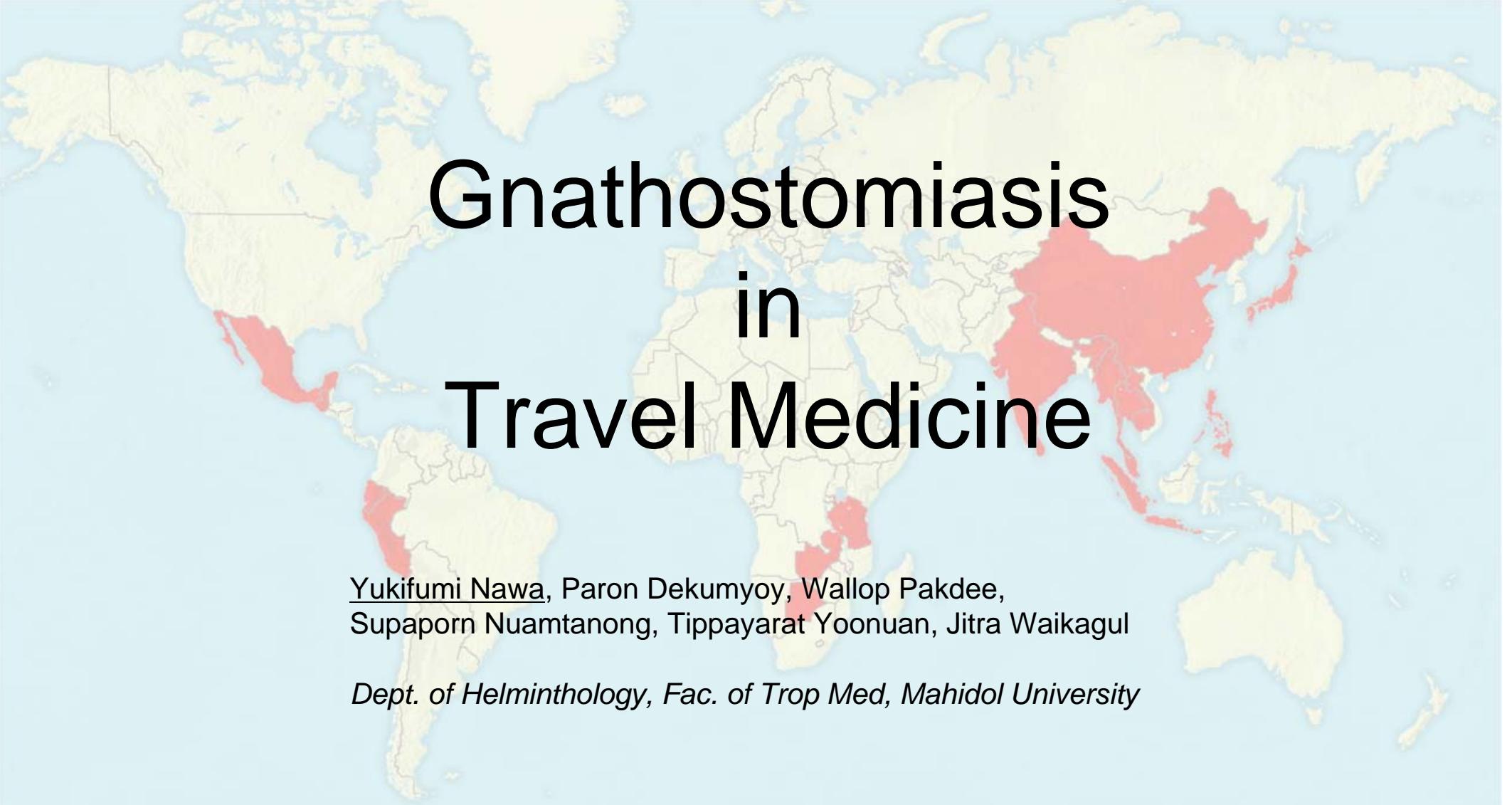


6th FBPZ Seminar

3rd International Congress on Gnathostomiasis



Gnathostomiasis in Travel Medicine

Yukifumi Nawa, Paron Dekumyoy, Wallop Pakdee,
Supaporn Nuamtanong, Tippayarat Yoonuan, Jitra Waikagul

