PacELF mission Report

Subject	: Microfilaria periodicity study in Kiribati and Tu
Place visited	: Fiji (Nadi, Suva, Sigatoka and Loutoka)
Date of mission	: 27 June to 31 December 2001
Auther and designation	: Satoshi NAKAMURA APW
Title of performance	: Final report

MISSION REPORT EXECUTIVE SUMMARY

Objectives of mission:

In collaboration with the Ministry of Health of Kiribati, Tuvalu, the field survey was conducted to collect mosquitoes and parasites in each country:

1. To determine microfilarial periodicity patterns by country
2. To determine parasite genotypes by country
3. To determine vector mosquito species and vector competence by PCR

Summary of activities, findings, conclusions and recommendations:

The author developed *W. bancrofti* microfilaria periodicity survey protocol at Suva, Fiji, from 27 June to 13 July in 2001, and also developed original PCR primer sets for the species specific gene detection in our laboratory during this mission. In addition, a bibliography on Bancroftian filariasis in the Pacific region was made for reviewing the regional figure of the disease control.

The nocturnal periodic *Wuchereria bancrofti* type of infection observed in Kiribati is clearly demonstrated using 2 times blood smear collection method. This is the first, and probably the last, reconfirmation work to the report of Byrd and St. Amant (1959).

Direct PCR technique for detection of the microfilariae specific gene with whole blood specimen is also established in this work. The technique is also applicable and useful to detect competent mosquito species with bancroftian filaria in Kiribati.

On mosquito fauna in Tarawa, Kiribati, there were 5 reported species; *Ae. Vexans, Ae. aegypti*, *Ae. marshallensis*, *Cx. quinquefasciatus*, and *Cx. annulirostris*. Among them, *Cx. quinquefasciatus*, *C. annulirostris* and *Aedes vexans* have possible competency to *W. bancrofti* was pointed out.

Recommendations including the following:

1 That basic genomic research on intraspecies difference between these periodicities be developed continuously to get conventional diagnosis on the periodicity.

2 That clinically confirmed cases by blood specimens such as amicrofilaremic, and/or cured by MDA be compared to the PCR performance for further establishment.

3 That faunal research on the vectors competent to the filariae be expanded and be clarified by using the PCR system in the Pac-ELF programme countries.

4 That all the specimens, obtained through the Pac-ELF programme be conserved and maintained to make the region specific databases.

5 That molecular level monitoring of exotic vector infestation be made as essential component of Pac-ELF strategy.

1. PURPOSE OF MISSION

In collaboration with the Ministry of Health of Kiribati, Tuvalu, the field survey was conducted to collect mosquitoes and parasites in each country:

1. To determine microfilarial periodicity patterns by country

2. To determine parasite genotypes by country

3. To determine vector mosquito species and vector competence by PCR

2. BACKGROUND

Bancroftian microfilarial periodicity is classified into two types in the Pacific region; one is nocturnal periodicity type observed in Micronesia and Melanesia sub-regions, and the other is sub-periodic one widely found in South Pacific region. Identifying the type and distribution of the periodicity is of great epidemiological importance, so as to ensure the impact of the disease transmission prevention program, for which mass drug administration is introduced at each country with the support by Pac-ELF. The mission work focused on confirming the periodicity and its competent vector species in Kiribati and Tuvalu, a sub-regional border of Micronesia and Polynesia. This border area has been regarded zoogeographical important, because it separates the sub-periodic type of *W. bancrofti* in Tuvalu and the southern islands from the nocturnally periodic type of *W. bancrofti* (Sasa,1976). In Micronesian sub-region, no filariasis cases were reported except in Kiribati (Chow, 1974), nor has been the type of periodicity confirmed yet since Byrd St. Amant reported the presence of nocturnal periodicity in Gilbert islands (Kiribati) in 1959. To detect the difference between two periodicities further in genetic level, molecular biology technique needed is also introduced and carried out in this mission.

3. ACTIVITIES AND FINDINGS

3.1 Activities

Microfilaria periodicity survey protocol was developed at Suva, Fiji, from 27 June to 13 July in 2001 (see Annex 2 and 3), by which microfilariae samples could be transferred to the International Medical Center of Japan, which is one of the WHO collaboration centers in Japan. Before obtaining the filarial samples, original PCR primer sets for *W. bancrofti* and housekeeping gene for common mosquito were designed and prepared in our laboratory.

A total of 59 specimens including whole bloods collected at Tarawa in Kiribati on 3 October 2001, together with other defined 3 whole blood specimens collected at Labasa in Fiji on 24 October 2001, were transported to our laboratory on 2 November 2001. These specimens were

all positive to ICT detective antigen. Although it was initially planned to obtain the bloods samples from Tuvalu too, it turned out impossible for this time. Hence, this report focuses on the filarial cases of Kiribati.

In addition, a bibliography on Bancroftian filariasis in the Pacific region was made for reviewing the regional figure of the disease control (Appendix 1).

3.2 Findings

3.2.1 Microfilarial periodicity patterns in Kiribati

Numbers of microfirariae counted by tick blood smear (ca.40uml) slide were shown in Table 1.

Table 1: Numbers of microfirariae according to the time taken the blood samples

No.	Country	Sex	Age	Date	Time (Daytime)	Time (Night)	Mf no.	ICT	PCR
1	Kiribati	M	18	03/10/01	11:35		0	+	+
1	Kiribati	M	18	03/10/01		23:00	14	+	+
2	Kiribati	F	24	03/10/01	12:17		0	+	+
3	Kiribati	M	29	03/10/01	11:43		0	+	+
3	Kiribati	M	29	03/10/01		23:09	1	+	+
4	Kiribati	M	20	03/10/01	11:46		0	+	+
4	Kiribati	M	20	03/10/01		23:14	25	+	+
5	Kiribati	M	37	03/10/01	12:15		1	+	+
5	Kiribati	M	37	03/10/01		23:19	33	+	+
6	Kiribati	M	67	03/10/01	11:52		0	+	+
6	Kiribati	M	67	03/10/01		23:24	5	+	+
7	Kiribati	M	32	03/10/01	11:56		0	+	+
7	Kiribati	M	32	03/10/01		23:28	31	+	+
8	Kiribati	F	68	03/10/01	12:00		0	+	+
2	Fiji	F	13	24/10/01	12:21		0	+	+
3	Fiji	M	65	25/10/01	9:45		0	+	+
4	Fiji	F	62	25/10/01	9:50		0	+	+

All the daytime samples, except number 5, were negative with microfirariae, whereas all the night-time samples were positive. The numbers of microfirariae were varied from 1 to 33, with the mean value of 15.7 (SD:14.0).

The periodicity index was calculated under the condition of 24 hour peak time, following the

definition by Sasa and Tanaka (1974), which gave the result of 83.15. This index was similar to the one for Nocturnal Periodic *Brugia malayi* case in Penang, Malaysia (83.60), though lower than those reported nocturnal periodic *W. bancrofti* cases (Sasa, 1976).

The results clearly demonstrated that the microfilarial periodicity pattern is a nocturnal one in Kiribati.

3.2.2 Parasite genotypes by country

3.2.2.1 Development of direct detection of filarial gene in the blood sample

There have been many PCR studies (see Appendix 2) performed on Bancroftian filariasis, however, few studies was performed on direct detection of the filarial gene by PCR with whole blood sample treated with any specific procedures. Hence, direct PCR using whole blood specimen with *W. bancrofti* gene specific primers sets were newly developed in our laboratory (see Annex 4).

The result of the PCR with the blood samples of Kiribatian was shown below.

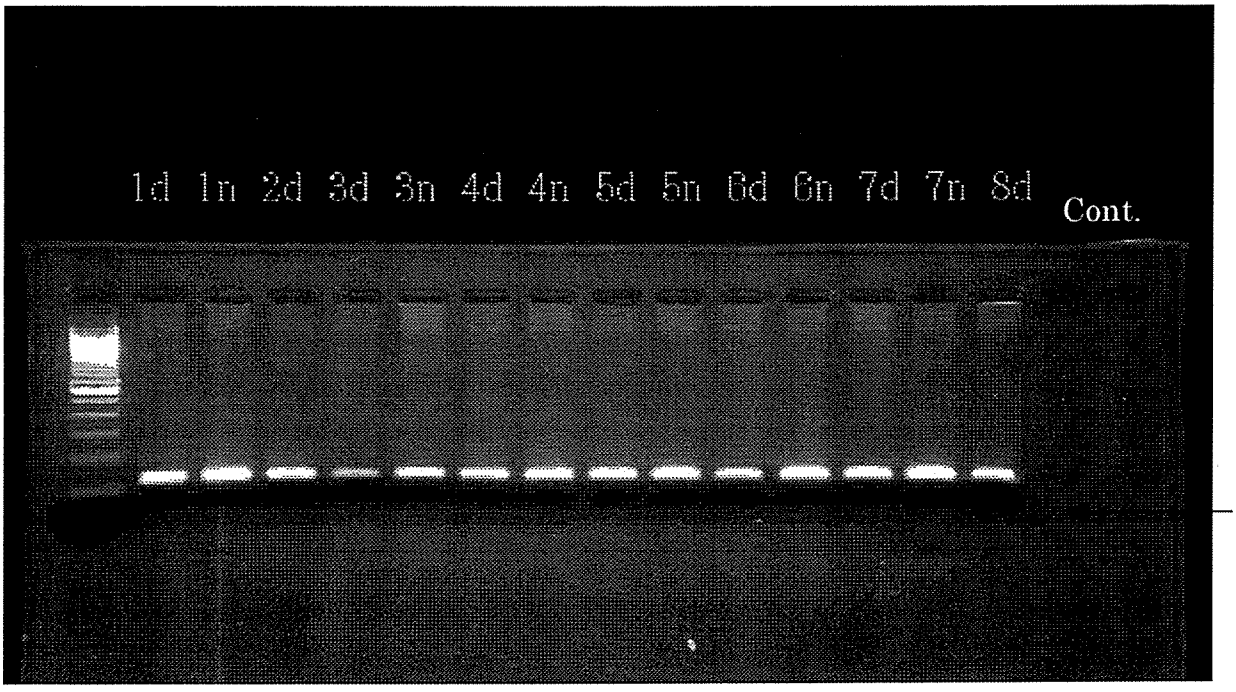

Figure 1. Detection of *W. bancrofti* DNA in Kiribatian blood samples using PCR.

The specific filarial gene was detected from both the daytime and the night-time samples. For the purpose of comparison, the presences of the parasite gene in all the Fijian specimens were confirmed using the PCR (Table 1).

These amplified DNA fractions obtained are under genomic analysis to detect some intraspecies information between them.

3.3.3 Vector mosquito species and vector competence by PCR

Mosquito genomic DNA recovery and the PCR for *W. bancrofti* were already established in our laboratory. However, no mosquito sample was obtained yet in this mission.

No recent surveys appear to have been made on the mosquito vector in Kiribati. According to Chow (1974) and Sasa (1976), only five species were reported as occurring on Tarawa, i.e. *Aedes* (*Aedimorphus*) *vexans* (Meigen, 1830) *Aedes* (*Stg.*) *aegypti* (Linnaeus, 1762), *Aedes* (*Stg.*) *marshallensis* Stone and Bohart, 1944, *Culex* (*Cux.*) *quinquefasciatus* Say, 1823, and *Culex* (*Cux.*) *annulirostris* Skuse, 1889. Among them, *Cx. quinquefasciatus* has well been known competent vector to nocturnal periodic *W. bancrofti* in Micronesian region. On the other hand, Chow (1974) suggested *Cx. annulirostris* and *Ae. vexans* as possible vectors of *W. bancrofti* in this area. Their containing of infective stage larvae rates were 3% and 34%, respectively during 1956-1957.

Recently, *Ae. polynesiensis* group mosquitoes dispersed widely to French Polynesia by air traffic was reported (Failloux A. B. et al., 1997). The risk of the exotic species infestation, both vector and parasite from the neighbor country by the traffic is still remaining in this border area.

The PCR laboratory technique established here provides the solution of vector competence to *W. bancrofti*, even if these old specimens are to be obtained.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

The nocturnal periodic *Wuchereria bancrofti* type of infection observed in Kiribati is clearly demonstrated using 2 times blood smear collection method. This is the first, and probably the last, reconfirmation work to the report of Byrd and St. Amant (1959).

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On mosquito fauna in Tarawa, Kiribati, there were 5 reported species; *Ae. Vexans, Ae. aegypti*, *Ae. marshallensis*, *Cx. quinquefasciatus*, and *Cx. annulirostris*. Among them, *Cx. quinquefasciatus*, *C. annulirostris* and *Aedes vexans* have possible competency to *W. bancrofti* was pointed out. Further studies are necessary to confirm the practical importance of the above species in the transmission of filariasis in this region.

4.2. Recommendations

6 That basic genomic research on intraspecies difference on the microfilarial periodicity be continuously supported to develop reliable and conventional diagnosis on the periodicity and to clarify their geographic distribution in the Pacific country.
7 That clinically confirmed cases by blood specimens such as amicrofilaremic, and/or cured by MDA be compared to the PCR performance for further establishment
8 That faunal research on the vectors of both types of filariae be expanded and be clarified by using the PCR system in the Pac-ELF programme countries.
9 That all the specimens both parasites and vectors, obtained through the Pac-ELF programme, should be conserved and maintained at some locally established hub-centers to make the region specific databases for further science-based control works.
10 That molecular level monitoring of exotic vector infestation be made as essential component of Pac-ELF strategy.

