentative schedules are shown in 12.

7. Location

P. CM. O.

8. Budget

8.1 Travel allowance

8.1.1 Travel allowance for trainees from the place they live to the training place.

฿ 100 X 103 persons = ฿ 10,300.-

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฿ 200 X 14 persons = ฿ 2,800.-

8.2 Instructor's fee

฿ 100 X 50 hours = ฿ 5,000.-

8.3 Per diem

8.3.1 Per diem for 103 trainees in 5 days

฿ 250 X 5 days X 103 persons = ฿ 128,750.-

8.3.2 Per diem for instructors from 5.1 and 5.2

฿ 300 X 14 persons X 2 days = ฿ 8,400.-

8.4 Expenditure for teaching materials (List of articles attached) = ฿ 11,300.-

Total = ฿ 166,550.-

9. Expecting results

1. Trainees know the scope of epidemiology.
2. Trainees can cooperate with this project.

10. Evaluation

1. Group discussion.
2. Observing during training.
3. Questionnaires.

11. Authority

1. Director of the Project.
2. Director of the Field Area.
3. Manager of Activity IV

12. Tentative Schedule of Public Health Officer at Prapokklao Hospital, Chanthaburi.

Date	Time	Subjects	N.B.
1,15 Dec. 1982	8.30 - 8.45	Registeration	
	8.45 - 9.00	Opening ceremony	
	9.00 - 10.15	Story and objectives of the project	
	10.15 - 10.30	15 min. break	
	10.30 - 11.00	Speach of Japanese Expert	
	11.00 - 12.00	*Present condition and problems of P.C.H.O.*	
	12.00 - 13.00	Lunch time	
	13.00 - 15.00	Basic epidemilolgy	
	15.00 - 15.15	15 min. break	
	15.15 - 16.15	Role of public health officers and scope of epidemiology	
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	15.00 - 15.15	15 min. break	
	15.15 - 16.15	Vocabulary in epidemiology	
10.17 Nov 1982	9.00 - 10.00	Etiology and control	
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	15.00 - 15.15	15 min. break	
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Date	Time	Subject	N.B.
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	15.00 - 16.30	Discussion from the report of group discussion	
	16.30 - 17.00	Brief the idea and close the training	
		**********	

Expense of materials in the training

Articles	Unit	Price for Unit	Total	N.B.
Slide film	10	250	2,500	
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Pencils	120	2	240	
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Pin	5 dz	40	200	
Poster color	4	30	120	
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Small clip	12 dz	40	480	
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II. Inservice Training Program in Laboratory Instrumentation

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3.3 To prolong the in-service life of laboratory instruments.

4. Trainees.

Twenty medical technicians or laboratory assistances; 8 from Chanthaburi, 7 from Chon Buri and 5 from the Department of Medical Sciences.

5. Lecturers and instructors.

Lecturers and instructors are invited from the Scientific Instrument Center, Department of Medical Sciences.

6. Curiculum.

A five-day Workshop on Laboratory Equipments comprises 15 hours of lectures, and 15 hours of workshop. (A tentative schedule is shown in article 12)

7. Location.

Department of Medical Sciences.

8. Budget.

8.1 Travel allowance

8.1.1 For 8 trainees from Chanthaburi and Chan Buri Provinces at an average of 150 Baht per person. = ฿ 1,200

8.1.2 For 7 trainees from Chon Buri Province at the rate of 100 Baht per person. = ฿ 700

Sub total = ฿ 900

8.2 Instructor's fee

8.2.1 Special instruction fee for 15 hours at the rate of 100 Baht per hour. = ฿ 1,500

8.2.2 For 5 workshop instructors for 5 periods at the rate of 150 Baht per period per person = ฿ 3,750

Sub total = ฿ 5,250

8.3 Per diem for trainees (from Chanthaburi and Chon Buri).

For 15 trainees at the rate of 250 Baht per day per person for 5 days = ฿ 18,750

Sub total = ฿ 18,750

8.4 Study and teaching materials.

8.4.1 Text books

(a) Twenty books of Microscopy 100 Baht each = ฿ 2,000

	(b)	Twenty books of Medical Instrumentation 100 Baht each	= ฿	2,000
		Sub total	= ฿	4,000
8.4.2	Printed sheets.			
	(a)	Two cases of stencil paper (48 X 2 stencils)		310
	(b)	Two thousand and six hundred sheets of plain paper		380
	(c)	Two bottles of ink		280
	(d)	Typing subsidy		3,000
		Sub total .	= ฿	3,970
8.4.3	Overhead projecting materials.			
	(a)	Transparency marker (2 sets)		200
	(b)	Transparency film (100 sheets)		600
	(c)	Transparency frame		250
	(d)	Projecter lamp (2 bulks)		900
		Sub total	= ฿	1,950
8.4.4	Slide projecting materials.			
	(a)	Black and white film (5 rolls)		455
	(b)	Kodalish super contract film (100 ft)		400
	(c)	Color slide film (5 rolls processing included)		2,150
	(d)	Projecter lamp (2 bulks)		800
		Sub total	= ฿	3,805
8.4.5	Miscellaneous			
	(a)	File (25 files)		500
	(b)	Flip chart (25 sheets)		50
	(c)	Color pen		200
	(d)	Postal expenses		50
		Sub total	= ฿	800
		Total	= ฿	40,425