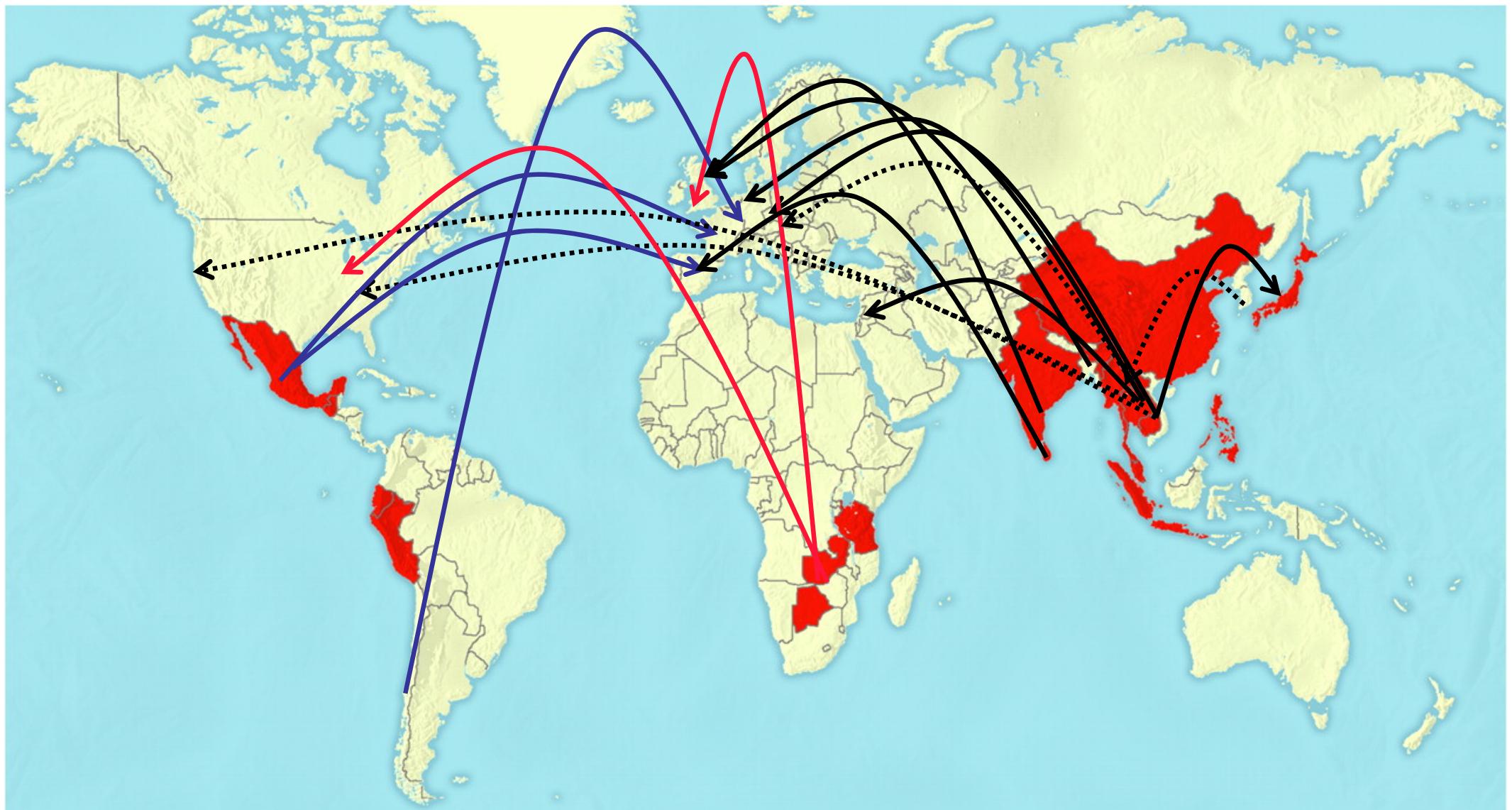
Dept. of Helminthology, Fac. of Trop Med, Mahidol University

Herman JS, Vhiodini PL.

Gnathostomiasis, another emerging imported disease.

Clin Microbiol Rev 2009, 484-492.

Gnathostoma: a flying parasite



Herman JS, Vhiodini PL. Gnathostomiasis, another emerging imported disease.

Clin Microbiol Rev 2009, 484-492.

2003, UK

Gnathostomiasis: An Emerging Imported Disease

David A.J. Moore,* Janice McCroddan,† Paron Dekumyoy,‡ and Peter L. Chiodini†

Presse Med 2004; 33: 1527-32

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Marina C. Clément-Rigolet,
Martin Danis, Eric Caumes

2004, France

MISE AU POINT

Parasitologie

**La gnathostomose, une maladie exotique
de plus en plus souvent importée
dans les pays occidentaux**



2005, US

SPECIAL ARTICLE

**Gnathostomiasis: A Review
of a Previously Localized Zoonosis
Now Crossing Numerous Geographical Boundaries**

B. Lee Ligon, PhD

 Seminars in
**PEDIATRIC
INFECTIOUS
DISEASES**

CLINICAL MICROBIOLOGY REVIEWS, July 2009, p. 484–492
0893-8512/09/\$08.00+0 doi:10.1128/CMR.00003-09
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Vol. 22, No. 3

2009, UK

Gnathostomiasis, Another Emerging Imported DiseaseJoanna S. Herman^{1*} and Peter L. Chiodini^{1,2}

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Gnathostomiasis cases in the Hopital for Tropical Diseases, London

Table. Background information on patients in whom *Gnathostoma* infection was identified, April 1, 2000, to March 31, 2001, Hospital for Tropical Diseases, London^a

Patient no.	Age	Referral source	Travel history	Eosinophil count ($\times 10^9/L$) ^b	Symptom duration
1 ^c	26	GP	China, South Korea, Canada, Hong Kong, Tunisia	0.10	9 mo
2	26	General physician	Bangladesh, Italy	2.20	6 mo
3 ^c	37	Rheumatologist	Bangladesh	4.37	3 y
4	28	HTD walk-in	Japan, Cuba	0.17	2 mo
5	35	GP	India, Sri Lanka	NA	3 y
6	34	HTD walk-in	South Africa, New Zealand, Jakarta, Singapore	0.80	3 mo
7	49	Dermatologist	India, Thailand	0.1	13 mo
8	51	GP	Sri Lanka, Brazil, Cambodia	0.08	2 y
9	26	Rheumatologist	India	1.33	3 y
10	27	GP	Bangladesh	1.10	5 y
11	23	GP	SE Asia, Australia	0.00	4 mo
12	25	self	Japan, SE Asia, USA, Canada	0.11	13 mo
13	24	HTD walk-in	SE Asia, India, China	0.96	3 wk
14 ^c	49	Gastroenterologist	Far East, Caribbean, USA	0.95	12 mo
15	57	GP	Vietnam, Thailand	0.26	6 mo
16 ^c	30	GP	Borneo, Belize, Ecuador, Peru, Australia	0.11	12 mo

^aGP, general practitioner; HTD walk-in, Hospital for Tropical Diseases emergency walk-in clinic; NA, not available.

