AUSTRALIA

Bulletin Number 79/20
Issue Date: 12 October 1979

Communicable Diseases Intelligence

Contaminated imported canned dried fish in oil

On 4 October 1979 advice was received from the New Zealand Department of Health that the presence of micro-organisms, the toxin of which was lethal to mice, had been detected in shipments of imported canned, dried, salted, fish in oil, from Hong Kong. The suspect stocks were as follows:

1) 'Salted Fish in Oil' and 'Salted Yellow Croaker Fish in Oil' from the Tung Lee Co.

2) 'Golden Bat' brand salted dried 'Red Snapper', 'White Pomfret' and 'Yellow Croaker Fish' all in oil, from the Chung Cheong Co., Aberdeen, Hong Kong.

Many of these stocks were up to 3 years old and preliminary examination of 2 batches yielded *Clostridium perfringens* and other *Clostridium spp.* as yet unidentified.

One additional brand was mentioned as being possibly suspect, but no confirmatory evidence has been received.

Following an alert to relevant health authorities throughout Australia, reports have been received of approximately 1,000 cans and/or jars of the two major suspect products having been found in Victoria, and smaller quantities in all other States and the A.C.T.

Nineteen specimens (17 received six days ago and 2, two days ago) of the suspect fish products are being examined by the Microbiological Diagnostic Unit in Melbourne. These comprise 11 jars and 2 cans of 'Tung Lee' brand and 1 jar and 5 cans of 'Golden Bat' brand.

There is no product code or evidence of date of manufacture in either English or Chinese.

Most of the cans and jars were in good condition, but of the 'Golden Bat' brand, 2 cans were blown and one jar had leaked.

Standard methods of food examination have yielded *Clostridium spp.* on primary plates from 5 specimens; in two, (Tung Lee jars), these were *Cl. perfringens*, and the remaining 3 are still being investigated. *Bacillus spp.* was also isolated in a few cases.

(continued on page 6.)

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Gastroenteritis in volunteers consuming oysters (contributed by G.S. Grohmann and A.M. Murphy, ICPMR, Sydney; P.J. Christopher, Health Commission of N.S.W.; and Elizabeth Auty, N.S.W. Department of Fisheries)

Following last year's widespread outbreaks of oyster-associated gastroenteritis (CDI 78/14,15,16,18,19 and 25) the Government of N.S.W. has prohibited the sale of oysters from the Georges River and Brisbane water areas unless they have been purified by being relayed in natural water known to be free of pollution or in tanks where the water has been rendered safe by exposure to UV light or ozone.[1] Also, from December 1978 to August 1979 volunteer oyster-testing panels were used as a final check before oysters were released for public consumption. The panels have now been discontinued, but a report on their operation and the relation between gastroenteritis in panel members and restaurant-acquired cases of oyster-associated gastroenteritis will be of interest.

From December 1978 to April 1979, some 40-50 volunteers per week took part on oyster-tasting panels and seven tasters reported ill. Electron microscopy (EM) on the faecal extracts revealed 22-25 nm parvovirus-like particles in two specimens. No other viruses were found by EM and none were isolated in cell culture.

During the winter months May to August 1979, from 50 to 129 volunteers per week took part. There was a marked increase of oyster-associated gastroenteritis among testers during June and July. Nineteen of the 115 tasters (16.5%) exposed during the week ended 1 July 1979 became ill, and so did 10 of the 129 testers (7.8%) exposed during the week ending 22 July. Incidence of gastroenteritis in other weeks was 0-4% (see table overleaf).

Thirty-three stool specimens were examined for bacterial pathogens and for viruses in cell culture. No significant isolations were made. Examination of the faecal specimens by EM however, yielded parvovirus-like particles similar to those described in the June/July 1978 outbreak of oyster-associated gastroenteritis[1,2]. Eight of the 17 parvovirus-like particles observed were identified as Norwalk virus by immune electron microscopy (IEM).

Rainfall again appeared to be associated with the increased incidence of gastroenteritis.[1] Although the batches of oysters were declared bacteriologically safe, cases of Norwalk gastroenteritis were detected during the weeks following periods of rainfall (see table). There is some doubt about the significance of the 22-25nm particles, as they have been demonstrated previously in the stools of both patients and healthy individuals[3], and the relation of their isolation to rainfall is less clear.

In addition to the volunteer cases of oyster gastroenteritis, 12 separate restaurant-acquired cases of oyster-associated gastroenteritis were reported during July and early August. Only five faecal specimens were available for EM examination. In two cases, Norwalk virus was identified in stools by IEM and in one case, 22-25nm parvovirus-like particles were detected.