9. Expecting Results

Trainees will gain sufficient knowledges for use and care of simple and universal spectroscope, light microscope, electrochemical instrument and centrifuge.

10. Evaluation

10.1 Every trainees satifications will be verified by their works in each workshop.

10.2 The final evaluation will be included in the project authorjties' report.

11. Authorities

11.1 Director of the Project Dr. Panchit

11.2 Director, Division of Provincial Health Laboratory Services. Dr. Manghol

11.3 Chief, Scientific Instrument Center, Department of Medical Sciences.

12. Tentative schedule of Public Health Officer.

Date	Time	Subject	N.B.
17 Jan. 1983	6.30 - 9.20	Introduction	
	9.30 - 10.30	Lecture : Spectroscopy	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	Lecture : Spectroscopy	
	12.00 - 13.00	Lunch time	
	13.00 - 16.00	Workshop Spectroscopy	
18 Jan. 1983	8.30 - 9.20	Lecture : Spectroscopy	
	9.30 - 10.30	Lecture : Microscopy	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	Lecture : Microscopy	
	12.00 - 13.00	Lunch time	
	13.00 - 16.00	Workshop : Structure of Microscope	

Date	Time	Subject	N.B.
19 Jan. 1983	8.30 - 9.20	Lecture : Spectroscopy	
	9.30 - 10.30	Lecture : Microscopy	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	Lecture : Microscopy	
	12.00 - 13.00	Lunch time	
	13.00 - 16.00	Workshop : Disassembling of Microscope *1	*1 For cleaning
20 Jan. 1983	8.30 - 9.20	Lecture : Spectroscopy	
	9.30 - 10.30	Lecture : Microscopy	
	10.30 - 10.45	15 min. break	
	10.45 - 12.00	Lecture : Microscopy	
	12.00 - 13.00	Lunch time	
	13.00 - 16.00	Workshop : Assembling of Microscope *2	*2 Including the alignment
21 Jan. 1983	8.30 - 9.20	Lecture : Electrochemical Instrument	
	9.30 - 10.30	Lecture : Centrifuge	
	10.30 - 10.45	15 min break	
	10.45 - 12.00	Lecture : Centrifuge	
	12.00 - 13.00	Lunch time	
	13.00 - 16.00	Workshop : pH meter/ Centrifuge	
		**********	

11st Coordinating Committee Meeting
The Promotion of Provincial Health Services Project

Meeting Report

Present members

1. Dr. Panchitta Ekachampaka	Deputy Director-General Department of Medical Sciences. Vice Chairman
2. Dr. Sujarti Jatanasen	Director, Division of Epidemiology Ministry of Public Health.
3. Dr. Suwit Udompanish	For Director, Division of Rural Health Ministry of Public Health.
4. Dr. A-ngoon Satidnimanop	For Director, Division of Provincial Hospital, Ministry of Public Health.
5. Dr. Kati Jirayus	Director, Division of General Communi- cable Disease, Ministry of Public Health
6. Miss Amara Wongbuddhapitak	For Director, Division of Food Analysis.
7. Dr. M L Ratanasuda Phanurai	Acting Director, Division of Clinical Pathology.
8. Dr. Kanai Chatiyanonda	Director, Virus Research Institute
9. Dr. Phanya Sornkom	Director, Cholburi Hospital.
10. Dr. Damrong Phanthumkosol	For Director, Prapokklao Hospital Chanthaburi.
11. Dr. Khuntong Sukatipantta	Director of Technical and Health Service Promotion, Chanthaburi.
12. Mr. Chalermsak Tongthamachat	Medical Scientist 6, Cholburi Hospital.
13. Mr. Surayut Khangsadral	For Chief of Columbo Paln, Office of the Civil Service Commission.