^bNormal range 0–0.4 $\times 10^9/L$.

^cDenotes case history in text.

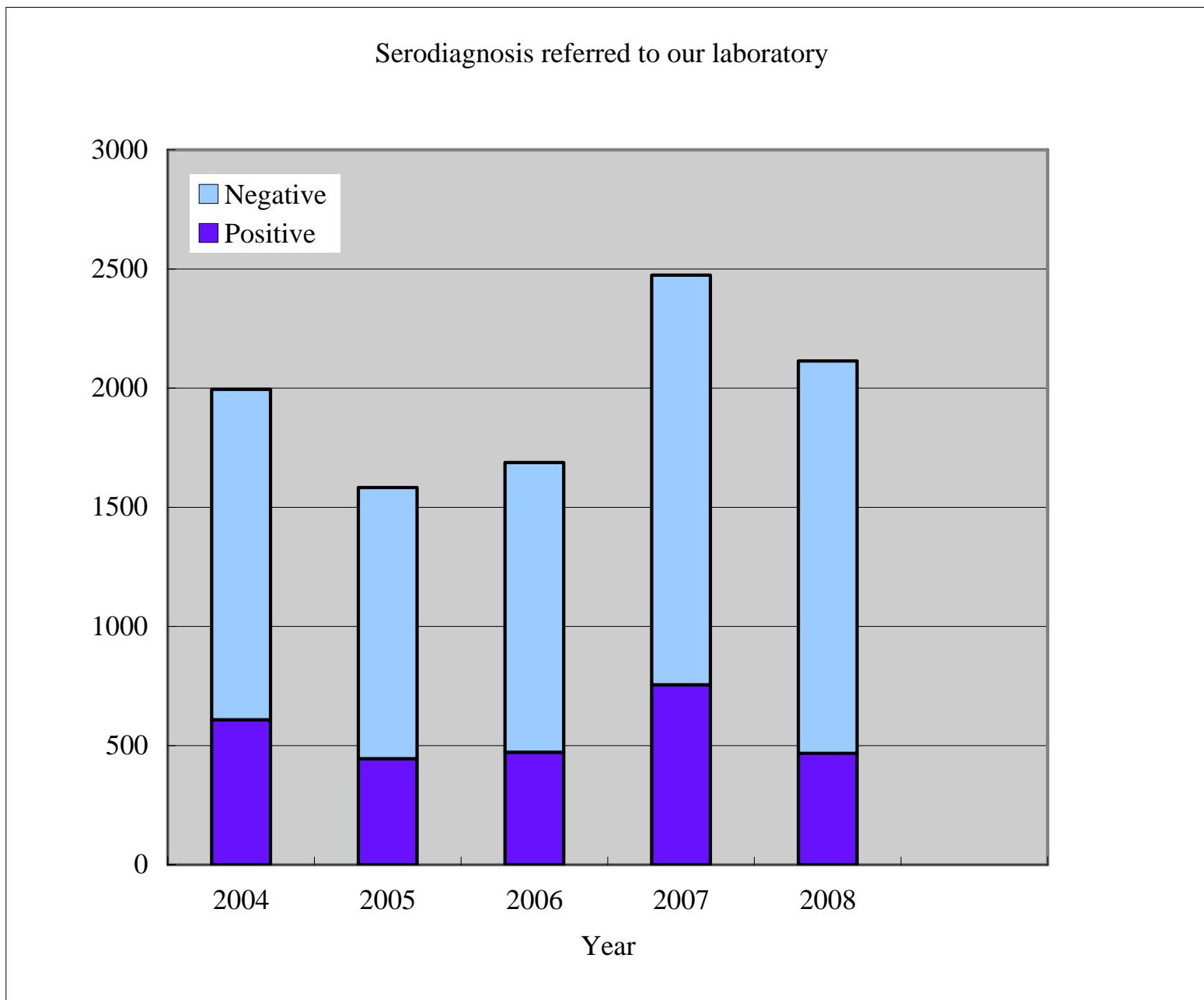
Tableau 1

Gnathostomoses importées dans les pays occidentaux par ordre chronologique de description depuis 1980