Studies on volunteer tasters of Georges River oysters - May-August 1979

Oysters harvested week ending	Rainfall preceding week (mm)	Number of tasters	Number ill	EM observations on faecal extracts			
				27-30nm Norwalk virus	22-25nm parvo-virus like particles	No virus detected	Specimen not submitted
6.5.79	0	60	0				
13.5.79	0	59	0				
20.5.79	20	80	1		1		
27.5.79	0	75	1				1
3.6.79	13	95	1			1	
11.6.79	7	74	0				
17.6.79	0	120	4		2	2	
24.6.79	0	99	1			1	
1.7.79	127	115	19	4	5	9	1
8.7.79	0	94	3*	1	1	1	1
15.7.79	0	90	1			1	
22.7.79	15	129	10	3		3	4
29.7.79	0	84	0				
5.8.79	0	86	1				1
TOTAL			42	8	9	18	8

* One ill volunteer was excreting both Norwalk virus and parvovirus-like particles.

References

1. Med. J. Aust. (1979) 2:329-333
2. Med. J. Aust. (1978) 2:439
3. J. Clin Path (1974) 27:603

Arthropod borne vectors of human disease discovered on aircraft

The spread by aircraft of vectors of human disease to countries previously free from them is well documented and has been known for many years. In 1933 Anopheles gambiae was discovered in aircraft arriving in Kenya(1). Since then insect vectors of human and animal diseases have been collected off aircraft in nearly every continent.

Since the 1930's however there has been a dramatic increase in international movement of passengers and freight and the speed of modern travel has abolished one of the traditional barriers which formerly protected Australia from exotic disease. Aircraft from almost anywhere in the world can arrive in Australia well within the incubation period of most communicable diseases. If the vectors of arthropod borne disease are imported along with carriers or those incubating disease the risks to this country are obvious.

The disinsection of aircraft has for many years been the first line of defence against the importation of exotic disease vectors into Australia. This procedure is well-known to arriving passengers who frequently complain of the inconvenience. A look at the extent of the

problem will show however how important aircraft spraying is in keeping this country free from human, animal and plant disease.

Since 1974 Commonwealth Department of Health staff have made regular random checks on international aircraft arriving at all major airports of entry to determine the number and types of insects arriving on these aircraft and to monitor the effectiveness of disinsection procedures.

The collections described are for cabins only as separate procedures apply to cargo holds.

Specimens likely to be of importance to human and animal health are separated from the bulk collections for full identification.

Table 1 lists some potential mosquito vectors found during these checks.

Table 1

Some insect vectors of human diseases collected off aircraft in Australia

Species	Airport	Vector status
Aedes albopictus	Darwin Perth	Dengue fever Chikungunya virus
Aedes vigilax	Darwin, Brisbane	Ross River virus Edge Hill virus
Culex fatigans	Darwin, Perth Brisbane, Sydney	Boncroftian filariasis Arboviruses
Culex tritaeniorynchus	Darwin, Sydney	Japanese encephalitis Chikungunya virus Sindbis virus. Getah virus
Culex gelidus	Darwin, Sydney	Japanese encephalitis Getah virus Chikungunya virus
Culex annulirostris	Darwin, Brisbane, Sydney, Perth	Ross River virus Australian encephalitis
Mansonia uniformis	Darwin, Brisbane, Sydney, Perth	Malayan filariasis Bancroftian filariasis Chikungunya virus
Anopheles sundaicus	Darwin	Malaria
Anopheles subpictus	Darwin	Malaria

Of these Aedes vigilax, Culex fatigans and C. annulirostris are known to be present in this country. The collection of A. sundaicus and A. subpictus at Darwin on flights from Bali indicates the potential for the reintroduction of malaria since there have been instances where clinical cases of malaria have arrived on the same aircraft as the exotic vectors.

Table 2 gives a list of collections by aircraft type and number of flights.

TABLE II

Insects collected from international aircraft at Perth, Darwin, Brisbane and Sydney airports. (1974-1979)

Type of aircraft	Nos of insects	No of flights examined	Average per flight
B707	4237	85	49.84
DC8	1020	22	46.36
VC10	107	6	17.83
HAWKER SID	1110	16	69.37
DC10	3920	61	64.26
B747	5460	97	56.28
Totals	15854	287	55.24

The average of 55.24 specimens per flight indicates the extent of the problem.