14. Dr. Somkiat Wungkobkiat	Chief, Scientific Instrument Center
15. Dr. Mongkol Mokkhasamit	Director, Division of Provincial Laboratory Services, Secretary of the Committee.
16. Dr. Boonluan Phanthumachinda	Director, Division of Medical Entomology Assistant Secretary.
17. Dr. Megumi Hasegawa	Expert Team Leader
18. Dr. Kazuo Buei	Expert in Medical Zoology
19. Dr. Homu Ito	Expert in Virology
20. Mr. Masaharu Nishimura	Expert in Public Health
21. Mr. Takeo Miyazaki	Expert in Clinical Chemistry
22. Mr. Masao Watanabe	Japanese Coordinator
23. Mr. Y. Noshiro	Assistant Resident Representative JICA

Absent members

1.. Director-General of DMS. - Went aboard for official business

2. Director, Division of Budget Analysis 1

3. Director, Division of Position and Pays 3

4. Director of P.C.M.O. Cholburi

5. Director of P.C.M.O. Chanthaburi

6. Director of JICA Bangkok office

7. Representative from Embassy of Japan.

MEETING REPORT

The Coordinating Committee Meeting was held at the Department of Medical Sciences' conference room 7th floor, Division of Food Analysis, on the 31st of January 1983 at 1.30 p.m. details of discussion are as follows:

1. Information by Chairman.

1.1 Dr. Panchitta Ekachampaka, Vice Chairman, informed the committee that Dr. Nadhirat Sangkawibha, the Chairman, went aboard for official business and appointed him as acting Chairman for this meeting.

1.2 On 20th and 21st of December 1982, the Government of Japan by Dr. Megumi Hasegawa, Expert Team Leader, had presented the 3-deep wells in Chanthaburi province for Thai Government which are as follows:

Dated 20th of December 1982 at Prapokklao Hospital
Dated 20th of December 1982 at Ampore Tagard-ngoa
Dated 21st of December 1982 at Ampore Ban Samromg

1.3 JICA assigned Dr. Hikaru Tanaka, expert in Clinical Bacteriology to work in this project for 1 year from 1st of February 1983 to 31st of January 1984, This field of expert was requested in 1982 by Division of Clinical Pathology.

2. Adoption the previous meeting report.

The committee had considered the 10th Coordinating Committee Meeting report and had some coorection as follows:

Page	Item	Worng word	Coorected to
1	2	Mrs. Boonsalpa Boonpinand	Boonthinand
1	11	Dr. Khumtong	Khuntong
3	3.4	Dr. Nsshimura	Nishimura
3	3.6	Expert Coordinator	cut Expert
3		but their name	names
Annex I	II	VRI. MZ-80B	MZ-2000
Annex II		Location Prapokklao Hospital	P.C.M.O. Chanthaburi
Annex IV	3.2	to spread the foot-print	To distribute

3. Consideration the 1983 Requests.

The committee had considered the Executive Committee Meeting Report and accepted all request, therefore the committee agreed to add one short term expert in Instrument (Lyophilizer). This expert was requested by Scientific Instrument Center of DMS. for repairing and training on Freeze Drying Machines which were provided by Japanese Government but still got problems in installation. The followings are all accepted for 1983 requests:

3.1 Fellowships.

	Field of Training	Duration	Requested by
3.1.1	Epidemiology and Entomology	3 months	Epidemiology Division
3.1.2	Training course in Immunology	6 months	DPHLS
3.1.3	Rodent and Entomology	1 year	DME
3.1.4	Water Analysis	6 months	DFA

3.2 Experts

3.2.1 Activity I Prapokklao Hospital requested to extend expert in Clinical Chemistry from 29 June 1983 to 31 March 1984.

Activity II

3.2.2 DME. requested expert in Medical Entomology 3 months.

3.2.3 VRI. requested expert in Instrument (Lyophilizer) 2 months.

3.2.4 DFA. requested expert in Food Microbiology 3 months.

3.3 Equipments.

The request of 1983, JICA schedules to provide ¥ 25,000,000 (approximately ฿ 2,500,00) which included the transportation fee, in this amount ฿ 100,000 would be provided to DCP. for Dr. H. Tanaka researching expense, The equipment lists are attached.

4. Training

4.1 "Inservice Training Programme for Public Health officer at P.C.M.O. Chanthaburi"

Dr. Khuntong Sukatipanta the manager of Activity III & IV presented that this was the fourth project training which emphasized the main subject in Epidemiology. This year the participants were incresed to 110 persons because the last two years did not have such training thus this training was divided into two sessions during 8-11 November 1982 and 12-15 November 1982 with 57 participants plus 2 observers

and 53 participants plus 3 observers respectively. The guest lecturers were inivted from Prapokklao Hospital, P.C.M.O. Chanthaburi and Epidemiology Division.