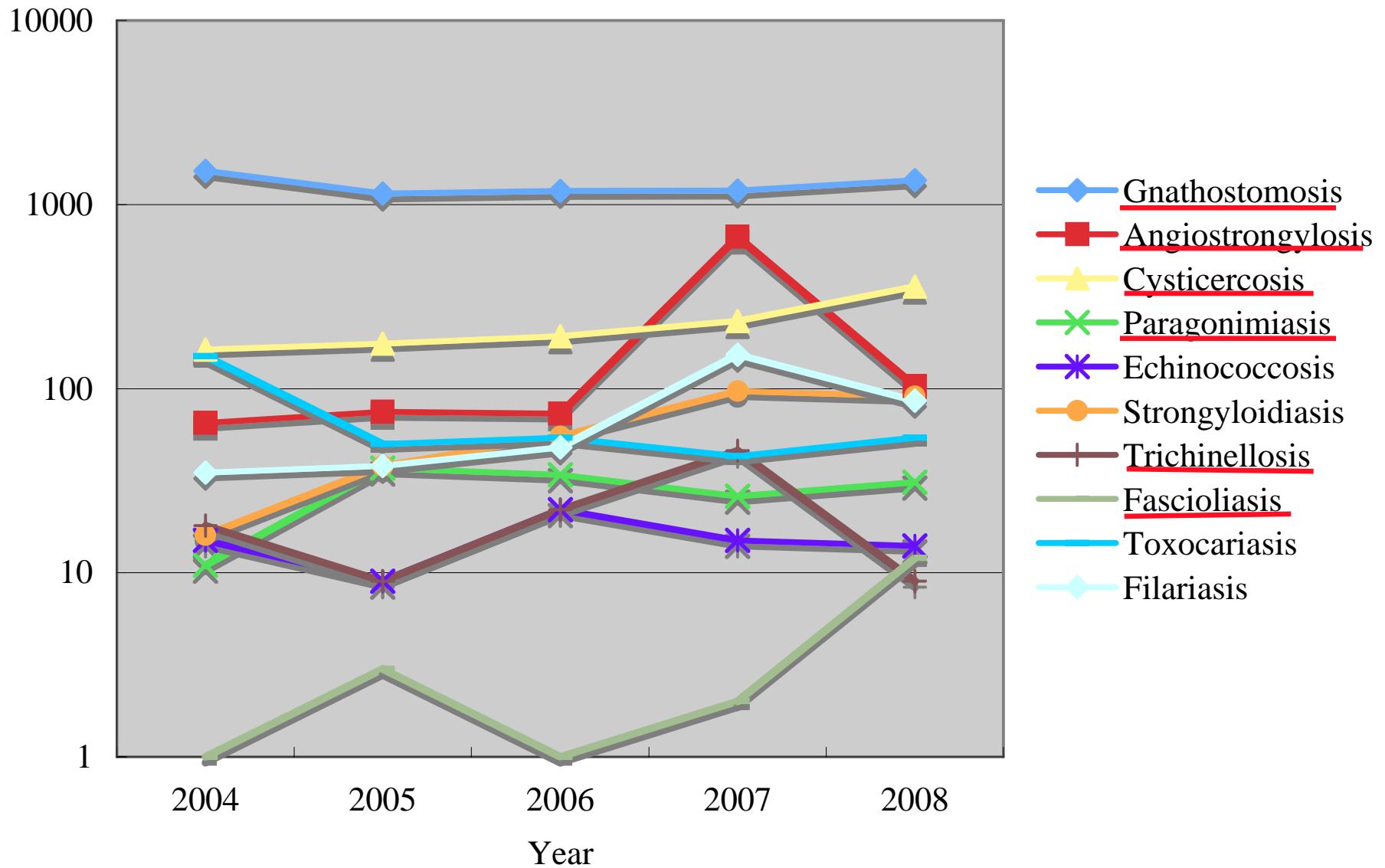
Auteur, année, pays	Pays d'acquisition	Nombre de cas	Forme clinique	Eosinophilie	Traitement
Stowens et Simon ¹⁶ 1981 - États-Unis	Thaïlande	1	cutanée	63 % (10 080/mm ³)	extraction chirurgicale
Tudor et Blair ¹⁷ 1981 - États-Unis	Philippines	1	oculaire	4 %	extraction chirurgicale
Nagler et al. ¹⁸ 1983 - Israël	Népal	1	pulmonaire	50 % (6 500/mm ³)	extraction chirurgicale + diéthylcarbamazine
Kagen et al. ¹⁹ 1984 - États-Unis	Thaïlande	1	cutanée	11 % (540/mm ³)	extrusion spontanée
Raturi et Burkhalter ²⁰ 1986 - États-Unis	Thaïlande	1	cutanée	14 % (850/mm ³)	extraction chirurgicale
Chabasse et al. ²¹ 1988 - France	Thaïlande	1	cutanée	3 250/mm ³	diéthylcarbamazine
Dow et al. ²² 1988 - Royaume-Uni	Bangladesh	1	pulmonaire	21 % (1 570/mm ³)	AINS
Rusnak et Lucey ⁷ 1993 - États-Unis	Thaïlande	1	cutanée	15 % (1 800/mm ³) à 64 % (15 500/mm ³)	praziquantel puis thiabendazole
Jelinek et al. ²³ 1994 - Allemagne	Thaïlande	1	cutanée	56 % (12 712/mm ³)	albendazole
Crowley et al. ²⁴ 1995 - États-Unis	Vietnam	1	cutanée	58 % (13 100/mm ³)	albendazole

Grobusch et al. ²⁵ 2000 - Allemagne	Bangladesh	1	cutanée	26 % (2 510/mm ³)	albendazole
Qahtani et al. ²⁶ 2000 - Canada	Bangladesh	1	intra-oculaire	11 % (1 111/ mm ³)	extraction chirurgicale + albendazole
Chandenier et al. ²⁷ 2001 - France	Japon	1	méningée	N	albendazole
Chappuis et al. ⁵ 2001 - Suisse	Pérou	1	cutanée	31 % (2 700/mm ³)	albendazole puis ivermectine
Del Giudice et al. ²⁸ 2001 - France	Mexique	1	cutanée	21 % (2 961/ mm ³)	albendazole
Puente et al. ⁴ 2002 - Espagne	Thaïlande, Mexique	2	cutanée	N à 3 600/mm ³	albendazole
Germann et al. ²⁹ 2003 - Allemagne	Thaïlande	1	cérébrale	34 %	albendazole
Hale et al. ¹⁵ 2003 - États-Unis	Zambie	2	cutanée	25 et 55,5 % (3 975 et 11 083/mm ³)	albendazole
Kunzle et al. ³⁰ 2003 - Suisse	Vietnam	1	cutanée	24 % (1 512/mm ³)	albendazole
Ménard et al. ³¹ 2003 - France	Cambodge, Vietnam, Thaïlande	5	cutanée	37 % (3 245/mm ³)	albendazole (1 à 5 cures)
Moore et al. ³² 2003 - Royaume-Uni	Chine, Corée du Sud, Asie du Sud-Est, Sous-continent indien, Amérique centrale et du Sud	16	cutanée et viscérale	0 à 4 370/mm ³	albendazole (1 à 2 cures)