5. ACKNOWLEDGEMENTS

I would like to thank the Ministry of Health in Kiribati and in Fiji to help with this assigned performance. My particular thanks to Dr. Joe Koroivueta, Chief Medical Officer and Director of National Filariasis Programme to assist me while I was in Fiji. Thanks are due to Dr. Masami Nakatsu for her excellent laboratory work and to Ms. Miki Yamanaka for her assistance to this report.

REFERENCES

Byrd and St. Amant (1959) Studies on the epidemiology of filariasis on Central and South Pacific islands, Noumea. South Pacific Commission Technical Paper No.65

Chow, C. Y. (1974) Filariasis vectors and their control in the South Pacific. Forth Joint WHO/SPC Seminar on Filariasis and Vector Control Unpublished document WPR/Fil/9, 5pp.

Failloux, A. B., Raymond, M., Ung, A., Chevillon, C., and Pasteur, N. (1997) Genetic differentiation associated with commercial traffic in the Polynesian mosquito, *Aedes polynesiensis* Marks 1951. Biol. J. Linn. Soc. 60, 107-118

Sasa, M. and Tanaka, H. (1974) A statistical method for comparison and classifiction of the

microfilarial periodicity. Japanese Journal of Experimental Medicine 44, 321-346.

Sasa, M. (1976) Human Filariasis 819p. University of Tokyo Press, Tokyo, Japan.

Annex 1. LIST OF CONTACTS

Mataika House, Suva	
Dr. Joe Koroivueta	Chief Medical Officer and Director of National Filariasis Programme
Mr. Gyan Prakash	Program Manager, Vector Control Unit And Seniro Health Inspector
Divisonal Health Office, Loutoka	
Mr. Jope N. Sadranu	Divisional Health Inspector Western

Annex 2. Methods of collecting blood specimens

(1) to collect of blood samples from ICT antigen positive people twice a day (day time 12:00- 15:00 and night time 21:00- 24:00).
(2) to send samples to a WHO Collaborating Centre, the Research Institute, International Medical Centre of Japan (attention: Dr. Satoshi Nakamura) for further examination.

. Equipment provided by Pac-ELF:

- 5ml syringe with 21G needle (or 23G for children)
- 5ml test tube with heparin (Vacutainer)
- Microscope slide glass x100
- Slide box

. Procedure:

1. Select 5-30 ICT positive people in each area or country.
2. Register the name and collect information (e.g. sex, age, ethnicity, address) on the form attached (no.1)
3. Write the sample number, date and the time (24hour expression) on a label of the tube (Fig.1).
4. Prepare 2 slide glasses for making tick films as a malarial blood test write down the name, date and the time in the frosted part (Fig.2).
5. Wipe the patient's arm with alcohol cotton pad for venepuncture.
6. Make puncture and ***collect 5ml of venous blood*** of the person.
7. Then, place a drop of blood (ca. 20 micro litter) on to a clean dry microscope slide to make duplicate 2 tick films (Fig.3).
8. Expel the rest blood soon into a vacutainer tube, and mixed it well with heparin by up side down the tube 3 times gently (Fig.4).
9. Make tick films as a malaria examination. Finally, ***2 slide glasses that have 2 tick films each*** are to be made (Fig.5), and dry them thoroughly.
10. Transfer the blood sample in a cool place for store, ideally 4 C degree before sending to the WHO collaboration center.
11. Repeat the same performance 1-7 at the 2nd time of the collection.
12. The obtained slides are put in to a slide box (Fig.6) and wrap it tick and firm with a newspaper or else.
13. The obtained tubes of bloods are to tie up in a bundle and wrap it tick and firm to avoid destruction during the way to Japan.
14. Both slide and tube blood samples should be transfer to Japan directly by flight cargo as soon as possible. The address is as follows:

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(WHO collaboration Centre)
1-21-1, Toyama, Shinjuku, Tokyo 162-8655, JAPAN
Tel. +81-3-3202-7181 ext. 2834
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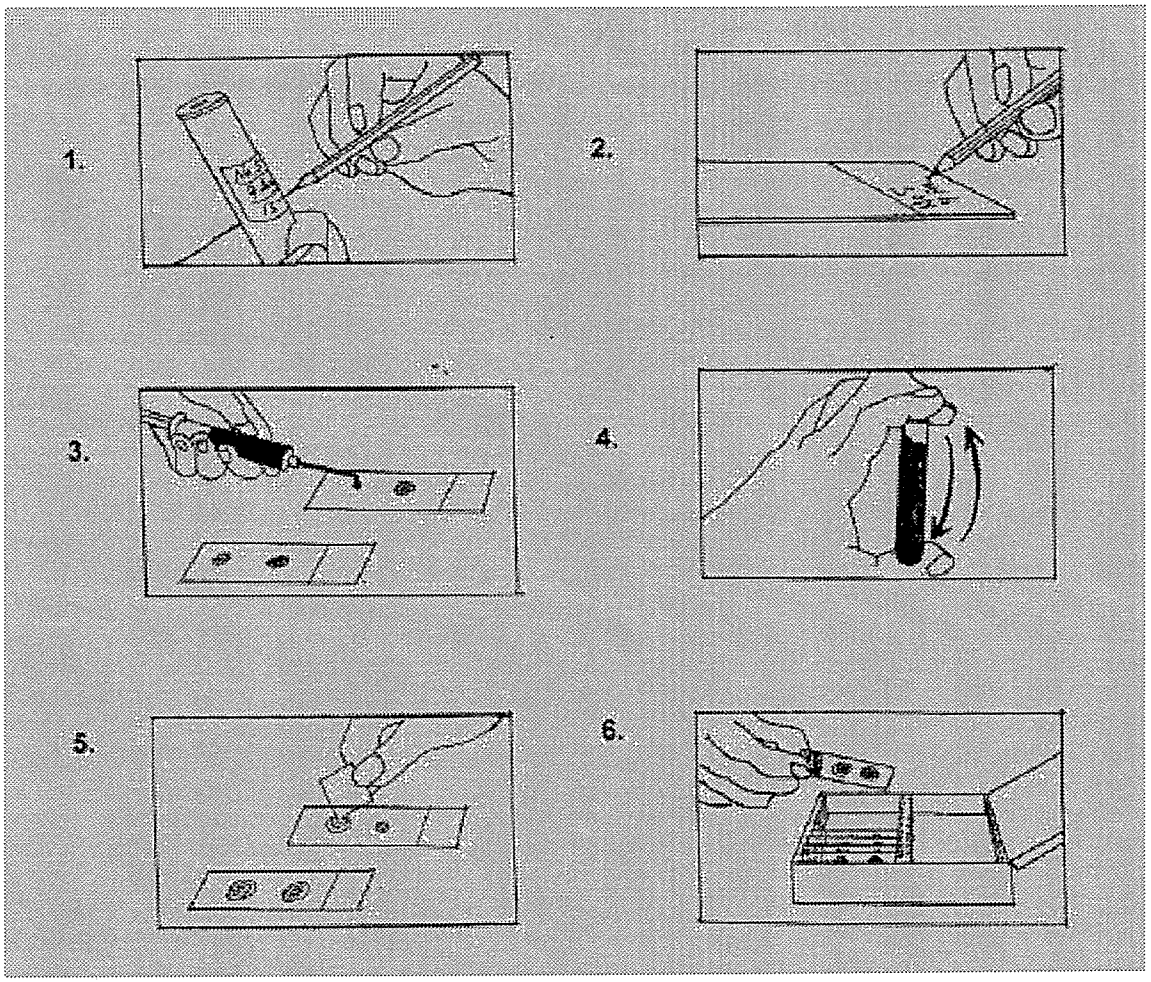

No. 1: Registration form on study of microfilarial periodicity in the Pacific countries.

Country name : (   )
Recorder name : (   )

No.	Name	Sex	Age	Ethnicity	Occupation	Address (or Island name)	Date	ICT	Past Mf test	IC	Time of blood taking 1st	Time of blood taking 2nd
							/ /				:	:
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Annex 3. Ethical issues

Request on Your Blood Donation for Study of Bancroftian Filariasis

Bancroftian microfilarial physiology, especially the periodicity in some islands is still not clear but unavailable soon in the region because of starting mass drug administration by each country program. To investigate this periodicity in terms of disease transmission in unknown areas or country is of great epidemiological importance and the urgent matter. The purpose of the study is to determine microfilarial periodicity patterns and the parasite genotypes by country. The study performed is under a scientific basis of Pac-ELF/WHO program.

In conjugation of the purpose, we ask the donation of your blood for help of the study. If you fully agree with our study, please donate total 10 ml of your blood. Blood collection are to be performed twice, in the day time (12:00-15:00) and in the night (21:00-24:00).

This sheet is for your consent, and your information such as age, gender, occupation and etc., are statistically analyzed to express anonymously. Also, your blood sample taken here is to transfer to WHO collaboration Centre of Japan and to perform further analysis of the parasite.

We promise never use your donated blood for your genetic analyses. And we also keep your personal information and interests strictly. If you have any questions about this study, please do not hesitate to touch with me.

Thank you very much for your attention.

Dr. NAKAMURA Satoshi
Division of Technology Transfer and Evaluation,
Department of Technology Development and Transfer
Research Institute, International Medical Center of Japan
(WHO collaboration Centre)
1-21-1, Toyama, Shinjuku, Tokyo 162-8655, JAPAN
Tel. +81-3-3202-7181 ext. 2834
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E-mail: snakamura@ri.imcj.go.jp

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(Confidential)

Yes, I fully agree on the request and donate my blood for the study.

Date: / /

Donor Name: Address:

Signature of the donor: Signature of the investigator

Annex 4. Material and Methods for the PCR performance

ICT positive patients lived in Kiribatu and Fijii were studied from September 2001 to October 2001. We were collected peripheral blood from them after they agreed informed consent (Annex 3.)

For PCR analysis, DNA was obtained from whole blood using Dneasy Tissue kit (QIAGEN Co. Inc.). The pellet for DNA was dissolved by 20 μ l of TE.

DNA was amplified in the SspI gene (Accesion No. L20344) that is high sensitive to *Wuchereria bancrofti*(WB).

We designed new primer sets that was WB1(5'-TGGCATCAAAAGTAGCGTAAGG-3') WB2 (5'-TCCCTCACTTACCATAAGACAACA-3') for 1stPCR produced 185bp , and WB1,WB4(5'-AAGGTTATACCAAGCAAACAAAA-3') for 2nd.PCR that length of product was 127bp.

PCR was performed with the following protocol. Five micro litter of DNA was used in a total volume of 50 μ l containing 1X reaction buffer, 0.2mM dNTPs, 20pmol of each primer, and 1.25U Pyrobest DNA polymerase(TAKARA). PCR were performed in the I-cycler (BioRad co.) with the following temperature profile: denaturation at 95°C, primer annealing at 60°C, and primer extension at 72°C, each for 30 s. After an initial denaturation (95°C 5min.), the cycle was repeated 30 times, followed by a final extension step of 7 minutes at 72°C. Second PCR was taken 1 μ l of 1st PCR product.

One-fifth of PCR product was electrophoresed on a 2% Agarose(Nakarai task co.) , stained with ethidium bromide at 0.5ug/ml, and visualized by UV transillumination. The size of PCR product was estimated from the relative migration of a 100bp ladder (GIBCO BRL).

Appendix 1.

A bibliography on Bancroftian Filariasis in the Pacific Region. (Except Australia and New Zealand)

Table 1. List of literature by country/island groups from 1966-2001

Country/island groups	Epidemiology and control	Vector studies and vector control
Papua New Guinea	Desowitz RS et al. (1966) Nnochiri E (1966) McMillan B (1968) Bryan JH (1973a) Bryan JH (1973b) Diesfeld HJ et al. (1973) Chabaud AG (1974) Hornabrook RW et al. (1975) Salfield S (1975) Spencer M (1975) McAdam KP (1978) Knight R et al. (1979) Affi SE et al. (1980) Chattani J et al. (1983) Graves PM et al. (1988) Burkot TR et al. (1989) Burkot TR et al. (1990) Kwan-Lim GE et al. (1990) Schuurkamp GJ et al. (1990) Campbell WC (1991) Day KP et al. (1991a) (1991b) (1991c) Desowitz RS et al. (1993) Kazura J et al. (1993) Bockarie M (1994) Mahanty S et al. (1994) Ottesen EA & Campbell WC (1994) Prybylski D et al. (1994) Schuurkamp et al. (1994) Vernade R et al. (1994) Beebe NW & Saul A (1995) Moulia-Pelat JP et al. (1995) Bockarie M et al. (1996) Attenborough RD et al. (1997) Kazura JW et al. (1997) Turner PF & Usurup JP (1997) Alexander ND et al. (1998) Bockarie MJ et al. (1998) Alexander ND & Grenfell BT (1999) Alexander ND et al. (1999) Alexander NDE (2000) Bockarie MJ et al. (2000a)(2000b)(2000c) Cline BL et al. (2000) Hii J et al. (2000) Horton J et al. (2000) King CL (2000) Melrose W et al. (2000) Sapak P et al. (2000) Selve BP et al. (2000) Alexander ND et al. (2001) King CL et al. (2001) Tisch DJ et al. (2001)	Colless DH (1960) Marks EN (1960) Peters W (1963a)(1963b)(1963c)(1963d) (1963e) Peters W (1964) Van Dijk WJ (1965) Saave JJ (1966) Steffan WA (1966) Standfast HA (1967) Gresitt JL & Szent-Ivany JJH (1968) Huang YM (1968a)(1968b) Sirivanakarn S (1968) Steffan WA (1968a)(1968b) Sirivanakarn S (1969) Steffan WA (1970) Balckburn CR &Ma MH (1971) Qutubuddin M (1972) Sirivanakarn S (1973) Sirivanakarn S (1975) Tenorio JA (1975) Rodhain F & Gaxotte P (1977) Tenorio JA (1977) Maffi M et al. (1979) Steffan WA (1979) Rodhain F et al. (1980) Steffan WA et al. (1980) Steffan WA & Evenhuis NL (1980) Steffan WA et al. (1981) Steffan WA & Evenhuis NL (1981) Charlwood JD et al (1984) Dissanayake S et al. (1984) Kazura JW et al. (1984) Forsyth KP et al. (1985) Bryan JH (1986) Charlwood JD (1986a) (1986b) Hunter RD & Hartberg K (1986) Charlwood JD et al. (1986a)(1986b) Charlwood JD & Bryan JH (1987) Charlwood JD & Dagoro H (1987a) (1987b) Charlwood JD & Graves PM (1987) Schuurkamp GJ et al. (1987) Burkot TR et al. (1988a) (1988b) Charlwood JD et al. (1988) Kazura JW et al. (1992) Foley DH & Bryan JH (1993) Foley DH et al. (1993) Pritchard DI. (1993) Beebe NW et al. (1994) Figueredo-Silva J et al. (1994) Green DF & Yates JA (1994) Prybylski D et al. (1994) Bryan JH et al. (1995) Paru R et al. (1995) Beebe NW et al. (1996) Cooper RD et al. (1997) Bockarie MJ et al. (1999) Chapman HF et al. (2000) Cooper RD & Frances SP (2000) Frances SP et al. (1999) Frances SP et al. (2001)