Conclusion

4.1.1 Most of the participants were satisfied with the contents of this training and felt beneficial, Nevertheless, some lost their attentions because of too technical materials presented which could be helped by providing more relaxing atmosphere.

4.1.2 The administrative services needed to be inproved because some participants expressed deficient services to some extent which could be improved by providing more officers.

4.2 "Inservice Training Programme in Laboratory Instrumentation".

Dr. Somkiat Wungkobkiat presented that the training was held at DMS. on 17-21 January 1983. There were 22 participants; 7 from Chanthaburi 4 from Cholburi, 11 from DPHLS and 1 from Khonkaen province.

4.2.1 Budget expenditure.

Budget allowed	฿ 37,837.00
Transportation, per diem for trainnees	฿ 15,830.00
Study and teaching materials	฿ 14,858.00
Instruction fee	฿ 7,150.00
Total expenses	฿ 37,837.00

4.2.2 General view

- Training schedule was too tight, they did not have enough time to go into details and for giving intermittance.
- Too sesions during the whole 5 days period. They needed more relax atmosphere creation.

4.2.3 Academic view

- A quarter to one-third of participants were satisfied with the training contents and accepted that the subjects met with the objectives. Meanwhile, the rest were partially satisfied.

- All the participants had problems concerning instrumentation related to the present training subjects more or less. After this training course, they all gained confidence in solving their own problems.
- There were still many things to be improved in workshop such as the ways for practising, growing. This was in part due to the ineffective confinement of participants.
- In general, the sequence of subject was quite proper excepted that the Basic Electronics should be taught before all. It was not done due to difficulty in arrangement of lecturer. According to the majority idea, Electornics for Instrumentation should be a separated training course.

Conclusion

If longer training time was unavailable, less subject should be included to avoid tightness, There were many drawbacks from failure in confining the characters of participants. This could not be ignored any time. This was not an outcome of this training course unless the future activities of all these participants had been followed and clarified.

5. Progress of Symposium's preparation.

The title of Symposium "On the Role of Public Health Laboratory for Promotion of Public Health" was arranged to " Role of Public Health Laboratory for Health Promotion", and will be held at Bangkok and Chanthaburi during 14-18 March 1983 with the cooperation between Thai and Japanese. The Government of Japan will provide budget for this Symposium. Dr. Boonluan Phanthummachinda, Secretary of the Steering Coomittee, distributed the Symposium's programme in Thai and English to all committee members and reported the progress of Symposium as follows:

5.1 DMS. had appoitted 8 Steering Committees on 29th of October 1982 as follows;

5.1.1	Director-General of DMS.	The Chairman
5.1.2	Deputy Director-General (The Project Director)	Vice Chairman
5.1.3	Director of P.C.M.O. Chanthaburi	Committee

5.1.4	Director of DPHLS	Committee
5.1.5	Dr. M. Hasegawa	Committee
5.1.6	Mr. M. Nishimura	Committee
5.1.7	Mr. M. Watanabe	Committee
5.1.8	Director of DME.	Committee and Secretary

5.2 Letter to the Permanent Secretary for Public Health
Subject: To ask the permission for steering the Symposium
Approved: on the 6th of January 1983

5.3 Letter to 75 P.C.M.O. and Hospital
Subject: sending Symposium programme and recruiting participants.
Answered: 15 P.C.M.O.

5.4 Letters to 15 Chiefs of Laboratory units through the P.C.M.O.
Subject: request for scientific and administrative papers for presentation.

5.5 Announcement the selection of working groups.

5.6 Sent the questionnaires to all participants for hotel booking service. Answered 50 participants.

5.7 Invitation letter to Professor Dr. Konosuke Fukai on the 27th of January 1983.

****

Recorded by : Mrs. Amara Sirirojvisuth

Approved by : Dr. Boonluan Phanthumachinda

REQUEST FOR

PROJECT: PROMOTION OF PROVINCIAL HEALTH SERVICES, 1983

Activity I

1. Supplies

1.1	Millipore Filter HA type pore size 0.45 um	100 sheetsx15
1.2	Centrifuge rack (Hitachi Table Type) for 8 or 12x4 : tube size 12(D)x100(L)	8
1.3	Leather Strop (IWATATYPE) Mic 8532	1
1.4	Spare 10ml. syringe for T-H,JS 10 (HIRASAWA)	12
1.5	Heater Part for Toyo GS-18R "Aquinus" 220V.	2
1.6	Heater part for TOMY Autoclave S 90 N,220V.	3
1.7	Rack for test tube (NE Product), S-12x12	30
1.8	Rack for test tube (NE Product) S-18x50	30
1.9	Test tube (NE Product) with cap. ST : 8-160 size 18x160 cap No. 2	1000
1.10	(IWAOKA) Paste for Leather strop No. 1	6
1.11	(IWAOKA) Paste for Leather strop No. 2	6
1.12	Test tube (NE Product) A-For Agglutination JIS Type size 13x100x1.0, 100 tubes Package	100