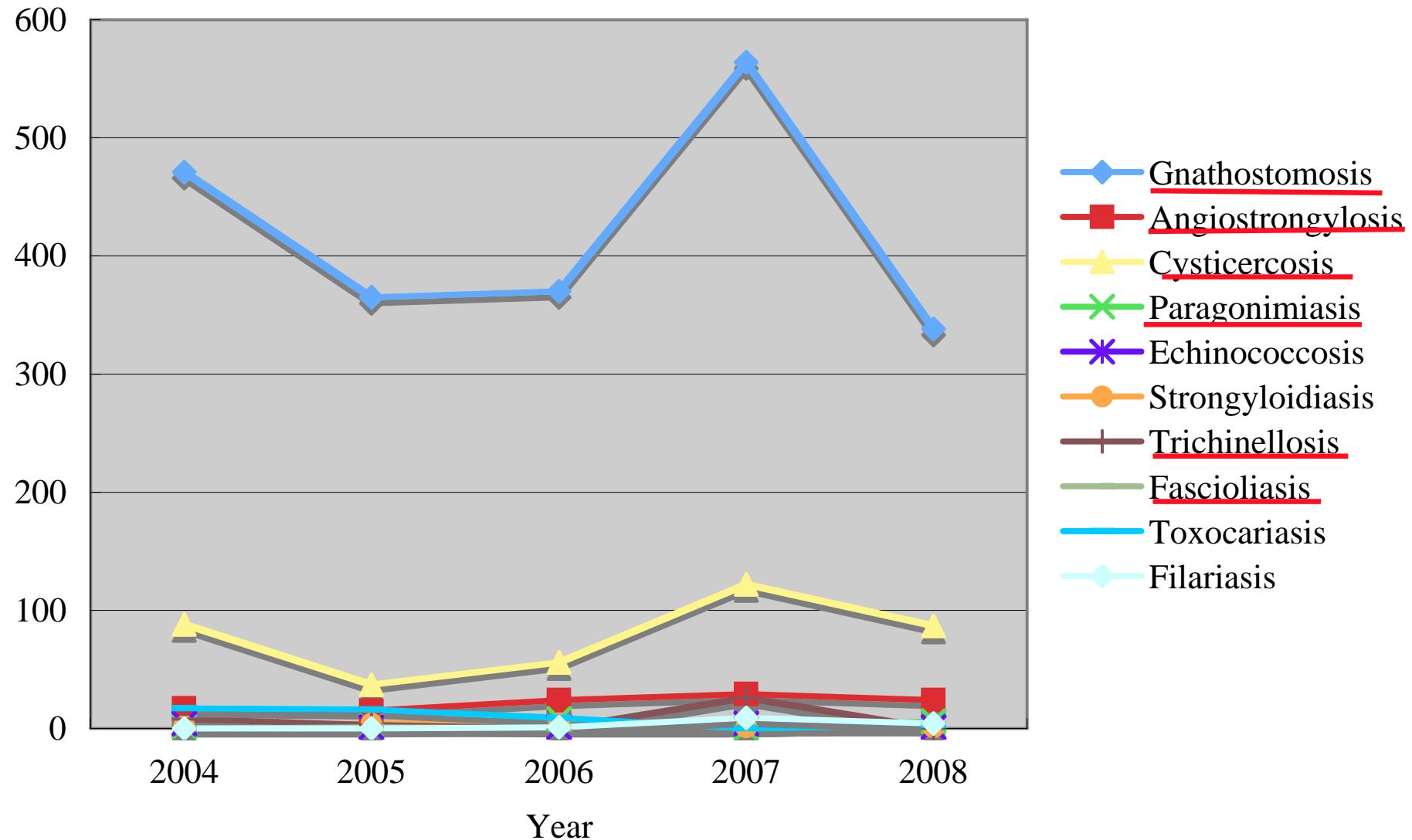
Serological tests in TropMed, Mahidol University (1004-1008)