Country/island groups	Epidemiology and control	Vector studies and vector control
Solomon islands		Taylor B (1972) Genga R & Maffi M (1973) Maffi M & Taylor B (1974) Taylor B & Tenorio JA (1974) Webber RH (1975) Webber RH (1977) Elliot SA (1980) Okazawa T et al. (1991) Taylor B & Maffi M (1991) Samarawickrema WA et al. (1992) Foley DH et al. (1994) Hii LJ et al. (1995) Bell D et al. (1999) Beebe NW et al. (2000)
Fiji	Mataika JU et al. (1971a) (1971b) Desowitz RS & Southgate BA. (1973) Grenfell BT et al. (1990) Mataika JU et al. (1998)	Pillai & Rakai I (1970) Reinert JF (1972) Rakai IM et al. (1974) Wright JD (1979) Goettel MS et al. (1980) Toohey MK et al. (1982) Toohey MK et al. (1985) Gardner JM et al (1986) Laille M et al. (1990) Kay BH et al. (1995)
Vanuatsu		Rodhain F & Fauran P (1975) Maffi M & Tonorio JA (1977) Bryan JH (1981) Bouree P et al. (1987)
New Caredonia	Lagraulet J et al. (1971) Hawking F & Denham DA (1976) Le Godinec G & Fauran P. (1984) Monchy D et al. (1993) Monchy D et al. (1996) Monchy D et al. (1999) Raccurt CP (1999)	Laird M (1967) Fauran P & Rodhain F (1986)
Samoa	Hariston NG et al. (1968) Ciferri F et al. (1969) Kessel JF et al. (1970) Mahoney LE Jr. & Aiu P (1970) Bryan JH & Southgate BA. (1976) Kimura et al. (1984) Kimura et al. (1985a)(1985b)(1985c) Kimura et al. (1992) Reid EC et al. (1993) Fauran P et al. (1981)	Stone A (1966) Ramalingam S & Belkin JN (1975) Pillai JS & Urdang J (1979) Samarawickrema WA et al. (1985a)(1985b) Samarawickrema WA et al. (1987a)(1987b) Samarawickrema WA et al. (1992a)(1992b) (1992c) Failloux AB et al. (1993) Samarawickrema WA et al. (1993)
Tonga	Ramalingam S (1968) Desowitz RS & Hitchcook JC. (1974) Taylor R (1987)	Ramalingam S & Belkin JN (1965) Hitchcook JC (1971) Huang YM & Hitchcock JC (1980) Trpis M (1981)
Mariana islands/ Guam	Nowell WR (1977)	Basio RG &Reisen WK (1971) Darsie RF & Cagampang-Ramos A (1971) Reisen WK et al. (1972) Rozeboom LE & Bridges JR (1972) Nowell WR (1975) Nowell WR & Sutton DR (1977) Nowell WR (1978) Rai KS (1986) Nowell WR & Ward RA (1989) Savage HM et al. (1993)

Country/island groups	Epidemiology and control	Vector studies and vector control
French polynesia	Laurence BR (1968) Lagraulet J et al. (1972) Lagraulet J (1973) Lagraulet J et al. (1973) Carme B (1979) Perolat P et al. (1986) Laurence BR (1991)	Marks EN (1951) Mouchet J & Laigret J (1967) Ali SR & Rozeboom LE (1971) Hitchcock JC & Rozeboom LE (1973) Tesfa-Yohannes TM (1973) Huang YM (1975) Rosen L et al. (1976) Huang YM (1977) Huang YM (1978) Silberstein AJ et al. (1978) Klein JM et al (1983) Klein JM et al. (1984) Cartel JL et al. (1990) Cartel JL et al. (1992) Lardeux F et al. (1992) Lardeux FJ (1992) Failloux AB et al. (1994) Failloux AB et al. (1995) Linley JR & Serrice MW (1995) Mercer DR et al. (1995) Failloux AB et al. (1997) Shiu S et al. (1997) Mercer DR (1999) Paupy C et al. (2000) Lardeux F & Cheffort J (2001)
Cook islands	Lunde MN et al. (1988) Steel C et al. (1996) Zhong M et al. (1996)	
Hawaii		Zimmerman EC (1948-1981) Steffan WA (1970) Tempelis CH et al. (1970)
South pacific/Australia	Cumpston JHL (1924) Hales S et al. (1999)	Belkin JN (1962) Belkin JN (1968) Hawking F & Denham DA (1976) Hirshman JH (1976) Lee DJ et al. (1980) Lee DJ et al. (1982) Pashley DN & Pashley DP (1983) Lee DJ et al. (1984) Lee DJ et al. (1987a) (1987b) Dev V (1987) Fauran P & Taylor R (1988) Evenhuis NL (1989) Bryan JH et al. (1990)
World and general	Park CB (1988) Rodhain F (1996)	Knight KL & Stone A (1977) Knight KL (1978) Carme B &Laigret J. (1979) Manning DL et al. (1982) Ward RA (1984) Gaffigan TV & Ward RA (1985) Rozendaal JA & Curtis CF. (1989) Ward RA (1992) Knudsen AB (1995) Munstermann LE & Conn JE (1997) Nutman TB (2000)

List of References

<Papua New Guinea>

a) Epidemiology and control

Afifi SE. Spencer M. Hudson PB. Tavil NW. Biting prevalence and malaria transmission patterns in the Anopheles punctulatus complex (Diptera: **Culicidae**) in **Papua New Guinea**. *Australian Journal of Experimental Biology & Medical Science. 58(1):1-17, 1980 Feb.*

Alexander ND. Kazura JW. Bockarie MJ. Perry RT. Dimber ZB. Grenfell BT. Alpers MP. Parental infection confounded with local infection intensity as risk factors for childhood microfilaraemia in **bancroftian filariasis**. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 92(1):23-4, 1998 Jan-Feb.*

Alexander ND. Grenfell BT. The effect of pregnancy on **Wuchereria bancrofti microfilaria**l load in humans. *Parasitology. 119 (Pt 2):151-6, 1999 Aug.*

Alexander ND. Perry RT. Dimber ZB. Hyun PJ. Alpers MP. Kazura JW. Acute **disease** episodes in a **Wuchereria bancrofti**-endemic area of **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 61(2):319-24, 1999 Aug.*

Alexander NDE. *Wuchereria bancrofti* infection and disease in a rural area of Papua New Guinea. PNG Med J 2000;43(3-4):166-171

Alexander ND. Bockarie MJ. Dimber ZB. Griffin L. Kazura JW. Alpers MP. Migration and dispersal of lymphatic **filariasis** in **Papua New Guinea**. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 95(3):277-9, 2001 May-Jun.*

Attenborough RD. Burkot TR. Gardner DS. Altitude and the risk of bites from **mosquitoes** infected with malaria and **filariasis** among the Mianmin people of **Papua New Guinea**. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 91(1):8-10, 1997 Jan-Feb.*

Beebe NW. Saul A. Discrimination of all members of the Anopheles punctulatus complex by polymerase chain reaction--restriction fragment length polymorphism analysis. *American Journal of Tropical Medicine & Hygiene. 53(5):478-81, 1995 Nov.*

Bockarie M. Can lymphatic **filariasis** be eradicated in **Papua New Guinea**?. ***Papua New Guinea** Medical Journal. 37(2):61-4, 1994 Jun.*

Bockarie M. Kazura J. Alexander N. Dagoro H. Bockarie F. Perry R. Alpers M. Transmission dynamics of **Wuchereria bancrofti** in East Sepik Province, **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 54(6):577-81, 1996 Jun.*

Bockarie MJ. Alexander ND. Hyun P. Dimber Z. Bockarie F. Ibam E. Alpers MP. Kazura JW. Randomised community-based trial of annual single-dose diethylcarbamazine with or without ivermectin against **Wuchereria bancrofti** infection in human beings and **mosquitoes**. *Lancet. 351(9097):162-8, 1998 Jan 17.*

Bockarie MJ, Ibam E, Alexander NDE, Hyun P, Dimber Z, Bockarie F, Alpers MP, Kazura JW. Towards eliminating lymphatic filariasis in Papua New Guinea: Impact of annual single-dose mass treatment on transmission of *Wuchereria bancrofti* in East Septik Province. PNG Med J 2000a;43(3-4):172-182

Bockarie MJ, Jenkins C, Blakie WM, Lagog M, Alpers MP. Control of lymphatic filariasis in a hunter-gatherer group in Madang Province. PNG Med J 2000b;43(3-4):196-202

Bockarie MJ. Fischer P. Williams SA. Zimmerman PA. Griffin L. Alpers MP. Kazura JW. Application of a polymerase chain reaction-ELISA to detect **Wuchereria bancrofti** in pools of wild-caught Anopheles punctulatus in a **filaria**sis control area in **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 62(3):363-7, 2000c Mar.*

Bryan JH. Studies on the Anopheles punctulatus complex. II. Hybridization of the member species. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 67(1):70-84, 1973a*

Bryan JH. Studies on the Anopheles punctulatus complex. I. Identification by proboscis morphological criteria and by cross-mating experiments. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 67(1):64-9, 1973b.*

Burkot TR. Narara A. Paru R. Graves PM. Garner P. Human host selection by anophelines: no evidence for preferential selection of malaria or **microfilaria**e-infected individuals in a hyperendemic area. *Parasitology. 98 Pt 3:337-42, 1989 Jun.*

Burkot TR. Molineaux L. Graves PM. Paru R. Battistutta D. Dagoro H. Barnes A. Wirtz RA. Garner P. The prevalence of naturally acquired multiple infections of **Wuchereria bancrofti** and human malarias in anophelines. *Parasitology. 100 Pt 3:369-75, 1990 Jun.*

Campbell WC. Ivermectin as an anti**parasitic** agent for use in humans. [Review] [103 refs] *Annual Review of Microbiology. 45:445-74, 1991.*

Cattani J. Taufa T. Anderson W. Lourie J. Malaria and **filaria**sis in the Ok Tedi Region of the Star Mountains, **Papua New Guinea**. ***Papua New Guinea** Medical Journal. 26(2):122-6, 1983 Jun.*

Chabaud AG. [Hyperspecialised **Filaria** parasite of the **intestinal** wall of Coendu (author's transl)]. [French] *Annales de Parasitologie Humaine et Comparee. 49(4):451-5, 1974 Jul-Aug.*

Cline BL. Savioli L. Neira M. Introduction: Opportunities to work together: **intestinal helminth** control and programmes to eliminate lymphatic **filaria**sis. [Review] [14 refs] *Parasitology. 121 Suppl:S3-4, 2000.*

Day KP. Gregory WF. Maizels RM. Age-specific acquisition of immunity to infective **larva**e in a **bancroftia**n **filaria**sis endemic area of **Papua New Guinea**. *Parasite Immunology. 13(3):277-90, 1991a May.*

Day KP. Spark R. Garner P. Raiko A. Wenger JD. Weiss N. Mitchell GF. Alpers MP. Kazura JW. Serological evaluation of the macrofilaricidal effects of diethylcarbamazine treatment in **bancroftia**n **filaria**sis. *American Journal of Tropical Medicine & Hygiene. 44(5):528-35, 1991b May.*

Day KP. Grenfell B. Spark R. Kazura JW. Alpers MP. Age specific patterns of change in the dynamics of **Wuchereria bancrofti** infection in **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 44(5):518-27, 1991c May.*

Desowitz RS. Saave JJ. Sawada T. Studies on the immuno-epidemiology of **parasitic** infections in **New Guinea**. I. Population studies on the relationship of a skin test to microfilaraemia. *Annals of Tropical Medicine & Parasitology. 60(3):257-64, 1966 Sep.*

Desowitz RS. Jenkins C. Anian G. **Bancroftia**n **filaria**sis in an isolated hunter-gatherer shifting horticulturist group in **Papua New Guinea**. *Bulletin of the World Health Organization. 71(1):55-8, 1993.*

Diesfeld HJ. Dutta SN. Braun-Munzinger R. [Immundiagnostic studies on persons from a **Wuchereria bancrofti** endemic area]. [German] *Zeitschrift fur Tropenmedizin und Parasitologie. 24(4):439-46, 1973 Dec.*