2. Control serum & Antiserum

2.1	Omega Chemistry Control Serum I 5 ml vial size		36 package
2.2	Omega Chemistry Control Serum II 5ml vial size		36 package
2.3	Antiserum for typing the enteric pathogenic bacteria (Toshiba)		
	2.3.1 Shigella Diagnostic (No.1)	each 2ml.x50	2 set
	2.3.2 Vibrio Cholera		
	-Polyvalent	each 2ml.x3 vial	1 set
	-Ogawa	each 2ml.x3 vial	1 set
	-Inaba	each 2ml.x3 vial	1 set
	2.3.3 Vibrio parahemolyticus		
	(K-Typing)	each 2ml.x 64	2 set
	-Vibrio parahemolyticus (O-Typihg)	each 2ml.x 12	2 set
	2.3.4 Salmonella		
	Polyvalent A-I	each 2ml.x 12	2 set
	Group B,	each 2ml.x 6	2 set
	Group E,	each 2ml.x 6	2 set
	Group A-I	each 2ml.x 3	2 set
	Vi	each 2ml.x 2	2 set
	2.3.5 Pathogenic E.Coli	each 2ml.x 42	1 set

3. Media

TCBS Agar	300 gm.	50 bottles
SS Agar	300 gm.	50 bottles
DHL Agar	300 gm.	50 bottles
EMB Agar	300 gm.	25 bottles
Tryptosoy Agar	300 gm.	25 bottles
Tryptosoy Broth	300 gm.	25 bottles
Mueller Hinton Agar	300 gm.	25 bottles
Mannitol salt Agar	300 gm.	20 bottles
Desoxycholate Agar	300 gm.	10 bottles
Nutrient Agar	300 gm.	10 bottles
Standard plate count Agar	300 gm.	10 bottles
Blood Agar base (Oxoid)	300 gm.	25 bottles
Fluid Thioglycolate Medium	300 gm.	25 bottles
Stuart Transport Medium	300 gm.	5 bottles
PEA Azide Agar	100 gm.	10 bottles
DNA Agar	100 gm.	10 bottles
Carry Blair Transport Medium	100 gm.	25 bottles
TSI	100 gm.	30 bottles
LIM	100 gm.	40 bottles
Malonate Broth	100 gm.	10 bottles
Simmon Citrate Agar	100 gm.	10 bottles
VP semisolid Medium	100 gm.	10 bottles
Selenite broth	100 gm.	25 bottles

4. Staining Dyes

Safranin	250 gm.
Methylene Blue	250 gm.
Basic Fuchsin	250 gm.
Crystal Violet	500 gm.

5. Equipment

5.1 Kayagaki, Paraffin Spreading Unit Round type, Hot water system 220 V.	1 set
5.2 Fuji Dehumidifying Chamber (Atlas Co.Ltd.) for traning education slide preservation 220 V.	2 set
5.3 Coagulator, electric (220 V.) for 200 test tubes equipped with thermo-regulator and shelves temperature Adjustable 60 ℃ - 90 ℃	1 set
5.4 Hot air oven "Hirasawa" Type GM-6E, 220V. 15 A	1 set
5.5 Autoclave "TOMY" Model S - 90 N	1 set
5.6 Incubator "SAKURA" Model IF-3B	1 set
5.7 Kubota, Centrifuges for Hematocrit KH/120M (for side room lab) set out with ciinical purpose 15ml.x4 220V. capillary x 20, 12,000 r.p.m 15 ml. tube x 4.1600-3500 r.p.m.	4 set
5.8 Glass pipette for DADE Diluter	6 pcs.