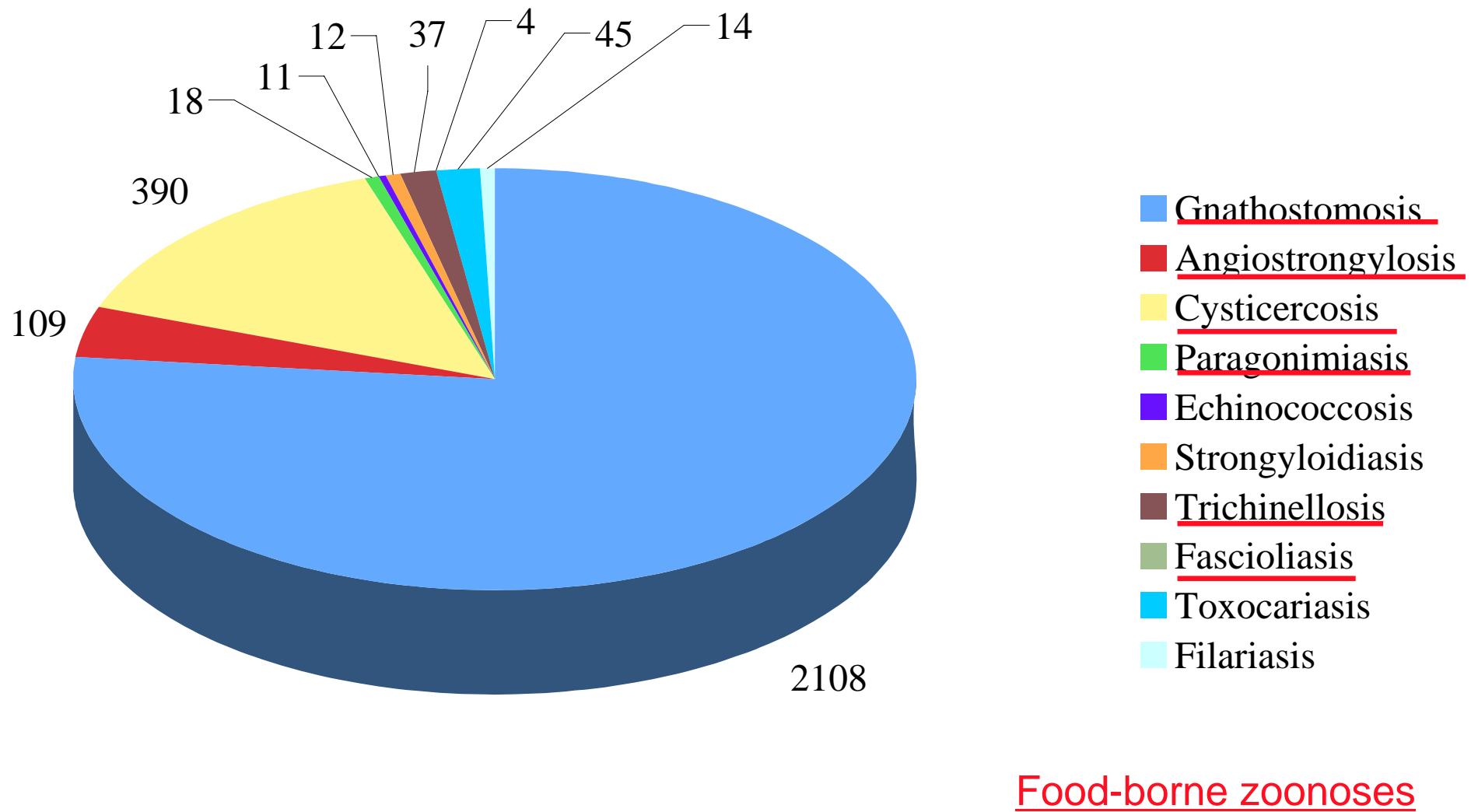
Suspected cases referred to our laboratory