Graves PM. Burkot TR. Carter R. Cattani JA. Lagog M. Parker J. Brabin BJ. Gibson FD. Bradley DJ. Alpers MP. Measurement of malarial infectivity of human populations to **mosquito**es in the Madang area, **Papua, New Guinea**. *Parasitology. 96 (Pt 2):251-63, 1988 Apr.*

Hii J, Bockarie MJ, Flew S, Genton B, Tali A, Dagoro H, Waulas B, Samson M, Alpers MP. The epidemiology and control of lymphatic filariasis on Lihir Island, New Ireland Province. PNG Med J 2000;43(3-4):188-195

Horton J. Witt C. Ottesen EA. Lazdins JK. Addiss DG. Awadzi K. Beach MJ. Belizario VY. Dunyo SK. Espinel M. Gyapong JO. Hossain M. Ismail MM. Jayakody RL. Lammie PJ. Makunde W. Richard-Lenoble D. Selve B. Shenoy RK. Simonsen PE. Wamae CN. Weerasooriya MV. An analysis of the safety of the single dose, two drug regimens used in programmes to eliminate lymphatic **filaria**sis. [Review] [15 refs] *Parasitology. 121 Suppl:S147-60, 2000.*

Kazura J. Greenberg J. Perry R. Weil G. Day K. Alpers M. Comparison of single-dose diethylcarbamazine and ivermectin for treatment of **bancroftia**n **filaria**sis in **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 49(6):804-11, 1993 Dec.*

Kazura JW. Bockarie M. Alexander N. Perry R. Bockarie F. Dagoro H. Dimber Z. Hyun P. Alpers MP. Transmission intensity and its relationship to infection and **disease** due to **Wuchereria bancrofti** in **Papua New Guinea**. *Journal of Infectious Diseases. 176(1):242-6, 1997 Jul.*

King CL. Human immune responses to lymphatic filariasis in Papua New Guinea. PNG Med J 2000;43(3-4):203-212

King CL. Connelly M. Alpers MP. Bockarie M. Kazura JW. Transmission intensity determines lymphocyte responsiveness and cytokine bias in human lymphatic **filaria**sis. *Journal of Immunology. 166(12):7427-36, 2001 Jun 15.*

Knight R. McAdam KP. Matola YG. Kirkham V. **Bancroftia**n **filaria**sis and other **parasitic** infections in the Middle Fly River region of Western **Papua New Guinea** I. Clinical, parasitooogical and serological studies. *Annals of Tropical Medicine & Parasitology. 73(6):563-76, 1979 Dec.*

Kwan-Lim GE. Forsyth KP. Maizels RM. **Filaria**l-specific IgG4 response correlates with active **Wuchereria bancrofti** infection. *Journal of Immunology. 145(12):4298-305, 1990 Dec 15*

Hornabrook RW. Kelly A. McMillan B. **Parasitic** infection of man on Kar Kar Island, **New Guinea**. *American Journal of Tropical Medicine & Hygiene. 24(4):590-5, 1975 Jul.*

Mahanty S. Day KP. Alpers MP. Kazura JW. Anti**filaria**l IgG4 antibodies in children from **filaria**-endemic areas correlate with duration of infection and are dissociated from anti**filaria**l IgE antibodies. *Journal of Infectious Diseases. 170(5):1339-43, 1994 Nov.*

McAdam KP. Leprosy, **filaria**sis and malaria as causes of secondary amyloidosis in the tropics. ***Papua New Guinea** Medical Journal. 21(1):69-78, 1978 Mar.*

McMillan B. Lawang bark as a rubefacient in the treatment of **filaria**l lymphangitis in **New Guinea**. *Medical Journal of Australia. 2(2):63-4, 1968 Jul 13.*

Melrose W, Pisters P, Turner P, Kombati Z, Selve BP, Hii J, Speare R. Prevalence of filarial antigenaemia in Papua New Guinea: results of surveys by the School of Public Health and Tropical Medicine, James Cook University, Townsville, Australia. PNG Med J 2000;43(3-4):161-165

Moulia-Pelat JP. Nguyen LN. Hascoet H. Luquiaud P. Nicolas L. Advantages of an annual single dose of ivermectin 400 micrograms/kg plus diethylcarbamazine for community treatment of **bancroftia**n **filaria**sis. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 89(6):682-5, 1995 Nov-Dec.*

Nnochiri E. Thiabendazole in human **filaria**sis. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 60(5):601-4, 1966.*

Ottesen EA. Campbell WC. Ivermectin in human medicine. [Review] [36 refs] *Journal of Antimicrobial Chemotherapy. 34(2):195-203, 1994 Aug.*

Prybylski D, Alto WA, Mengeap S, Odaibaiyue S. Introduction of an integrated community-based bancroftian filariasis control program into the Mt Bosavi region of the Southern Highlands of Papua New Guinea. P N G Med J. 1994 Jun;37(2):82-9.

Salfield S. **Filaria**l arthritis in the Sepik District of **Papua New Guinea**. *Medical Journal of Australia. 1(9):264-7, 1975 Mar 1.*

Sapak P, Williams G, Bryan J, Riley I. Efficacy of mass single-dose diethylcarbamazine and DEC-fortified salt against bancroftian filariasis in Papua New Guinea six months after treatment. PNG Med J 2000;43(3-4):213-220

Schuurkamp GJ. Kereu RK. Bulungol PK. Diethylcarbamazine in the control of **bancroftian filariasis** in the highly endemic Ok Tedi area of **Papua New Guinea**: phase 1. ***Papua New Guinea** Medical Journal. 33(2):89-98, 1990 Jun.*

Schuurkamp GJ. Kereu RK. Bulungol PK. Kawereng A. Spicer PE. Diethylcarbamazine in the control of **bancroftian filariasis** in the Ok Tedi area of **Papua New Guinea**: phase 2--annual single-dose treatment. ***Papua New Guinea** Medical Journal. 37(2):65-81, 1994 Jun.*

Selve BP, Bwadua S, Misa M, James K, Usurup JP, Turner P, Melrose W, Yad W, Samuel R, Eddie C. Community empowerment in the control of lymphatic filariasis in Misima, Milne Bay Province using diethylcarbamazine in comnination with Albendazole. PNG Med J 2000;43(3-4):183-187

Spencer M. Letter: A note on the distribution and prevalence of Anopheles subpictus grassi. ***Papua New Guinea** Medical Journal. 18(2):126-7, 1975 Jun.*

Tisch DJ. Hazlett FE. Kastens W. Alpers MP. Bockarie MJ. Kazura JW. Ecologic and biologic determinants of **filaria**l antigenemia in **bancroftian filariasis** in **Papua New Guinea**. *Journal of Infectious Diseases. 184(7):898-904, 2001 Oct 1.*

Turner PF. Usurup JP. A possible case of lymphatic **filariasis** in a white miner in **Papua New Guinea**. *Medical Journal of Australia. 166(4):223, 1997 Feb 17.*

Vernede R. van Meer MM. Alpers MP. Smoke as a form of personal protection against **mosquitos**, a field study in **Papua New Guinea**. *Southeast Asian Journal of Tropical Medicine & Public Health. 25(4):771-5, 1994 Dec.*

b) Vector control

Beebe NW. Foley DH. Saul A. Cooper L. Bryan JH. Burkot TR. DNA probes for identifying the members of the Anopheles punctulatus complex in **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 50(2):229-34, 1994 Feb.*

Beebe NW. Foley DH. Cooper RD. Bryan JH. Saul A. DNA probes for the Anopheles punctulatus complex. *American Journal of Tropical Medicine & Hygiene.* 54(4):395-8, 1996 Apr

Bockarie MJ. Hii JL. Alexander ND. Bockarie F. Dagoro H. Kazura JW. Alpers MP. Mass treatment with ivermectin for **filariasis** control in **Papua New Guinea**: impact on **mosquito** survival. *Medical & Veterinary Entomology. 13(2):120-3, 1999 May.*

Blackburn CR, Ma MH. Skin reactions of natives in the Western Highlands of New Guinea to an antigen prepared from Dirofilaria Immitis. Trop Geogr Med. 1971 Sep;23(3):272-7.

Burkot TR. Graves PM. Paru R. Lagog M. Mixed blood feeding by the malaria **vectors** in the Anopheles punctulatus complex (Diptera: **Culicidae**). *Journal of Medical Entomology. 25(4):205-13, 1988a Jul.*

Burkot TR. Graves PM. Paru R. Wirtz RA. Heywood PF. Human malaria transmission studies in the Anopheles punctulatus complex in **Papua New Guinea**: sporozoite rates, inoculation rates, and sporozoite densities. *American Journal of Tropical Medicine & Hygiene. 39(2):135-44, 1988b Aug.*

Bryan JH. **Vectors** of **Wuchereria bancrofti** in the Sepik Provinces of **Papua New Guinea**. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 80(1):123-31, 1986.*

Bryan JH. Dagoro H. Southgate BA. **Filarial vector** studies in a diethylcarbamazine-treated and in untreated villages in **Papua New Guinea**. *Journal of Tropical Medicine & Hygiene. 98(6):445-51, 1995 Dec.*

Chapman HF. Kay BH. Ritchie SA. van den Hurk AF. Hughes JM. Definition of species in the **Culex** sitiens subgroup (Diptera: **Culicidae**) from **Papua New Guinea** and Australia. *Journal of Medical Entomology. 37(5):736-42, 2000 Sep.*

Charlwood JD, Jolley D. The coil works (against mosquitoes in Papua New Guinea). Trans R Soc Trop Med Hyg. 1984;78(5):678.

Charlwood JD. A differential response to **mosquito** nets by Anopheles and **Culex mosquitoes** from **Papua New Guinea**. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 80(6):958-60, 1986a.*

Charlwood JD. Survival rate variation of Anopheles farauti (Diptera: **Culicidae**) between neighboring villages in coastal **Papua New Guinea**. *Journal of Medical Entomology. 23(4):361-5, 1986b Jul 28.*

Charlwood JD, Paru R, Dagoro H, Lagog M. Influence of moonlight and gonotrophic age on biting activity of Anopheles farauti (Diptera: Culicidae) from Papua New Guinea. J Med Entomol. 1986a Mar 31;23(2):132-5.

Charlwood JD, Graves PM, Alpers MP. The ecology of the Anopheles punctulatus group of mosquitoes from Papua New Guinea: a review of recent work. PNG Med J. 1986b Mar;29(1):19-26.

Charlwood JD. Bryan JH. A mark-recapture experiment with the **filariasis vector** Anopheles punctulatus in **Papua New Guinea**. *Annals of Tropical Medicine & Parasitology. 81(4):429-36, 1987 Aug.*

Charlwood JD. Dagoro H. Repellent soap for use against malaria **vectors** in **Papua New Guinea**. ***Papua New Guinea** Medical Journal. 30(4):301-3, 1987a Dec.*

Charlwood JD. Dagoro H. Impregnated bed nets for the control of **filariasis** transmitted by Anopheles punctulatus in rural **Papua New Guinea**. ***Papua New Guinea** Medical Journal. 30(3):199-202, 1987b Sep.*

Charlwood JD. Graves PM. The effect of permethrin-impregnated bednets on a population of Anopheles farauti in coastal **Papua New Guinea**. *Medical & Veterinary Entomology. 1(3):319-27, 1987 Jul.*

Charlwood JD, Graves PM, Marshall TF. Evidence for a 'memorized' home range in Anopheles farauti females from Papua New Guinea. Med Vet Entomol. 1988 Apr;2(2):101-8.

Colless, D.H. 1960. Some species of *Culex* (*Lophoceraomyia*) from New Guinea and adjacent islands, with descriptions of four new species and notes on the male of *Culex fraudatrix* Theobald. (Diptera: Culicidae). *Proc. Linn. Soc. N.S.W.* 84: 382-90.

Cooper RD, Waterson DG, Kupo M, Foley DH, Beebe NW, Sweeney AW. Anopheline mosquitoes of the western province of Papua New Guinea. J Am Mosq Control Assoc. 1997 Mar;13(1):5-12.

Cooper RD, Frances SP. Biting sites of Anopheles koliensis on human collectors in Papua New Guinea. J Am Mosq Control Assoc. 2000 Sep;16(3):266-7.

Dissanayake S. Forsyth KP. Ismail MM. Mitchell GF. Detection of circulating antigen in **bancroftian filariasis** by using a monoclonal antibody. *American Journal of Tropical Medicine & Hygiene. 33(6):1130-40, 1984 Nov.*

Figueredo-Silva J. Dreyer G. Guimaraes K. Brandt C. Medeiros Z. **Bancroftian** lymphadenopathy: absence of eosinophils in tissues despite peripheral blood hypereosinophilia. *Journal of Tropical Medicine & Hygiene. 97(1):55-9, 1994 Feb.*

Foley DH, Bryan JH. Electrophoretic keys to identify members of the Anopheles punctulatus complex of vector mosquitoes in Papua New Guinea. Med Vet Entomol. 1993 Jan;7(1):49-53.

Foley DH, Paru R, Dagoro H, Bryan JH. Allozyme analysis reveals six species within the Anopheles punctulatus complex of mosquitoes in Papua New Guinea. Med Vet Entomol. 1993 Jan;7(1):37-48.