Activity II	Equipments and Supplies	Quantity
VRI	Demineralizer Specification: 1. Consists of regenerative ion exchange and mixed bed deionizer column (resin can be washed with HCl and NaOH solution). 2. Flow rate - 50 gallons / hour. 3. Resitivity of purified water 1-10 megohm-cm. 4. Ion exchange capacity is 27,000 gr. and mixed bed capacity is 10,000 gr. 5. Include purity meter and regenerant tanks. 6. Electrical requirements 220-volt, 50/60-hertz single-phase.	1 set
DME	1. Refregerator, 8 cu.ft, 220v.	1 unit
	2. Water checker, Horiba^{R} Model V-7	1 set
	3. Co_2 Meter, Measuring range: 0-2,000/5,000 ppm.	
	4. Blood-Gathering Box, for rabbits W 170x1 390xH 190 mm.	1 set
DCP	1. Shaking water bath, shaking amplitude 0-50, temperature range from ambient to + 100°C	1 set
	2. Micro-shaker, for mixing reagents in microtiter plates	
	3. Seal crimper (hand crimper) for 20 mm. corkage	
	4. Constricted ampoules for lyophilization, inside diameter of the opening 6 mm. 115 mm. long	10000
	5. Bottle transporter, for anaerobic transport with rubber and zine cover size 20-25 ml.	500
	6. Screw-cap blood culture bottle with rubber size 3 oz.	500
	7. Pasteur pipette	1000
DPHLS	1. Atago Urine Specific Gravity Refractometer cat. No. 315	6 sets
	Specification:- Urine specific gravity scale 1.000 - 1.050 Refractive index scale 1.333 - 1.356 Dimensions 3 cm. x 3 cm. x 17 cm. Weight 230 g.	
	2. Automatic Pipett Oxford^{R} 8000 Series Micropipeets	
	2.1 Cat. No. 8010 Volume 10 Microliter	1 set
	2.2 Cat. No. 8100 Volume 100 Microliter	1 set
	2.3 Cat. No. 8500 Volume 500 Microliter	1 set
	2.4 Cat. No. 8001 Volume 1000 Microliter	1 set
	3. Vortex - Mixer	2 sets
	Specification:- 1. Adjustable of shaking speed 2. Sponge or rubber on the cup which is 25 mm. in diameter, 22 mm. deep 3. Housing is 159 x 127 x 159 mm. high 4. 220 Volts, 50 or 60 Hz.	

ActivityII	Equipment and supplies	Quantity
	4. Mechanical Shaker	2 sets
	Specification:- 1. Adjustable of shaking speed 2. Adjustable of shaking time 3. 220 Volts, 50 or 60 Hz.	
	5. Incubator Model Sakura IF - 4	2 sets
	Specification:- 1.Electric, two doors with automatic thermoregulate 2.Outer wall iron, rustless, finished in baked enamel or stainless stell, Inner wall corrugated copper plate or stainless steli plate, insultation, asbestos-tex or glass wood double door, inner one of glass outer of metal 3.Maximum temperature 70°C, sensitive temperature ± 0.5°C. 4.Complete with 3 shelves, pilot lamp, cord and plug 5.Chamber dimension Wide 90 " x Depht 21 x high 28 " 6.Electric 220 Volts 50 Hz.	
	6. Automatic Slide Stainer Ames Hematex Slide Stainer	1 set
	Specification:- 1. Automatic blood film staining (Hematology) 2. Adjustable the time, the step of staining and the stain concentration 3. The machine can contain 25 slides, stain each slide (1 minute) automatically 4. Electric 220 Volts 50 Hz.	
	7. Hand spectroscope	2 sets
	Specification:- 1. Slit for light pass 2. Prism of high and low refractive index 3. Knob for adjusting slit 4. Knob for focussing eye piece	
Chonburi regional Hospital	1. Door rubber of hot air oven, Sakura Finetechnical Co.HE-2NA	4 sets
	2. Heating coil unit of autoclave, Tomy Seiko Co. S-90 N	6 sets
	3. Chemical reagents and glassware	
	3.1 Cosmo barbital buffer DP-204	40 pac.
	3.2 Sodium tungstate 500 gm.	10 "
	3.3 Wright blood stain 25 gm.	40 "
	3.4 Methyl alcohol 4 litre	40 "
	3.5 Sodium hydroxide 500 gm.	20 "
	3.6 Sodium carbonate 500 gm.	20 "
	3.7 Sodium acetate 500 gm.	10 "