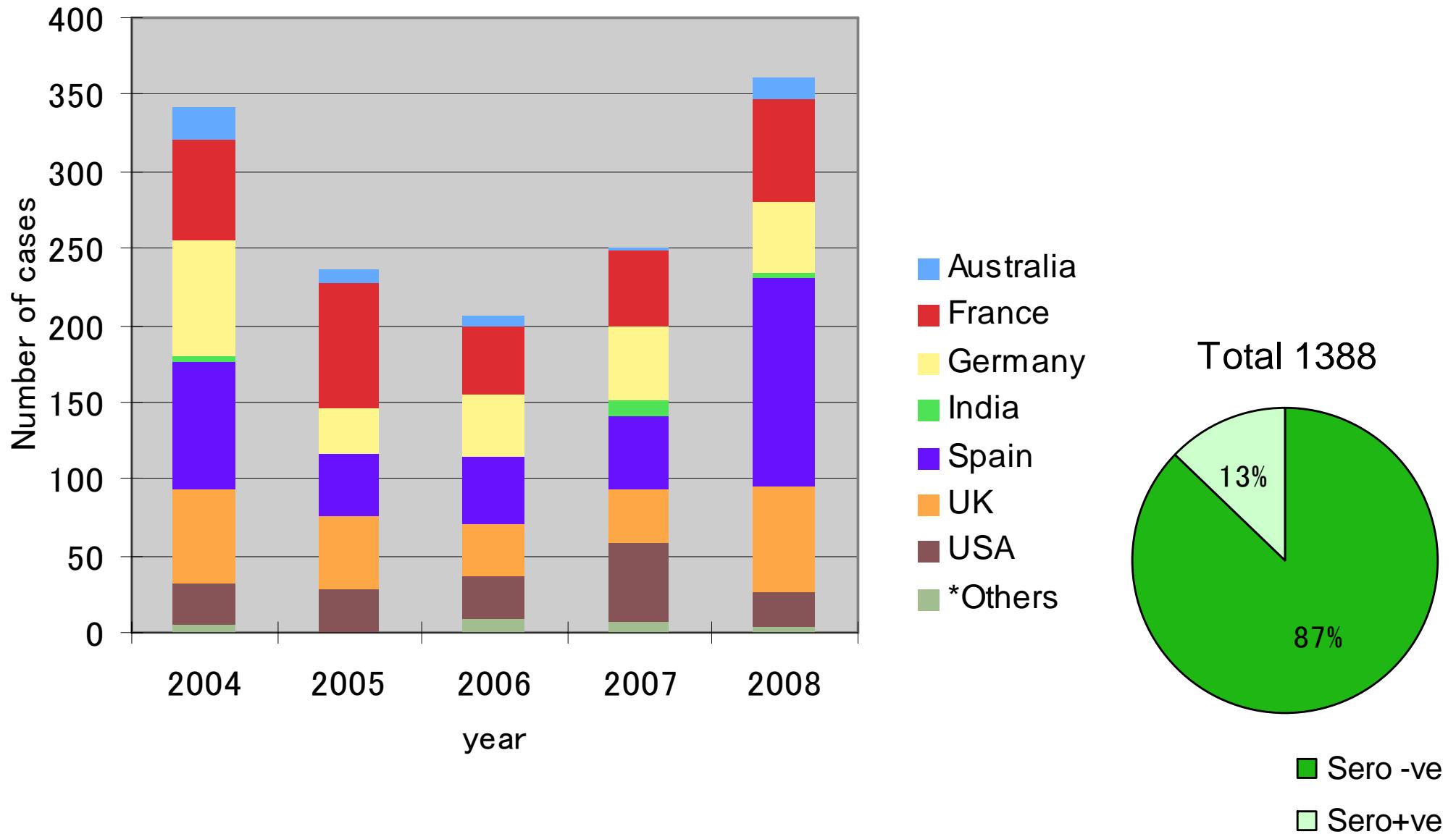
Annual Incidence of Parasitic Diseases



Cumulative cases of parasitic diseases

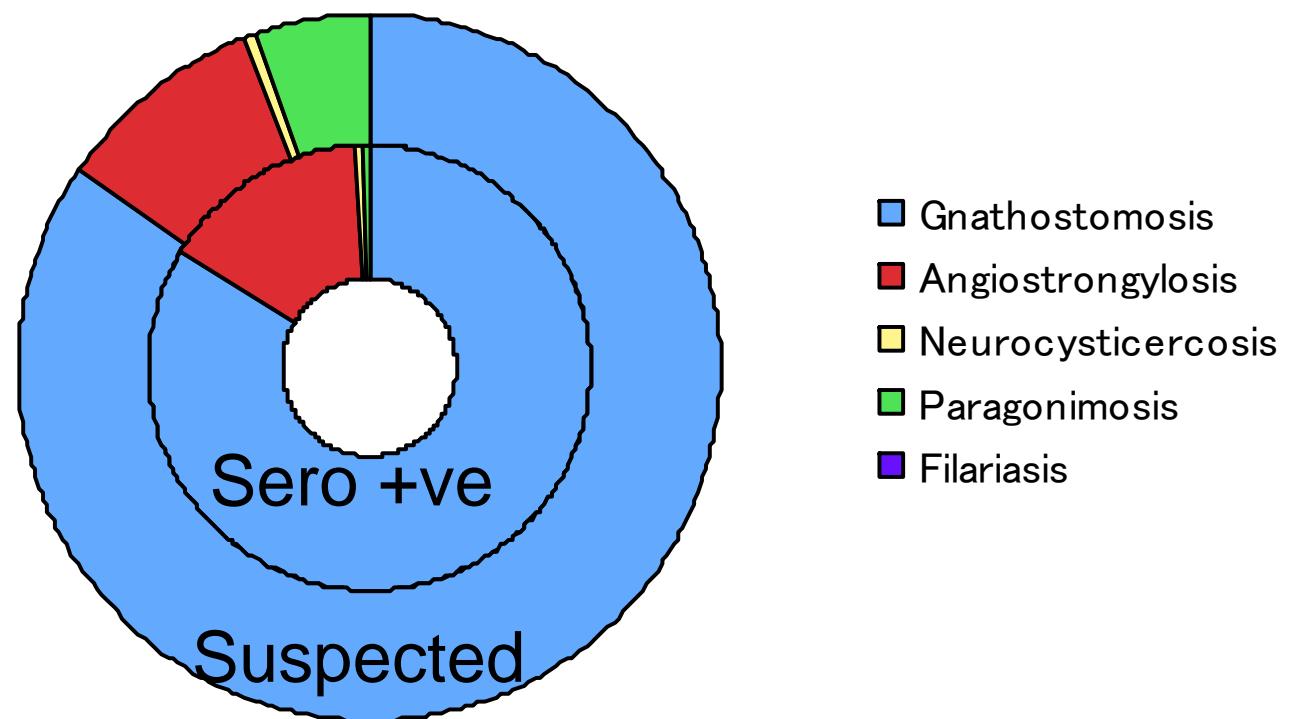


Serological tests from overseas to TropMed, Mahidol University



	Suspected	Sero -ve	Sero+ve
Gnathostomosis	1174	1025	149
Angiostrongylosis	132	105	27
Neurocysticercosis	7	6	1
Paragonimosis	74	73	1
Filariasis	1	1	0
Total	1388	1210	178

← Gnathostomiasis !!!



Morphological identification of *Gnathostoma* larvae



G. spinigerum

1) by hooklets

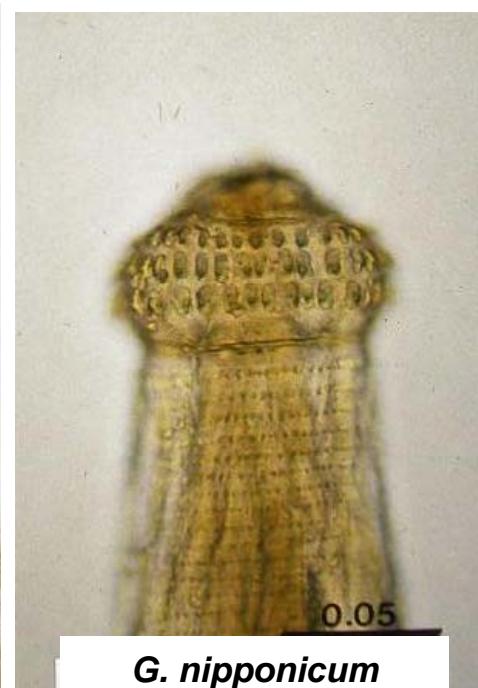
Species	Number of hooklets				Shape of Base	Remarks
	I	II	III	IV		
<i>G. Spinigerum</i>	43	45	47	52	rectangle	I~IV > 40, I<II<III<IV, size variation (-)
<i>G. hispidum</i>	33	37	42	45	rectangle	I, II<40<III, IV, I<II<III<IV,
<i>G. doloresi</i>	37	37	34	34	pebble stone	I~IV < 40, I>IV, extremely small 1st line
<i>G. nipponicum</i>	37	37	41	(-)	rectangle	lacking IV
<i>G. binucleatum</i>	38	41	44	47	rectangle	I~IV > 38, I<II<III<IV, size variation (-)