Forsyth KP. Spark R. Kazura J. Brown GV. Peters P. Heywood P. Dissanayake S. Mitchell GF. A monoclonal antibody-based immunoradiometric assay for detection of circulating antigen in **Bancroftian filariasis**. *Journal of Immunology. 134(2):1172-7, 1985 Feb.*

Frances SP, Cooper RD, Popat S, Sweeney AW. Field evaluation of the repellents deet, CIC-4, and AI3-37220 against Anopheles in Lae, Papua New Guinea. J Am Mosq Control Assoc. 1999 Sep;15(3):339-41.

Frances SP, Cooper RD, Popat S, Beebe NW. Field evaluation of repellents containing deet and AI3-37220 against Anopheles koliensis in Papua New Guinea. J Am Mosq Control Assoc. 2001 Mar;17(1):42-4.

Green DF. Yates JA. Microscopic visualization of **Wuchereria** and Brugia **larval** stages in intact cleared **mosquitoes**. *American Journal of Tropical Medicine & Hygiene. 51(4):483-8, 1994 Oct.*

Gressitt, J.L. & J.J.H. Szent-Ivany 1968. Bibliography of New Guinea Entomology. *Pac. Insects* Monogr. 18, 674 p.

Huang, Y.-M. 1968a. A new subgenus of Aedes (Diptera, Culicidae) with illustrated key to the subgenera of the Papuan Subregion (Diptera: Culicidae). J. Med. Entomol. 5: 169-88.

Huang, Y.-M. 1968b. Aedes (Verrallina) of the Papuan Subregion (Diptera: Culicidae). Pac. Insects Monogr. 17, 73 p.

Hunter RD Jr. Hartberg K. Observations On the Mitotic Chromosomes of the Mosquito *Toxorhynchites amboinensis* (Doleschall). 119. Mosquito Systematics Vol.18.1986

Kazura JW. Spark R. Forsyth K. Brown G. Heywood P. Peters P. Alpers M. Parasitologic and clinical features of **bancroftian filariasis** in a community in East Sepik Province, **Papua New Guinea**. *American Journal of Tropical Medicine & Hygiene. 33(6):1119-23, 1984 Nov.*

Kazura JW. Hazlett FE Jr. Pearlman E. Day K. el-Zeiny A. Nilsen TW. Alpers MP. Antigenicity of a protective recombinant **filarial** protein in human **bancroftian filariasis**. *Journal of Infectious Diseases. 166(6):1453-7, 1992 Dec.*

Maffi, M., W.A. Steffan & P. Supardi 1979. A survey of the mosquito fauna (Diptera: Culicidae) of the Irian Jaya Province, New Guinea, Indonesia. *Pac. Insects* 21: 203-20.

Marks, E.N. 1960. Taxonomy and biology of some Papuan Culicidae I. Genus Topomyia. Pac. Insects 2: 91-98.

Paru R. Hii J. Lewis D. Alpers MP. Relative repellency of woodsmoke and topical applications of plant products against **mosquitoes**. ***Papua New Guinea** Medical Journal. 38(3):215-21, 1995 Sep.*

Peters, W. 1963a. Mosquitoes of New Guinea (Diptera: Culicidae) IV.--Two new species, genera Aedes Meigen and Armigeres Theobald. Proc. R. Entomol. Soc. Lond. (B) 32: 1-11.

Peters, W. 1963b. Mosquitoes of New Guinea (Diptera: Culicidae). Part V.--New species and previously undescribed pupae of the genus Tripteroides Giles. Proc. R. Entomol. Soc. Lond. (B) 32: 63-71.

Peters, W. 1963c. Mosquitoes of New Guinea (Diptera: Culicidae) VI.--The genus Tripteroides Giles: a new species of the subgenus Polylepidomyia Theobald, notes on taxonomy and distribution and a revised key to the described pupae. Proc. R. Entomol. Soc. Lond. (B) 32: 89-100.

Peters, W. 1963d. Mosquitoes of New Guinea (Diptera: Culicidae) VII.--A new species complex of Uranotaenia Lynch Arribalzaga, 1891. Proc. R. Entomol. Soc. Lond. (B) 32: 135-44.

Peters, W. 1963e. Mosquitoes of New Guinea (Diptera: Culicidae). Part VIII.--New species of the genus Uranotaenia Lynch Arribalzaga, 1891. Proc. R. Entomol. Soc. Lond. (B) 32: 203-09.

Peters, W. 1964. Mosquitoes of New Guinea (Diptera: Culicidae). Part IX.--Further new species of the genus Uranotaenia Lynch Arribalzaga and notes on the genus. Proc. R. Entomol. Soc. Lond. (B) 33: 19-29.

Pritchard DI. Does the duration of antigen retention in draining lymphoid tissue following GI nematode infection determine the 'responder phenotype' of the host?. *International Journal for Parasitology. 23(1):11-2, 1993 Feb.*

Prybylski D. Alto WA. Mengeap S. Odaibaiyue S. Introduction of an integrated community-based **bancroftian filariasis** control program into the Mt Bosavi region of the Southern Highlands of **Papua New Guinea**. ***Papua New Guinea** Medical Journal. 37(2):82-9, 1994 Jun.*

Qutubuddin, M. 1972. A new species of *Finlaya* (Diptera: Culicidae) from Papua. *Pakistan J. Health.* 22: 119-20. [The author's surname is also spelled in some papers as Qutub-ud-din.]

Rodhain F. Gaxotte P. An entomological survey on the **mosquitoes** of Wuvulu Island, **Papua-New Guinea**. *Southeast Asian Journal of Tropical Medicine & Public Health. 8(1):77-9, 1977 Mar.*

Rodhain F. Gaxotte P. Boutonnier A. [Results of an entomological survey of **mosquitoes** (diptera:**Culicidae**) in Hermit Islands and Wuvulu Island (**Papua, New Guinea**)]. [French] *Bulletin de la Societe de Pathologie Exotique et de Ses Filiales. 73(2):214-9, 1980 Mar-Apr.*

Saave JJ. Desowitz RS. Studies on **filariasis** in **New Guinea**. Observations on periodicity. *Medical Journal of Malaya. 20(4):335-6, 1966 Jun.*

Schuurkamp GJ. Matango M. Kereu R. Napil J. Malaria, splenomegaly and **filariasis** in the Ok Tedi area of the Star Mountains, **Papua New Guinea**, three years after residual DDT spraying. ***Papua New Guinea** Medical Journal. 30(4):291-300, 1987 Dec.*

Sirivanakarn, S. 1968. The *Culex* subgenus *Lophoceraomyia* in New Guinea and Bismarck Archipelago (Diptera: Culicidae). *Pac. Insects Monogr.* 17: 75-186.

Sirivanakarn, S. 1969. Note on the change of specific name of New Guinea Culex (*Lophoceraomyia*) (Diptera: Culicidae). *J. Med. Entomol.* 6: 119.

Sirivanakarn, S. 1973. Descriptions of two new species of *Culex (Lophoceraomyia*) with notes on three other species from the Papuan Subregion (Diptera: Culicidae). *J. Med. Entomol.* 10: 212-16.

Sirivanakarn, S. 1975. A new species of *Culex (Eumelanomyia*) Theobald from Manus Island, Papua-New Guinea (Diptera: Culicidae). *Mosq. Syst.* 7: 394-400.

Standfast HA. Biting times of nine species of **New Guinea Culicidae** (Diptera). *Journal of Medical Entomology. 4(2):192-6, 1967 May.*

Steffan, W.A. 1966. A checklist and review of the mosquitoes of the Papuan Subregion (Diptera: Culicidae). J. Med. Entomol. 3: 179-237.

Steffan WA. Mosquitoes of the Papuan subregion (Diptera: Culicidae) Toxorhynchites (Toxorhynchites) amboinensis (Doleschall). J Med Entomol. 1968a Aug 1;5(3):310-3.

Steffan WA. Armigeres of the **Papua**n Subregion (Diptera: **Culicidae**). *Journal of Medical Entomology. 5(2):135-59, 1968b Jun 10.*

Steffan WA The Mosquito Fauna of the Papuan Subregion 53. Mosquito Systematics Vol.2. 1970

Steffan WA. 1979. New Culex (Acallyntrum) from the Papuan Subregion (Diptera: Culicidae). J. Med. Entomol. 16: 133-39

Steffan WA, N.L. Evenhuis & D.L. Manning 1980. Annotated bibliography of Toxorhynchites (Diptera: Culicidae). J.Med. Entomol. Suppl. 3, 140 p.

Steffan WA, Evenhuis NL. Description of the pupa of *Toxorhynchites (Lynchiella) rutilus septentrionalis* (Diptera: Culicidae). 175. Mosquito Systematics Vol.12.1980

Steffan WA. Evenhuis NL. A New Species of *Toxorhynchites* from Papua New Guinea (Diptera:Culicidae). 1. Mosquito Systematics Vol.13.1981

Steffan WA, Kodani AH, Evenhuis NL. Male and Female Genitalia of *Toxorhynchites amboinensis* (Diptera: Culicidae). 14. Mosquito Systematics Vol.13.1981

Tenorio JA. Bironella (Brugella) obscura, a **new** species of **mosquito** from **New Guinea** (Diptera: **Culicidae**). *Journal of Medical Entomology. 11(6):734-8, 1975 Jan 10.*

Tenorio, JA. 1977. Revision of the genus *Bironella* (Diptera: Culicidae). *J. Med. Entomol* 14: 317-61.

Van Dijk WJ. The role of **Culex** fatigans in the transmission of **Wuchereria bancrofti** in **New Guinea**. *Tropical & Geographical Medicine. 17(4):317-24, 1965 Dec.*

<Solomon>

Vector studies

Beebe NW, Bakote'e B, Ellis JT, Cooper RD. Differential ecology of Anopheles punctulatus and three members of the Anopheles farauti complex of mosquitoes on Guadalcanal, Solomon Islands, identified by PCR-RFLP analysis. Med Vet Entomol. 2000 Sep;14(3):308-12.

Bell D, Bryan J, Cameron A, Foley D, Pholsyna K. Salinity tolerance of Anopheles farauti Laveran sensu stricto. P N G Med J. 1999 Mar-Jun;42(1-2):5-9.

Elliott SA. Aedes albopictus in the Solomon and Santa Cruz Islands, South Pacific. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 74(6):747-8, 1980.*

Foley DH, Meek SR, Bryan JH. The Anopheles punctulatus group of mosquitoes in the Solomon Islands and Vanuatu surveyed by allozyme electrophoresis. Med Vet Entomol. 1994 Oct;8(4):340-50.

Genga R, Maffi M. Coelomomyces sp. infection in Aedes (Stegomyia) herbrideus Edwards on Nupani Island, Santa Cruz Group, Solomons. J Med Entomol. 1973 Jul 31;10(4):413-4.

Hii JL, Birley MH, Kanai L, Foligeli A, Wagner J. Comparative effects of permethrin-impregnated bednets and DDT house spraying on survival rates and oviposition interval of Anopheles farauti No. 1 (Diptera:Culicidae) in Solomon Islands. Ann Trop Med Parasitol. 1995 Oct;89(5):521-9.

Maffi M, Taylor B. The mosquitoes of the Santa Cruz faunal subarea of the Southwest Pacific (Diptera: Culicidae). J Med Entomol. 1974 Jun 15;11(2):197-210. PMID: 4153131

Okazawa T, Bakote'e B, Suzuki H, Kawada H, Kere N. Field evaluation of an insect growth regulator, pyriproxyfen, against Anopheles punctulatus on north Guadalcanal, Solomon Islands. J Am Mosq Control Assoc. 1991 Dec;7(4):604-7.

Samarawickrema WA, Parkinson AD, Kere N, Galo O. Seasonal abundance and biting behaviour of Anopheles punctulatus and An. koliensis in Malaita Province, Solomon Islands, and a trial of permethrin impregnated bednets against malaria transmission. Med Vet Entomol. 1992 Oct;6(4):371-8.

Taylor, B. 1972. A new species of *Aedes* from San Cristobal, British Solomon Islands Protectorate. *J. Med. Entomol.* 9: 317-18.

Taylor, B. & J.A. Tenorio 1974. *Aedes (Finlaya) maffii*, a new species of mosquito from the British Solomon Islands (Diptera: Culicidae). *J. Med. Entomol.* 11: 577-81.

Taylor, B. & M. Maffi 1991. *Anopheles (Cellia) rennellensis*, a new species within the punctulatus complex of Anopheles (Diptera, Culicidae) from Rennel Island. *Nat. Hist. Rennell Is. Br. Solomon Is.* 8: 193-98.

Webber RH. Vector control of filariasis in the Solomon Islands. Southeast Asian J Trop Med Public Health. 1975 Sep;6(3):430-4.

Webber RH. The natural decline of Wuchereria bancrofti infection in a vector control situation in the Solomon Islands. Trans R Soc Trop Med Hyg. 1977;71(5):396-400.