Activity II	Equipment and Supplies	Quantity
Chonburi regional Hospital	3.8 Sodium potassium tartrate 500 gm.	20 pac.
	3.9 Crystal violet 25 gm.	10 pac.
	3.10 Safranin - O 25 gm.	10 "
	3.11 Methylene blue 25 gm.	10 "
	3.12 New fuchsin for microscopy 100 gm.	5 "
	3.13 Brilliant green 25 gm.	5 "
	3.14 Giemsa stain 25 gm.	5 "
	3.15 Haematoxylin stain 25 gm.	10 "
	3.16 Test tube 13/100	3,000 tubes
	3.17 Test tube stopper for 13/100 tube	3,000 piece
	4. Culture media (Eiken products)	
	4.1 Blood agar 500 gm.	40 pac.
	4.2 Brain heart in fusion broth 300 gm.	30 "
	4.3 Fluid thioglycolate medium 300 gm.	10 "
	4.4 GC agar base 300 gm.	10 "
	4.5 HB diphtheria agar 300 gm.	10 "
	4.6 Heart infusion agar 300 gm.	10 "
	4.7 Heart infusion broth 300 gm.	10 "
	4.8 Hemoglobin 300 gm.	3 "
	4.9 Supplement A 5 ml/1A	20 "
	4.10 Lactose broth 300 gm.	10 "
	4.11 Mac.Conkey agar 300 gm.	30 "
	4.12 Mueller hinton agar 300 gm.	30 "
	4.13 Nutrient agar 300 gm.	10 "
	4.14 Sim medium 300 gm.	5 "
	4.15 SS agar 300 gm.	30 "
	4.16 Sinsitivity test agar 300 gm.	10 "
	4.17 Standard agar medium 300 gm.	10 "
	4.18 T.C.B.S. agar 300 gm.	50 "
	4.19 Trypto - soy broth 300 gm.	10 "
	4.20 Lim 100 gm.	30 "
	4.21 Cary and blair 300 gm.	10 "
	5. Incubator (Sakura model IF - 3 B)	2 sets
	6. Hot air oven (Sakura model HE - 21)	2 sets
	7. Water bath, JMC 5 - 17737 model B	2 sets
	8. Shaker, JMC 5 - 17752	1 set
	9. Continuous injector, JMC 5 - 17827	5 sets
	10. Water analysis outfit, JMC 5 - 17842	1 set
Epidemiology Division	1. Xerox machine (DESKTOP COPIER) - Cannon NP 400	1 set
	2. Electrical paper cutter - Ideal 3160	1 set

REQUEST 1983

Activity	Fellowship Field Training : No./Duration	Expert Field : No./ Duration	Equipment
Activity I	-	- Clinical Chemistry : 1/1 year ~~Mgr. Tokeo Miyazaki~~	Attached 1
Activity II			
VRI	- Radio immuno assay technique : 1/3-6 mon.	-	Attached 2
DME	- Rodent and Emtomology : 1/3 mon.	- Medical Emtomology : 1/3 mon.	Attached 3
DCP	-	-	Attached 4
DFA	- Water analysis : 1/6 mon.	- Food Microbiology : 1/3 mon.	-
DPHLS	- Training course in Urinalysis and Parasitology : 1/6 mon. - Training course in Hematology : 1/6 mon. - Training course in Clinical Chemistry : 1/6 mon. - Training course in Immunology : 1/6 mon.	- Hematology : 1/12 mon.	Attached 5
Chon-buri Regional Hospital	- Training in Clinical Chemistry, Clinical microscopy and hematology : 1/1 year	- Bacteriology : 1/1 year	Attached 6
PHL Panas-nikom Hospital	- Clinical Microbiology : 1/- Mrs. Somchit Keerratrihattayakorn	-	Attached 7
Bang-lamung Hospital	- 2 fellowships (see attached 8)	-	Attached 9
Ban-Bung Hospital	-	-	Attached 10
Activity III Dr. Khuntong	-	-	-
Director, Divis Epidimology Dr. Sujarti	- Epidemiology and Entomology : 1/3 mon. Mr. Ongard Chareonsook	-	- Cannon NP - Paper Cutt Ideal 3160 Attached 11
Activity IV	-	-	-
Activity V	-	-	-

REQUEST FOR

PROJECT : PROMOTION OF PROVINCIAL HEALTH SERVICES,1983

ACTIVITY I

1. Equipment

PHL, Chantaburi

1.1 Olympus, Microscope Model BHT-112, 220 V. (for side room laboratory use)	4 set
1.2 Nova - Nikokizai CL/TCO_2 Analyzer NOVA 3+3, 220 V. measurement parameters Chloride and total Carbondioxide component.	1 set
1.3 Kayagaki, Paraffin Spreading Unit Round type, Hot water system 220 V.	1 set
1.4 Fuji Dehumidifying Chamber (Atlas Co.,Ltd.) for traning education slide preservation 220 V.	2 set
1.5 Coagulator,electric (220 V.) for 200 test tubes equipped with thermo-regulator and shelves temperature Adjustable 60°C - 90°C	1 set
1.6 Hot air oven "Hirasawa" Type GM-6E,220V. 15A	1 set
1.7 Autoclave "TOMY" Model S - 90 N	1 set
1.8 Incubator "SAKURA" Model 1F-3B	1 set
1.9 Kubota,Centrifuges for Hematocrit KH/120 M(for side room lab) set out with clinical purpose 15ml.x4 1 - 220 V. capillaryx20, 12,000 r.p.m 15 ml. tube x 4,1600 - 3500 r.p.m	4 set
1.10 Class pipette for DADE Diluter	6 pcs.