The numbers collected in Australia appear high when compared with similar collections done in other countries. The World Health Organization reported a total of 373 various insects collected in spot checks between 1964 and 1968 on aircraft arriving in Hawaii(2). Basio reported collection of 534 adult mosquitos, 138 flies, and 45 moths from 14,246 aircraft inspected during these same years at Manila international airport(3).

The majority of aircraft arriving in this country refuel at night at foreign airports before flying the final leg into Australia.

The figures show that the largest average number of specimens was collected from Hawker Siddeley aircraft. In this model effective 'on arrival' disinsection is hampered by there being an interval of 3-4 minutes while the door is opened, and the inbuilt stairway lowered, before disinsection can commence.

The big jets with wide doorways and better lighting than small aircraft, act as giant light traps to attract the local insect population in these mainly tropical areas. Most specimens are collected in or near lighting panels.

This is the probable reason why the numbers collected in Australia are higher than those found elsewhere.

Although specimens are collected at airports around Australia it is the northern part of this country which is of particular concern. This area is at risk to malaria which was eradicated from the mainland in 1962. The presence of vectors such as A. sundaicus on aircraft

arriving in Darwin along with passengers who may well be suffering parasitaemia is therefore disturbing. Filariasis also present in this country in past years and now eliminated could well be reintroduced. Dengue, the last indigenous case of which occurred in the mid nineteen fifties, could also be re-established.

It should be remembered that the introduction of disease may well not be immediately apparent, pass unrecognised, or not be reported.

A recent editorial in the Lancet cites instances in which 6 French patients who had never been to a malaria endemic area but lived or worked in the vicinity of airports handling aircraft returning from Africa, contracted the disease[4]. Two similar cases from the neighbourhood of Kloten airport in Switzerland and one in Holland in 1978 were also mentioned.

In view of the importance of disinsection the Commonwealth Department of Health has these procedures under continual review. For example in 1976 inflight trials of application techniques were carried out between Singapore and Sydney[5], and more recently a re-evaluation of on-arrival spraying of d-phenothrin is underway in Australia.

References

1. Rec. Med. Res. Lab. Nairobi No.6 (1935)
2. WHO Chron. (1971) 25:236
3. Chan YC Chan KL Ho BC (Eds) Vector Control in S.E. Asia. Proc SEAMEO Workshop (1973)
4. Lancet (1979) 1:1328-1329
5. WHO/VBC/76.636

Contaminated imported canned dried fish in oil (continued from page 1)

Supernatants of 17 cooked meat media, each inoculated with 2-4 grams of specimen, heat shocked at 80°C for 30 minutes and incubated for 5 days, have been tested by GLC, and 10 have yielded peaks indicating iso-caproic acid. Supernatants of 3 of them have not killed mice in 24 hours.

At least one of the strains of clostridia being investigated also produces iso-caproic acid but is not biochemically typical of Cl. botulimun.

Action has been taken to withdraw suspect batches from the Australian market.

However, to date there have been no reports received of food poisoning associated with these products, even though the suspect stocks appear to have been available for an appreciable time.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 20-9-79 . 3-10-79 BULLETIN NUMBER 79.20
VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS

VIRUS OR VIRAL ANTIGEN	PA	NL	NA	CS	SK	EY	WA	BR	GE	OT	TOTAL
0100 ADENOVIRUS NOT TYPED	6	4	9			1			1		21
0101 ADENOVIRUS TYPE 1	2		4								6
0102 ADENOVIRUS TYPE 2	3		1								4
0103 ADENOVIRUS TYPE 3	1										1
0105 ADENOVIRUS TYPE 5	1										1
0107 ADENOVIRUS TYPE 7	2					2				1	5
0119 ADENOVIRUS TYPE 19						3			1		4
0121 ADENOVIRUS TYPE 21						1					1
0199 ADENOVIRUS TYPING PENDING	7		3			4			1		15
0201 INFLUENZA A VIRUS		19	2								21
0203 INFLUENZA B VIRUS		17	3								20
0302 PARAINFLUENZA VIRUS TYPE 2		3									3
0303 PARAINFLUENZA VIRUS TYPE 3		4	5					1			10
0399 PARAINFLUENZA VIRUS TYPING PENDING			3								3
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	1	15	68					1			85
0500 REOVIRUS (ALL TYPES)			10								10
0600 MYCOPLASMA PNEUMONIAE		27									27
0700 ORNITHOSIS-PSITTACOSIS		3									3
0804 COXSACKIEVIRUS A4	1						1				2
0809 COXSACKIEVIRUS A9				1							1
0902 COXSACKIEVIRUS B2	2		2				1				5
0903 COXSACKIEVIRUS B3										1	1
0904 COXSACKIEVIRUS B4	5		2	1							8
1006 ECHOVIRUS TYPE 6	1		1								2
1011 ECHOVIRUS TYPE 11	11		13	6			1				31
1016 ECHOVIRUS TYPE 16	2		1	1							4
1031 ECHOVIRUS TYPE 31	1		2								3
1101 POLIOVIRUS TYPE 1	1		1							1	3
1102 POLIOVIRUS TYPE 2	2									1	3
1103 POLIOVIRUS TYPE 3	2										2
1104 POLIOVIRUS-VACCINAL STRAIN	3		3					1			7
1200 MUMPS VIRUS		14	5	1							20
1300 HERPES VIRUS GROUP-NOT TYPED					3					1	4