<Fiji>

a) Epidemiology and control

Desowitz RS. Southgate BA. Studies of **filaria**sis in the Pacific. 2. The persistence of microfilaraemia in diethylcarbamazine treated populations of **Fiji** and Western Samoa: diagnostic application of the membrane-filtration technique. *Southeast Asian Journal of Tropical Medicine & Public Health. 4(2):179-83, 1973 Jun.*

Grenfell BT. Das PK. Rajagopalan PK. Bundy DA. Frequency distribution of lymphatic **filaria**sis **microfilaria**e in human populations: population processes and statistical estimation. *Parasitology. 101 Pt 3:417-27, 1990 Dec.*

Mataika JU. Dando BC. Spears GF. Macnamara FN. **Mosquito**-borne infections in **Fiji**. I. **Filaria**sis in northern **Fiji**: epidemiological evidence regarding factors influencing the prevalence of microfilaraemia of **Wuchereria bancrofti** infections. *Journal of Hygiene. 69(2):273-86, 1971a*

Mataika JU. Dando BC. Spears GF. Macnamara FN. **Mosquito**-borne infections in **Fiji**. 3. **Filaria**sis in northern **Fiji**: epidemiological evidence regarding the mechanisms of pathogenesis. *Journal of Hygiene. 69(2):297-306, 1971b*

Mataika JU. Kimura E. Koroivueta J. Shimada M. Efficacy of five annual single doses of diethylcarbamazine for treatment of lymphatic **filaria**sis in **Fiji**. *Bulletin of the World Health Organization. 76(6):575-9, 1998.*

b) Vector studies

Gardner JM. Ram RC. Kumar S. Pillai JS. Field trials of Tolypocladium cylindrosporum against **larva**e of Aedes polynesiensis breeding in crab holes in **Fiji**. *Journal of the American **Mosquito** Control Association. 2(3):292-5, 1986 Sep.*

Goettel MS. Toohey MK. Pillai JS. The urban **mosquito**es of Suva, **Fiji**: seasonal incidence and evaluation of environmental sanitation and ULV spraying for their control. *Journal of Tropical Medicine & Hygiene. 83(4):165-71, 1980 Aug.*

Kay BH, Prakash G, Andre RG. Aedes albopictus and other Aedes (Stegomyia) species in Fiji. J Am Mosq Control Assoc. 1995 Jun;11(2 Pt 1):230-4.

Laille M. Fauran P. Rodhain F. [The presence of Aedes (Stegomyia) albopictus in the **Fiji** Islands]. [French] *Bulletin de la Societe de Pathologie Exotique. 83(3):394-8, 1990.*

Pillai JS, Rakai I. Coelomomyces macleayae Laird, a parasite of Aedes polynesiensis marks in Fiji. J Med Entomol. 1970 Jan;7(1):125-6.

Rakai IM. Naserua JD. Macnamara FN. Pillai JS. **Mosquito**-borne infections in **Fiji**. IV. Biting times for village **mosquitoes** and human **filaria** transmission potential of Aedes polynesiensis and Aedes pseudoscutellaris. *Journal of Medical Entomology. 11(5):588-94, 1974 Nov 25.*

Reinert, J. F. Description of the Egg of *Aedes (Levua) suvae* Stone and Bohart (Diptera: Culicidae). 128-130. Mosquito Systematics Vol.4.1972

Toohey MK. Prakash G. Goettel MS. Pillai JS. Elaphoidella taroi: the intermediate copepod host in **Fiji** for the **mosquito** pathogenic fungus Coelomomyces. *Journal of Invertebrate Pathology. 40(3):378-82, 1982 Nov.*

Toohey MK. Goettel MS. Takagi M. Ram RC. Prakash G. Pillai JS. Field studies on the introduction of the **mosquito** predator Toxorhynchites amboinensis (Diptera: **Culicidae**) into **Fiji**. *Journal of Medical Entomology. 22(1):102-10, 1985*

<Vanuatsu>

b) Vector control

Bouree P, Sauvagnac B, Montaville B. [Lymphatic filariasis in Vanuatu]. Bull Soc Pathol Exot Filiales. 1987;80(4):634-45. French.

Bryan JH. Anopheles farauti Laveran from the New Hebrides. Trans R Soc Trop Med Hyg. 1981;75(2):331.

Maffi, M. & J.A. Tenorio 1977. *Culex (Culex) banksensis*, a new species of mosquito (Diptera: Culicidae) from the Banks Islands, New Hebrides. *Pac. Insects* 17: 503-09.

Rodhain F, Fauran P. [Natural infection of Aedes (S.) hebrideus by a Coelomomyces in New Hybrids (author's transl)]. Ann Parasitol Hum Comp. 1975 Sep-Oct;50(5):643-6. French.

<New Caledonia>

a) Epidemiology and control

Hawking F. Denham DA. The distribution of human **filariasis** throughout the world. Part I. the Pacific Region, including **New** Guinea. *Tropical Diseases Bulletin. 73(5):347-73, 1976 May.*

Lagraulet J. Outin-Fabre D. Tomasini J. [Study on the possibilities of spreading of lymphatic **filariasis** in **New-Caledonia**]. [French] *Bulletin de la Societe de Pathologie Exotique et de Ses Filiales. 64(1):95-100, 1971 Jan-Feb.*

Le Godinec G. Fauran P. [Survey on **filariasis** in **New Caledonia**]. [French] *Bulletin de la Societe de Pathologie Exotique et de Ses Filiales. 77(3):344-51, 1984 May-Jun.*

Monchy D, Levenes H, Guegan H, Poey C, Dubourdieu D. [Pulmonary dirofilariasis]. Med Trop (Mars). 1993;53(3):366-71. Review. French.

Monchy D. Noellat P. Nomoredjo A. Videault A. Dubourdieu D. Nodular breast **filariasis**: diagnosis by fine needle aspiration. *Pathology International. 46(3):228-30, 1996 Mar.*

Monchy D. Barny S. Rougier Y. Baudet JM. Gentile B. [Survey of lymphatic **filariasis** on Ouvea Island in **New Caledonia**]. [see comments]. [French] *Medecine Tropicale. 59(2):146-50, 1999.*

Raccurt CP. [The persistence of **Wuchereria bancrofti** in Ouvea Island (**New Caledonia**)]. [letter; comment]. [French] *Medecine Tropicale. 59(3):311, 1999.*

b) Vector control

Fauran P. Rodhain F. [The presence and **vector** role of **Culex** bitaeniorhynchus in **New Caledonia**]. [French] *Bulletin de la Societe de Pathologie Exotique et de Ses Filiales. 79(1):100-7, 1986.*

Laird M. A Coral Island experiment. A new approach to mosquito control. WHO Chron. 1967 Jan;21(1):18-26.

<Samoa>

a) Epidemiology and control

Bryan JH, Southgate BA. Some observations on filariasis in Western Samoa after mass administration of diethylcarbamazine. Trans R Soc Trop Med Hyg. 1976;70(1):39-48.

Ciferri F. Siliga N. Long G. Kessel JF. A **filaria**sis-control program in **American Samoa**. *American Journal of Tropical Medicine & Hygiene. 18(3):369-78, 1969 May.*

Fauran P. Lacoste J. Combes D. Marcille P. Charpin M. [**Wuchereria bancrofti** human aperiodic **filaria**sis in French territory of **Wallis and Futuna** (author's transl)]. [French] *Medecine Tropicale. 41(6):665-9, 1981 Nov-Dec.*

Hariston NG. Jachowski LA. Analysis of the **Wuchereria bancrofti** population in the people of **American Samoa**. *Bulletin of the World Health Organization. 38(1):29-59, 1968.*

Kessel JF, Siliga N, Tompkins H Jr, Jones K. Periodic mass treatment with diethylcarbamazine for the control of filariasis in American Samoa. Bull World Health Organ. 1970;43(6):817-25.

Kimura E. Penaia L. Spears GF. Comparison of methods for the detection of **microfilaria**e of **Wuchereria bancrofti** in Western **Samoa**. *Southeast Asian Journal of Tropical Medicine & Public Health. 15(2):167-74, 1984 Jun.*

Kimura E. Penaia L. Spears GF. Epidemiology of subperiodic **bancroftia**n **filaria**sis in **Samoa** 8 years after control by mass treatment with diethylcarbamazine. *Bulletin of the World Health Organization. 63(5):869-80, 1985a.*

Kimura E. Penaia L. Samarawickrema WA. Spears GF. Low-density microfilaraemia in subperiodic **bancroftia**n **filaria**sis in **Samoa**. *Bulletin of the World Health Organization. 63(6):1089-96, 1985b.*

Kimura E. Penaia L. Spears GF. The efficacy of annual single-dose treatment with diethylcarbamazine citrate against diurnally subperiodic **bancroftia**n **filaria**sis in **Samoa**. *Bulletin of the World Health Organization. 63(6):1097-106, 1985c.*

Kimura E, Spears GF, Singh KI, Samarawickrema WA, Penaia L, Sone PF, Pelenatu S, Faaiuaso ST, Self LS, Dazo BC. Long-term efficacy of single-dose mass treatment with diethylcarbamazine citrate against diurnally subperiodic Wuchereria bancrofti: eight years' experience in Samoa. Bull World Health Organ. 1992;70(6):769-76.

Mahoney LE Jr. Aiu P. **Filaria**sis in **Samoa**n immigrants to the United **States**. **American** Journal of Tropical Medicine & Hygiene. 19(4):629-31, 1970 Jul.

Mahoney LE. Kessel JF. Treatment failure in **filaria**sis mass treatment programmes. *Bulletin of the World Health Organization. 45(1):35-42, 1971.*

Reid EC. Kimura E. **Microfilaria** prevalence of diurnally subperiodic **Wuchereria bancrofti** among people having a medical checkup in **American Samoa** in the past 17 years. Journal of Tropical Medicine & Hygiene. 96(2):118-23,1993 Apr

b) Vector studies

Pillai JS. Urdang J. The discovery of the **mosquito** Aedes aegypti on **Tokelau** group. *New Zealand Medical Journal. 90(643):212-3, 1979 Sep 12.*

Ramalingam, Shivaji & J. N. Belkin. The Immature Stages of *Aedes F. Sammoans* and the Status of *Toxorhynchites* in America Samoa. 194. Mosquito Systematics Vol.7.1975

Samarawickrema WA, Spears GF, Sone F, Ichimori K, Cummings RF. Filariasis transmission in Samoa. I. Relation between density of microfilariae and larval density in laboratory-bred and wild-caught Aedes (Stegomyia) polynesiensis (Marks) and wild-caught Aedes (Finlaya) samoanus (Gruenberg). Ann Trop Med Parasitol. 1985a Feb;79(1):89-100.

Samarawickrema WA, Spears GF, Sone F, Ichimori K, Cummings RF. Filariasis transmission in Samoa. II. Some factors related to the development of microfilariae in the intermediate host. Ann Trop Med Parasitol. 1985b Feb;79(1):101-7.

Samarawickrema WA, Sone F, Cummings RF. Natural infections of Wuchereria bancrofti in Aedes (Stegomyia) polynesiensis and Aedes (Finlaya) samoanus in Samoa.
Trans R Soc Trop Med Hyg. 1987a;81(1):124-8.

Samarawickrema WA, Kimura E, Spears GF, Penaia L, Sone F, Paulson GS, Cummings RF. Distribution of vectors, transmission indices and microfilaria rates of subperiodic Wuchereria bancrofti in relation to village ecotypes in Samoa. Trans R Soc Trop Med Hyg. 1987b;81(1):129-35.

Samarawickrema WA, Kimura E, Sones F, Paulson GS, Cummings RF. Natural infections of Dirofilaria immitis in Aedes (Stegomyia) polynesiensis and Aedes (Finlaya) samoanus and their implication in human health in Samoa. Trans R Soc Trop Med Hyg. 1992a Mar-Apr;86(2):187-8.

Samarawickrema WA, Sone F, Paulson GS, Kimura E, Uchida K, Cummings RF. Observations on Culex quinquefasciatus Say in relation to transmission of filariasis due to subperiodic Wuchereria bancrofti in Samoa. Ann Trop Med Parasitol. 1992b Oct;86(5):517-22.

Samarawickrema WA, Sone F, Self LS, Cummings RF, Paulson GS. Distribution of breeding and control of the filariasis vector Aedes samoanus in leaf axils of Pandanus in Samoa. Med Vet Entomol. 1992c Oct;6(4):367-70.

Samarawickrema WA, Sone F, Kimura E, Self LS, Cummings RF, Paulson GS. The relative importance and distribution of Aedes polynesiensis and Ae. aegypti larval habitats in Samoa. Med Vet Entomol. 1993 Jan;7(1):27-36.

Stone, A. 1966. A new species of Coquillettidia from Samoa (Diptera: Culicidae). Proc. Entomol. Soc. Wash. 68: 331-33.

Wright, JD. Collection Records from Tutuila, American Samoa. 209. Mosquito Systematics Vol.11.1979

<Tonga>

a) Epidemiology and control

Desowitz RS. Hitchcock JC. Hyperendemic **bancroftian filariasis** in the Kingdom of **Tonga**: the application of the membrane filter concentration technique to an age-stratified blood survey. *American Journal of Tropical Medicine & Hygiene. 23(5):877-9, 1974 Sep.*

Ramalingam S. The epidemiology of **filarial** transmission in Sanoa and **Tonga**. *Annals of Tropical Medicine & Parasitology. 62(3):305-24, 1968 Sep.*

Taylor R. Nemaia H. Connell J. Mortality in **Niue**, 1978-82. *New Zealand Medical Journal. 100(829):477-81, 1987 Aug 12.*

b) Vector studies

Hitchcock JC. Transmission of sub-periodic **filariasis** in **Tonga** by Aedes oceanicus Belkin. *Transactions of the Royal Society of Tropical Medicine & Hygiene. 65(3):408-9, 1971.*

Huang, Y.-M. & J.C. Hitchcock 1980. Medical entomology studies - XII. A revision of the Aedes scutellaris group of Tonga (Diptera: Culicidae). Contrib. Am. Entomol. Inst. 17(3),107p

Ramalingam, S. & J.N. Belkin 1965. Mosquito studies (Diptera: Culicidae). III. Two new *Aedes* from Tonga and Samoa. *Contrib. Am. Entomol. Inst.* 1(4), 10 p.