2. Supplies.

2.1 Millipore Filter HAtype pore size 0.45 um	100sheetsx15
2.2 Centrifuge rack(Hitachi Table Type) for 8 or 12x4 : tube size 12(D)x100(L)	8
2.3 Leather Strop (IWATATYPE) Mic 8532	1

2.4 Spare 10ml. syringe for T-H,JS 10 (HIRASAWA)		12
2.5 Heater Part for Toyo GS-18R "Aquinus" 220 V.		2
2.6 Heater part for TOMY Autoclave S 90 N,220 V.		3
2.7 Rack for test tube (NE Product), S-12x12		30
2.8 Rack for test tube(NE Product) S-18x50		30
2.9 Test tube (NE Product) with cap.		
ST : 8-160 size 18x160 cap No. 2		1000
2.10 (IWAOKA) Paste for Leather strop No. 1		6
2.11 (IWAOKA) Paste for Leather strop No. 2		6
2.12 Test tube (NE Product) A-For Agglutination JIS Type		
size 13x100x1.0 , 100 tubes Package		100
3. Control serum & Antiserum		
3.1 Omega Chemistry Control Serum I 5 ml vial size		36 package
3.2 Omega Chemistry Control Serum II 5ml vial size		36 package
3.3 Antiserum for typing the enteric pathogenic bacteria (Toshiba)		
3.3.1 Shigella Diagnostic(No.1)	each 2ml.x 50	2 set
3.3.2 Vibrio Cholera		
- Polyvalent	each 2ml.x3 vial	1 set
- Ogawa	each 2ml.x3 vial	1 set
- Inaba	each 2ml.x3 vial	1 set
3.3.3 Vibrio parahemolyticus (K-Typing)	each 2ml.x 64	2 set
- Vibrio parahemolyticus (O-Typing)	each 2ml.x 12	2 set
3.3.4 Salmonella		
Polyvalent A-I	each 2ml.x 12	2 set
Group B,	each 2ml.x 6	2 set
Group E,	each 2ml.x 6	2 set
Group A-I	each 2ml.x 3	2 set
Vi	each 2ml.x 2	2 set
3.3.5 Pathogenic E.Coli	each 2ml.x 42	1 set

4 Media

TCBS Agar	300 gm.	50 bottles
SS Agar	300 gm.	50 bottles
DHL Agar	300 gm.	50 bottles
EMB Agar	300 gm.	25 bottles
Tryptosoy Agar	300 gm.	25 bottles
Tryptosoy Broth	300 gm.	25 bottles
Mueller Hinton Agar	300 gm.	25 bottles
Mannitol salt Agar	300 gm.	20 bottles
Desoxycholate Agar	300 gm.	10 bottles
Nutrient Agar	300 gm.	10 bottles
Standard plate count Agar	300 gm.	10 bottles
Blood Agar base (Oxoid)	300 gm.	25 bottles
Fluid Thioglycolate Medium	300 gm.	25 bottles
Stuart Transport Medium	300 gm.	5 bottles
PEA Azide Agar	100 gm.	10 bottles
DNA Agar	100 gm.	10 bottles
Carry Blair Transport Medium	100 gm.	25 bottles
TSI	100 gm.	30 bottles
LIM	100 gm.	40 bottles
Malonate Broth	100 gm.	10 bottles
Simmon Citrate Agar	100 gm.	10 bottles
VP semisolid Medium	100 gm.	10 bottles
Selenite broth	100 gm.	25 bottles

5 Staining Dyes

Safranin	250 gm.	-
Methylene Blue	250 gm.	-
Basic Fuchsin	250 gm.	-
Crystal Violet	500 gm.	-

6. Expert

6.1 Clinical Chemistry : Mr.Takeo Miyazaki

7. Fellow ship —

Damrong Bhanthumkosol

attached 2

Activity II

Virus Research Institute (VRI)

Equipment

1. Demineralizer 1 set.

Specification:

(1) Consists of regenerative ion exchange and mixed bed deionizer column (resin can be washed with HCl and NaOH solution).

(2) Flow rate - 50 gallons / hour.

(3) Resitivity of purified water 1-10 megohm-cm.

(4) Ion exchange capacity is 27,000 gr. and mixed bed capacity is 10,000 gr.

(5) Include purity meter and regenerant tanks.

(6) Electrical requirements 220-volt, 50/60-hertz Single-phase.

2. - 35 mm. camera (NIKON) will build in outomatic photometer and micronikon lens (55 mm.) 1 set.

3. - Duplicating machine 1 set.

Fellowship

Training in Radio immuno assay technique 3-6 months.

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