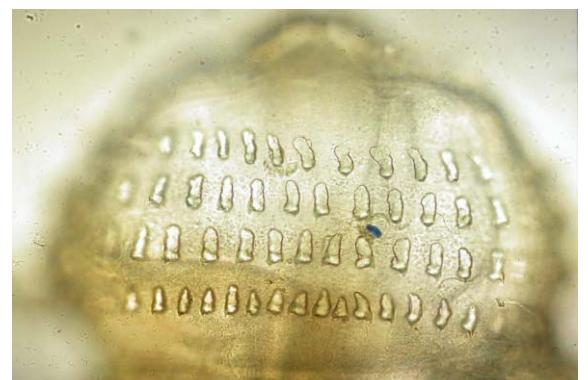
G. hispidum



G. doloresi

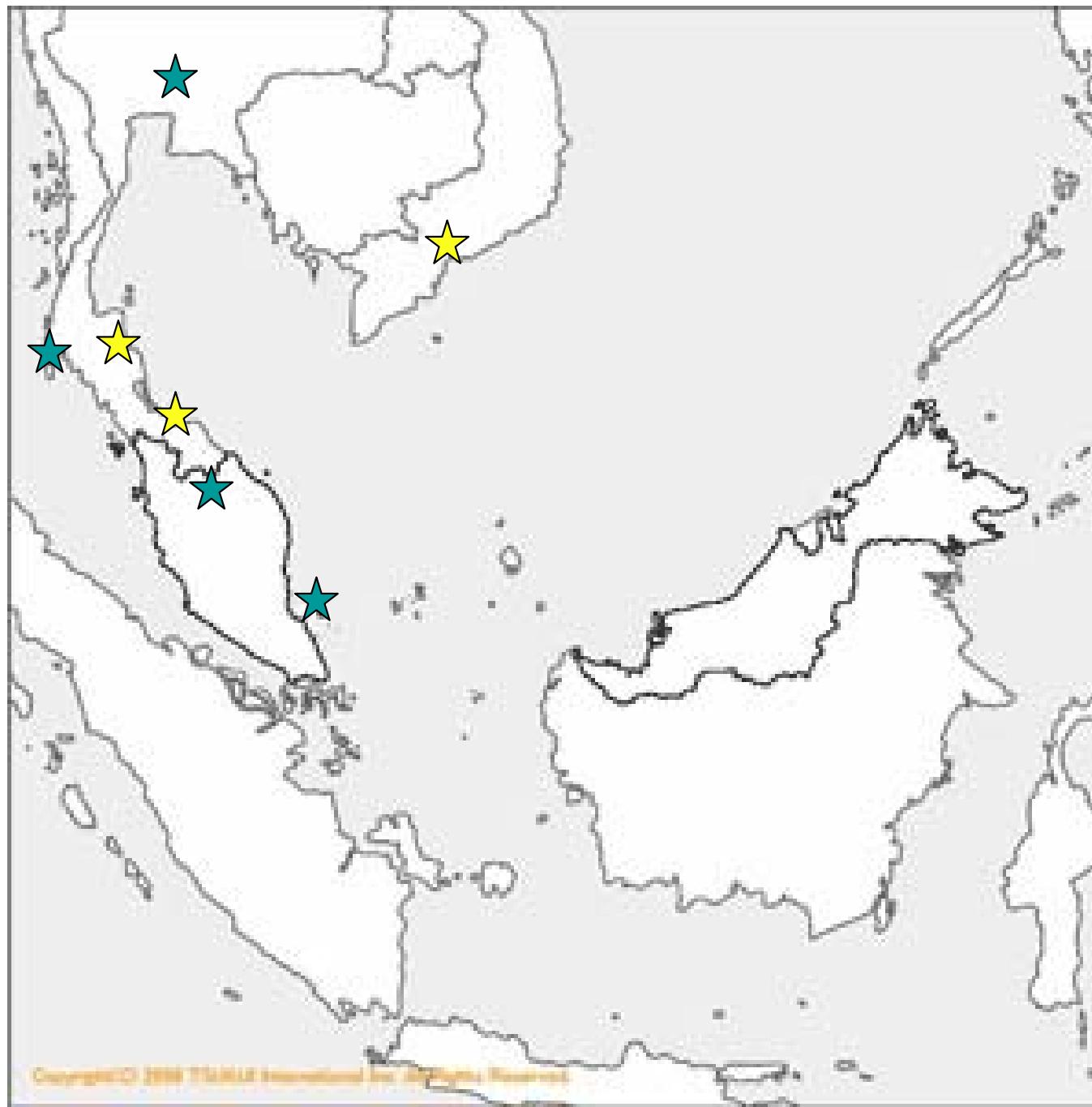


G. nipponicum



G. binucleatum

★ *G. malaysiae*



Malaysia

Tioman Island 1965

Kelantan 1993

Thailand

Phuket Island 1987

Khao Yai 1987

★ *G. vietnamicum*

Vietnam

Saigon 1965

Thailand

Nakhon Si
Thammarat 1987

Songkhla 1987