Trpis M. Susceptibility of the autogenous group of the Aedes scutellaris complex of **mosquitoes** to infection with Brugia malayi and Brugia pahangi. *Tropenmedizin und Parasitologie. 32(3):184-8, 1981 Sep.*

<Guam>

a) Epidemiology and control

Nowell WR. International quarantine for control of **mosquito**-borne **diseases** on **Guam.** *Aviation Space & Environmental Medicine. 48(1):53-60, 1977 Jan.*

b) Vector control

Basio, R.G. & W.K. Reisen 1971. On some mosquitoes of Guam, Marianas Islands (Diptera: Culicidae). *Philipp. Entomol.* 2: 57-61.

Darsie, R. F. and A. Cagampang-Ramos. Additional species of *Anopheles* on Guam 28. Mosquito Systematics Vol.3 1971

Nowell, Wesley R. An Annotated Bibliography of the Mosquitoes and Mosquito-Borne Diseases of Guam (Diptera: Culicidae). 355. Mosquito Systematics Vol.7.1975

Nowell WR. Sutton DR. The **mosquito** fauna of Rota Island, **Mariana Islands** (Diptera: **Culicidae**). *Journal of Medical Entomology. 14(4):411-6, 1977 Dec 24.*

Nowell, Wesley R. Literature Pertaining to the Mosquitoes and the Mosquito- Borne Diseases of Guam (Conclusion). 211. Mosquito Systematics Vol.10.1978

Nowell WR, Ward RA. Literature Pertaining to the Mosquito Fauna and the Mosquito-borne Diseases on Guam. Addendum. 25. Mosquito Systematics Vol.21.1989

Rai KS. Genetics of Aedes albopictus. [Review] Journal of the American Mosquito Control Association. 1986;2(4):42-36

Reisen WK. Burns JP. Basio RG. A **mosquito** survey of **Guam,** Marianas islands with notes on the **vector** borne **disease** potential. *Journal of Medical Entomology.* 9(4):319-24,1972 Aug 1

Rozeboom LE, Bridges JR. Relative population densities of Aedes albopictus and A. guamensis on Guam. Bull World Health Organ. 1972;46(4):477-83.

Savage HM., Mitchell CJ, Roppul M, Castro LT, Kepple RL, Flood SP. Mosquito Faunal Survey of Saipan, Mariana Islands (Diptera: Culicidae): Taxonomy and Larval Ecology. 17. Mosquito Systematics Vol.25.1993

<French Polynesia>

a) Epidemiology and control

Carme B. Filarial elephantiasis in French Polynesia: a study concerning the beliefs of 127 patients about the origin of their disease. Trans R Soc Trop Med Hyg. 1979;73(4):424-6.

Lagraulet J, Pichon G, Outin-Fabre D, Stanghellini A, Moreau JP. [Epidemiologic survey of lymphatic filariasis in the Marquesas]. Bull Soc Pathol Exot Filiales. 1972 May-Jun;65(3):447-55. French.

Lagraulet J. [Prophylaxis and treatment of lymphatic filariasis in French Polynesia]. Bull Soc Pathol Exot Filiales. 1973 Mar-Apr;66(2):311-20. French.

Lagraulet J, Barsinas M, Fagneaux G, Teahui M. [Current status of filariasis in the Marquises and different epidemiological aspects]. Bull Soc Pathol Exot Filiales. 1973 Jan-Feb;66(1):139-55. French.

Laurence BR. Elephantiasis and Polynesian origins. Nature. 1968 Aug 10;219(154):561-3.

Laurence BR. Elephantiasis in early Polynesia. J Hist Med Allied Sci. 1991 Jul;46(3):277-90.

Perolat P, Guidi C, Riviere F, Roux J. [Bancroftian filariasis in French Polynesia. Epidemiologic status and perspectives after a 35-year preventive campaign]. Bull Soc Pathol Exot Filiales. 1986;79(1):78-88.

b) Vector studies

Ali SR, Rozeboom LE. Cross-insemination frequencies between strains of Aedes albopictus and members of the Aedes scutellaris group. J Med Entomol. 1971 Sep 30;8(3):263-5.

Cartel JL, Sechan Y, Boutin JP, Celerier P, Plichart R, Roux JF. Ivermectin for treatment of bancroftian filariasis in French Polynesia: efficacy in man, effect on transmission by vector Aedes polynesiensis. Trop Med Parasitol. 1990 Sep;41(3):241-4.

Cartel JL, Nguyen NL, Spiegel A, Moulia-Pelat JP, Plichart R, Martin PM, Manuellan AB, Lardeux F. Wuchereria bancrofti infection in human and mosquito populations of a Polynesian village ten years after interruption of mass chemoprophylaxis with diethylcarbamazine. Trans R Soc Trop Med Hyg. 1992 Jul-Aug;86(4):414-6.

Failloux AB, Ung A, Raymond M, Pasteur N. Insecticide susceptibility in mosquitoes (Diptera: Culicidae) from French Polynesia. J Med Entomol. 1994 Sep;31(5):639-44.

Failloux AB, Raymond M, Ung A, Glaziou P, Martin PM, Pasteur N. Variation in the vector competence of Aedes polynesiensis for Wuchereria bancrofti. Parasitology. 1995 Jul;111 (Pt 1):19-29.

Failloux, A.B., Raymond, M., Ung, A., Chevillon, C., and Pasteur, N. 1997, Genetic differentiation associated with commercial traffic in the Polynesian mosquito, Aedes polynesiensis Marks 1951. Biol J Linn Soc 60:107-118.

Hitchcock JC, Rozeboom LE. Cross-breeding of Aedes (S.) polynesiensis Marks with an autogenous species of the A. scutellaris group. Bull World Health Organ. 1973;49(4):367-70.

Huang, Yiau-Min. A Redescription of *Aedes (Stegomyia) pseudoscutellaris* (Theobald) with a Note on the Taxonomic Status of *Aedes (Stegomyia) polynesiensis* Marks (Diptera: Culicidae). 87. Mosquito Systematics Vol.7.1975

Huang, Yiau-Min. The Mosquitoes of Polynesia with a Pictorial Key to some Species Associated with Filariasis and/or Dengue Fever. 289. Mosquito Systematics Vol.9.1977

Huang, Yiau-Min. The Identity of Two Species of *Stegomyia* Belonging to the *Aedes albolineatus* Group(Diptera: Culicidae). 197. Mosquito Systematics Vol.10.1978

Klein, J.-M., F. Rivière & Y. Séchan 1983. Recherches d'entomologie médicale aux Iles Marquises en 1982. *Notes Doc. Hyg. Sant. Publique* (Entomol. Méd.), ORSTOM., Papeete 7, 81 p.

Klein, J.-M., F. Rivière & Y. Séchan 1984. Une nouvelle espèce de moustique (Diptera : Culicidae) des Iles Marquises (Polynésie française): *Culex* (*Culex*) *toviiensis* n. sp. Description de la larve et de la nymphe. *Cah. O.R.S.T.O.M.* (Entomol. Méd. Parasitol.) 21: 71-76.

Lardeux FJ. Biological control of Culicidae with the copepod Mesocyclops aspericornis and larvivorous fish (Poeciliidae) in a village of French Polynesia. Med Vet Entomol. 1992 Jan;6(1):9-15.

Lardeux F, Riviere F, Sechan Y, Kay BH. Release of Mesocyclops aspericornis (Copepoda) for control of larval Aedes polynesiensis (Diptera: Culicidae) in land crab burrows on an atoll of French Polynesia. J Med Entomol. 1992 Jul;29(4):571-6.

Lardeux F, Cheffort J. Ambient temperature effects on the extrinsic incubation period of Wuchereria bancrofti in Aedes polynesiensis: implications for filariasis transmission dynamics and distribution in French Polynesia. Med Vet Entomol. 2001 Jun;15(2):167-76.

Linley JR, Serrice MW. The egg of *Aedes polynesiensis* and *Aedes Katherinensis* (Diptera: Culicidae) Mosquito Systematics Vol. 27. 1995

Marks, E.N. 1951. The vector of filariasis in Polynesia: a change in nomenclature. Ann. Trop. Med. Parasitol. 45: 137-40.

Mercer DR. Effects of larval density on the size of Aedes polynesiensis adults (Diptera: Culicidae). J Med Entomol. 1999 Nov;36(6):702-8.

Mercer DR, Nicolas L, Thiery I. Evaluation of entomopathogenic bacteria against Aedes polynesiensis, the vector of lymphatic filariasis in French Polynesia. J Am Mosq Control Assoc. 1995 Dec;11(4):485-8.

Mouchet J, Laigret J. [Resistance to insectcides in Aedes aegypti in Tahiti]. Med Trop (Mars). 1967 Nov-Dec;27(6):685-92. French.

Paupy C, Vazeille-Falcoz M, Mousson L, Rodhain F, Failloux AB. Aedes aegypti in Tahiti and Moorea (French Polynesia): isoenzyme differentiation in the mosquito population according to human population density. Am J Trop Med Hyg. 2000 Feb;62(2):217-24.

Rosen L, Rozeboom LE, Reeves WC, Saugrain J, Gubler DJ. A field trial of competitive displacement of Aedes polynesiensis by Aedes albopictus on a Pacific atoll. Am J Trop Med Hyg. 1976 Nov;25(6):906-13.

Shiu S., Mercer D.R., Martin P.M.V., Rodhain F., Raymond M. and Failloux A.-B. 1997. Aedes polynesiensis in the Society Islands: environmental correlates of isoenzyme differentiation. Medical and Veterinary Entomology 11: 349-354.

Silberstein AJ, pichon G, Riviere F, Faaruia M. [Geographic variations of esterase isoenzymes in Aedes polynesiensis Marks]. Ann Soc Belg Med Trop. 1978 Dec;58(4):321-31. French.

Tesfa-Yohannes TM. Genetic relationships of three strains of Aedes (S.) polynesiensis Marks. J Med Entomol. 1973 Oct 8;10(5):490-2.

<Cook islands>

Epidemiology and control

Steel C. Guinea A. Ottesen EA. Evidence for protective immunity to **bancroftian filariasis** in the **Cook Islands**. *Journal of Infectious Diseases. 174(3):598-605, 1996 Sep.*

Lunde MN. Paranjape R. Lawley TJ. Ottesen EA. **Filarial** antigen in circulating immune complexes from patients with **Wuchereria bancrofti filariasis**. *American Journal of Tropical Medicine & Hygiene. 38(2):366-71, 1988 Mar.*

Zhong M. McCarthy J. Bierwert L. Lizotte-Waniewski M. Chanteau S. Nutman TB. Ottesen EA. Williams SA. A polymerase chain reaction assay for detection of the parasite **Wuchereria bancrofti** in human blood samples. *American Journal of Tropical Medicine & Hygiene. 54(4):357-63, 1996 Apr.*

<South Pacific>

a) Epidemiology and control

Cumpston, J.H.L. 1924. Disease distribution in the Pacific Basin. *Proc. 2nd Pan-Pac. Sci. Congr.* 2: 1400-07.

Hales S. Weinstein P. Souares Y. Woodward A. El Nino and the dynamics of **vector** borne **disease** transmission. Environmental Health Perspectives. 107(2):99-102, 1999 Feb.

b) Vector control

Belkin, J.N. 1962. The mosquitoes of the South Pacific (Diptera, Culicidae). Vol. 1. Univ. Calif. Press, Berkeley & Los Angeles. xii + 608 p.

Belkin, J.N. 1968. Mosquitoes studies (Diptera, Culicidae) VII. The Culicidae of New Zealand. Contrib. Am. Entomol. Inst. 3(1): 1-182.

Bryan JH, Foley DH, Reardon T, Spark R. How many species are in the Anopheles punctulatus group? Ann Trop Med Parasitol. 1990 Jun;84(3):295-7.

Dev Vas. Speciation in the *Aedes (Stegomyia) scutellaris* group (Diptera: Culicidae): Contributing factors. 119. Mosquito Systematics Vol.19.1987

Evenhuis, N. L. (ed.) 1989. Catalog of the Diptera of the Australasian and Oceanian Regions. Bishop Museum, Honolulu and E. J. Brill, Netherlands. 1,155 pp.

Fauran P, Taylor R. [Monitoring of mosquito vectors at international airports of the South Pacific region]. Bull Soc Pathol Exot Filiales. 1988;81(1):125-35. French.

Hawking F. Denham DA. The distribution of human **filariasis** throughout the world. Part I. the Pacific Region, including **New Guinea**. *Tropical Diseases Bulletin. 73(5):347-73, 1976 May.*

Hirshman JH. Communicable **disease** in the South **Pacific islands**,2. Medical Journal of Australia. 2(21):794-8, 1976

Lee, D.J., M.M. Hicks, M. Griffiths, R.C. Russell & E.N. Marks 1980. *The Culicidae of the Australasian Region.* Volume I. Commonwealth Institute of Health. School of Public Health and Tropical Medicine and University of Sydney. Monograph Series. Entomology Monograph No. 2. Australian Government Publishing Service, Canberra. lxix + 248 p.

Lee, D.J., M.M. Hicks, M. Griffiths, R.C. Russell & E.N. Marks 1982. *The Culicidae of the Australasian Region.* Volume II. Nomenclature, synonymy, literature, distribution, biology and relation to disease. Genus Aedeomyia. Genus Aedes. (Subgenera [Aedes], Aedimorphus, Chaetocruiomyia, Christophersiomyia, Edwardsaedes and Finlaya). Commonwealth Institute of Health. School of Public Health and Tropical Medicine. Monograph Series. Entomology Monograph No. 2. Australian Government Publishing Service, Canberra. v + 286 p

Lee, D.J., M.M. Hicks, M. Griffiths, R.C. Russell & E.N. Marks 1984. *The Culicidae of the Australasian Region.* Volume 3. Nomenclature, synonymy, literature, distribution, biology and relation to disease. Genus Aedes. Subgenera Geoskusea, Halaedes, Huaedes, Leptosomatomyia, Levua, Lorrainea, Macleaya, Mucidus, Neomelaniconion, Nothoskusea, Ochlerotatus, Paraedes, Pseudoskusea, Rhinoskusea. Commonwealth Institute of Health. School of Public Health and Tropical Medicine. Monograph Series. Entomology Monograph No. 2. Australian Government Publishing Service, Canberra. v + 257 p.

Lee, D.J., M.M. Hicks, M. Griffiths, M.L. Debenham, J.H. Bryan, R.C. Russell, M. Geary & E.N. Marks 1987a. *The Culicidae of the Australasian Region.* Volume 4. Nomenclature, synonymy, literature, distribution, biology and relation to disease. Genus Aedes. Subgenera Scutomyia, Stegomyia, Verrallina. Commonwealth Department of Health, School of Public Health and Tropical Medicine. Monograph Series. Entomology Monograph No. 2. Australian Government Publishing Service, Canberra. xiii + 324 p.

Lee, D.J., M.M. Hicks, M. Griffiths, M.L. Debenham, J.H. Bryan, R.C. Russell, M. Geary & E.N. Marks 1987b. *The Culicidae of the Australasian Region.* Volume 5. Nomenclature, synonymy, literature, distribution, biology and relation to disease. Genus Anopheles. Subgenera Anopheles, Cellia. Commonwealth Department of Health, School of Public Health and Tropical Medicine. Monograph Series. Entomology Monograph No. 2. Australian Government Publishing Service, Canberra. ix + 315 p.

Pashley DN, Pashley DP. Observations on *Aedes (Stegomyia)* Mosquitoes in Micronesia and Melanesia. 41. Mosquito Systematics Vol.15.1983

<World and general>

a) Epidemiology and control

Park CB. **Microfilaria** density distribution in the human population and its infectivity index for the **mosquito** population. *Parasitology. 96 (Pt 2):265-71, 1988 Apr.*

Rodhain F. [Problems posed by the spread of Aedes albopictus]. [Review] Bulletin de la Societe de Pathologie Exotique. 89(2):137-40; discussion 140-1, 1996.

b) Vector studies

Carme B, Laigret J. Longevity of Wuchereria bancrofti var. pacifica and mosquito infection acquired from a patient with low level parasitemia. Am J Trop Med Hyg. 1979 Jan;28(1):53-5.

Gaffigan TV, Ward RA. Index to the Second Supplement to "A Catalog of the Mosquitoes of the World," with Corrections and Additions (Diptera: Culicidae). 52. Mosquito Systematics Vol.17.1985

Knight KL, Stone A 1977. A Catalog of the Mosquitoes of the world (Diptera, Culicidae), Thomas Say Fondation, VI,611p

Knight KL 1978. *Supplement to "A Catalog of the Mosquitoes of the World" (Diptera: Culicidae).* The Thomas Say Foundation, VI (Suppl.), 107 pp.

Knudsen AB. Global distribution and continuing spread of Aedes albopictus. [Review] Parassitologia. 37(2-3):91-7, 1995

Manning, D.L., N.L. Evenhuis & W.A. Steffan 1982. Annotated bibliography of Toxorhynchites (Diptera: Culicidae): supplement I. J. Med. Entomol. 19: 429-86.

Munstermann, L.E. and J.E. Conn. 1997. Systematics of mosquito disease vectors (Dipteras Culicidae): Impact of molecular biology and cladistic analysis. Ann. Rev. Ent. 42:35551-369.

Nutman, T. B. (Ed.). 2000. *Lymphatic filariasis.* Imperial College Press, London Control of lymphatic filariasis; a manual for health personnel. Geneva: World Health Organization (WHO), 1987: 89 pages

Rozendaal JA. Curtis CF. Recent research on impregnated **mosquito** nets. [Review] Journal of the American **Mosquito** Control Association. 5(4):500-7, 1989 Dec.

Ward, R.A. 1984. Second supplement to "A catalog of the mosquitoes of the world" (Diptera: Culicidae). *Mosq. Syst.* 16: 227-70.

Ward RA. Third Supplement to "A Catalog of the Mosquitoes of the World" (Diptera: Culicidae). 177. Mosquito Systematics Vol.24.1992

Appendix 2.

List of paper on detection of Wuchereria bancrofti gene from human and/or mosquito samples from 1992-2001 (Database:Pub-Med., Jan. 2002)

<2001>

1. Torres EP, Ramirez BL, Salazar F, Pasay MC, Alamares JG, Santiago ML, Hafalla JC. Detection of bancroftian filariasis in human blood samples from Sorsogon province, the Philippines by polymerase chain reaction. Parasitol Res. 2001 Aug;87(8):677-9.

2. Dassanayake RS, Chandrasekharan NV, Karunanayake EH. Trans-spliced leader RNA, 5S-rRNA genes and novel variant orphan spliced-leader of the lymphatic filarial nematode Wuchereria bancrofti, and a sensitive polymerase chain reaction based detection assay. Gene. 2001 May 16;269(1-2):185-93.

3. Farid HA, Hammad RE, Hassan MM, Morsy ZS, Kamal IH, Weil GJ, Ramzy RM. Detection of Wuchereria bancrofti in mosquitoes by the polymerase chain reaction: a potentially useful tool for large-scale control programmes. Trans R Soc Trop Med Hyg. 2001 Jan-Feb;95(1):29-32.

4. Chansiri K, Kwoasak P, Tananyutthawongese C, Sukhumsirichart W, Sarataphan N, Phantana S. Detection of Plasmodium falciparum and Wuchereria bancrofti infected blood samples using multiplex PCR. Mol Cell Probes. 2001 Aug;15(4):201-7.

5. Esterre P, Plichart C, Sechan Y, Nguyen NL. The impact of 34 years of massive DEC chemotherapy on Wuchereria bancrofti infection and transmission: the Maupiti cohort.
Trop Med Int Health. 2001 Mar;6(3):190-5.

<2000>

6. Bockarie MJ, Fischer P, Williams SA, Zimmerman PA, Griffin L, Alpers MP, Kazura JW. Application of a polymerase chain reaction-ELISA to detect Wuchereria bancrofti in pools of wild-caught Anopheles punctulatus in a filariasis control area in Papua New Guinea.
Am J Trop Med Hyg. 2000 Mar;62(3):363-7.

7. Dissanayake S, Rocha A, Noroes J, Medeiros Z, Dreyer G, Piessens WF. Evaluation of PCR-based methods for the diagnosis of infection in bancroftian filariasis. Trans R Soc Trop Med Hyg. 2000 Sep-Oct;94(5):526-30.

8. Triteeraprapab S, Kanjanopas K, Suwannadabba S, Sangprakarn S, Poovorawan Y, Scott AL. Transmission of the nocturnal periodic strain of Wuchereria bancrofti by Culex quinquefasciatus: establishing the potential for urban filariasis in Thailand. Epidemiol Infect. 2000 Aug;125(1):207-12.

9. Thanomsub BW, Chansiri K, Sarataphan N, Phantana S. Differential diagnosis of human lymphatic filariasis using PCR-RFLP. Mol Cell Probes. 2000 Feb;14(1):41-6.

<1999>

10. Abbasi I, Githure J, Ochola JJ, Agure R, Koech DK, Ramzy RM, Williams SA, Hamburger J. Diagnosis of Wuchereria bancrofti infection by the polymerase chain reaction employing patients' sputum. Parasitol Res. 1999 Oct;85(10):844-9.

11. Fischer P, Liu X, Lizotte-Waniewski M, Kamal IH, Ramzy RM, Williams SA. Development of a quantitative, competitive polymerase chain reaction--enzyme-linked immunosorbent assay for the detection of Wuchereria bancrofti DNA. Parasitol Res. 1999 Mar;85(3):176-83.

<1998>

12. Harnett W, Bradley JE, Garate T. Molecular and immunodiagnosis of human filarial nematode infections. Parasitology. 1998;117 Suppl:S59-71. Review.

13. Lucena WA, Dhalia R, Abath FG, Nicolas L, Regis LN, Furtado AF. Diagnosis of Wuchereria bancrofti infection by the polymerase chain reaction using urine and day blood samples from amicrofilaraemic patients. Trans R Soc Trop Med Hyg. 1998 May-Jun;92(3):290-3.

<1997>
14. Nicolas L, Plichart C. A universally applicable internal standard for PCR detection of Wuchereria bancrofti in biological samples. Parasite. 1997 Sep;4(3):253-7.

15. Ravichandran M, Mahanty S, Kumaraswami V, Nutman TB, Jayaraman K. Elevated IL-10 mRNA expression and downregulation of Th1-type cytokines in microfilaraemic individuals with Wuchereria bancrofti infection. Parasite Immunol. 1997 Feb;19(2):69-77.

16. Chandrashekar R. Recent advances in diagnosis of filarial infections. Indian J Exp Biol. 1997 Jan;35(1):18-26. Review.

17. Nicolas L, Scoles GA. Multiplex polymerase chain reaction for detection of Dirofilaria immitis (Filariidea: Onchocercidae) and Wuchereria bancrofti (Filarioidea: Dipetalonematidae) in their common vector Aedes polynesiensis (Diptera: Culicidae). J Med Entomol. 1997 Nov;34(6):741-4.

18. Furtado AF, Abath FG, Regis L, Gomes YM, Lucena WA, Furtado PB, Dhalia R, Miranda JC, Nicolas L. Improvement and application of a polymerase chain reaction system for detection of Wuchereria bancrofti in Culex quinquefasciatus and human blood samples. Mem Inst Oswaldo Cruz. 1997 Jan-Feb;92(1):85-6.

19. Ramzy RM, Farid HA, Kamal IH, Ibrahim GH, Morsy ZS, Faris R, Weil GJ, Williams SA, Gad AM. A polymerase chain reaction-based assay for detection of Wuchereria bancrofti in human blood and Culex pipiens. Trans R Soc Trop Med Hyg. 1997 Mar-Apr;91(2):156-60.

<1996>
20. Abbasi I, Hamburger J, Githure J, Ochola JJ, Agure R, Koech DK, Ramzy R, Gad A, Williams SA. Detection of Wuchereria bancrofti DNA in patients' sputum by the polymerase chain reaction. Trans R Soc Trop Med Hyg. 1996 Sep-Oct;90(5):531-2. No abstract available. PMID: 8944264 [PubMed - indexed for MEDLINE]

21. Williams SA, Nicolas L, Lizotte-Waniewski M, Plichart C, Luquiaud P, Nguyen LN, Moulia-Pelat JP. A polymerase chain reaction assay for the detection of Wuchereria bancrofti in blood samples from French Polynesia. Trans R Soc Trop Med Hyg. 1996 Jul-Aug;90(4):384-7.

22. McCarthy JS, Zhong M, Gopinath R, Ottesen EA, Williams SA, Nutman TB. Evaluation of a polymerase chain reaction-based assay for diagnosis of Wuchereria bancrofti infection. J Infect Dis. 1996 Jun;173(6):1510-4.

23. Zhong M, McCarthy J, Bierwert L, Lizotte-Waniewski M, Chanteau S, Nutman TB, Ottesen EA, Williams SA. A polymerase chain reaction assay for detection of the parasite Wuchereria bancrofti in human blood samples. Am J Trop Med Hyg. 1996 Apr;54(4):357-63.

24. Nicolas L, Luquiaud P, Lardeux F, Mercer DR. A polymerase chain reaction assay to determine infection of Aedes polynesiensis by Wuchereria bancrofti. Trans R Soc Trop Med Hyg. 1996 Mar-Apr;90(2):136-9.

25. Siridewa K, Karunanayake EH, Chandrasekharan NV. Polymerase chain reaction-based technique for the detection of Wuchereria bancrofti in human blood samples, hydrocele fluid, and mosquito vectors. Am J Trop Med Hyg. 1996 Jan;54(1):72-6.

<1994>
26. Chanteau S, Luquiaud P, Failloux AB, Williams SA. Detection of Wuchereria bancrofti larvae in pools of mosquitoes by the polymerase chain reaction. Trans R Soc Trop Med Hyg. 1994 Nov-Dec;88(6):665-6.

<1993>
27. Paxton WA, Yazdanbakhsh M, Kurniawan A, Partono F, Maizels RM, Selkirk ME. Primary structure of and immunoglobulin E response to the repeat subunit of gp15/400 from human lymphatic filarial parasites. Infect Immun. 1993 Jul;61(7):2827-33.

28. Cross JH. Recent advances in epidemiological field techniques in filariasis. Southeast Asian J Trop Med Public Health. 1993;24 Suppl 2:40-4. Review.

<1992>
29. Raghavan N, Maina CV, Fitzgerald PC, Tuan RS, Slatko BE, Ottesen EA, Nutman TB. Characterization of a muscle-associated antigen from Wuchereria bancrofti.
Exp Parasitol. 1992 Dec;75(4):379-89.

<1991>
30. Raghavan N, McReynolds LA, Maina CV, Feinstone SM, Jayaraman K, Ottesen EA, Nutman TB. A recombinant clone of Wuchereria bancrofti with DNA specificity for human lymphatic filarial parasites. Mol Biochem Parasitol. 1991 Jul;47(1):63-71.

31. Dissanayake S, Min X, Piessens WF. Detection of amplified Wuchereria bancrofti DNA in mosquitoes with a nonradioactive probe. Mol Biochem Parasitol. 1991 Mar;45(1):49-56.