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 20-9-79 . 3-10-79 BULLETIN NUMBER 79.20
VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS-CONTINUED

VIRUS OR VIRAL ANTIGEN	FA	SL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
1301 HERPES SIMPLEX VIRUS-NOT TYPED		11	6	1	24				29	3	74
1303 VARICELLA-ZOSTER VIRUS		16			2					1	19
1306 HERPES SIMPLEX TYPE 1			12		18	1			5	9	45
1307 HERPES SIMPLEX TYPE 2	3				3		1		53		60
1399 HERPES VIRUS TYPING PENDING	1				4				6		11
1401 COXIELLA BURNETI		36									36
1502 PICORNA VIRUS-NOT TYPED			1								1
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)					2						2
1521 MEASLES VIRUS		9									9
1522 RUBELLA VIRUS		23	2							1	26
1530 HEPATITIS A VIRUS		2									2
1532 HEPATITIS B ANTIGEN		48									48
1535 HEPATITIS A ANTIBODY		2									2
1541 CHLAMYDIA A - TRIC TYPE						1			45		46
1556 CMV - CYTOMEGALOVIRUS	1	17	8				22	1	1	9	59
1562 REOVIRUS (ALL TYPES)			1								1
1564 ROTAVIRUS	59										59
1571 ENTEROVIRUS TYPE 71 (BRCR)			1								1
1599 ENTEROVIRUS TYPING PENDING	15		9								24
ROSS RIVER VIRUS		5									5
PARVOVIRUS	1										1
T	134	275	178	11	56	13	26	4	142	28	867

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 20-9-79 . 3-10-79 BULLETIN NUMBER 79.20

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

	VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ PDW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	T
0100	ADENOVIRUS NOT TYPED	1		4		4		10	1	20
0101	ADENOVIRUS TYPE 1				3		3			6
0102	ADENOVIRUS TYPE 2			2	1		1			4
0103	ADENOVIRUS TYPE 3								1	1
0105	ADENOVIRUS TYPE 5						1			1
0107	ADENOVIRUS TYPE 7	1			2		1		1	5
0119	ADENOVIRUS TYPE 19				1				3	4
0121	ADENOVIRUS TYPE 21								1	1
0199	ADENOVIRUS TYPING PENDING			2		9	3			14
0201	INFLUENZA A VIRUS	2		10	1		5		4	22
0203	INFLUENZA B VIRUS	2					2		16	20
0302	PARAINFLUENZA VIRUS TYPE 2							3		3
0303	PARAINFLUENZA VIRUS TYPE 3				1	3	1	3	2	10
0399	PARAINFLUENZA VIRUS TYPING PENDING						3			3
0400	RESPIRATORY SYNCYTIAL VIRUS (RS)	2		9	5	20	40	7	2	85
0500	RHINOVIRUS (ALL TYPES)				3	3	1	3		10
0600	MYCOPLASMA PNEUMONIAE	1		7	2		5	10	2	27
0700	ORNITHOSIS-PSITTACOSIS	1					2			3
0804	COXSACKIEVIRUS A4			2						2
0809	COXSACKIEVIRUS A9	1								1
0902	COXSACKIEVIRUS B2						1	2		3
0903	COXSACKIEVIRUS B3				1					1
0904	COXSACKIEVIRUS B4				2	1	2		2	7
1006	ECHOVIRUS TYPE 6						2			2
1011	ECHOVIRUS TYPE 11				8	10	5		4	27
1016	ECHOVIRUS TYPE 16						3		1	4
1031	ECHOVIRUS TYPE 31			1			1		1	3
1101	POLIOVIRUS TYPE 1	1							2	3
1102	POLIOVIRUS TYPE 2						2	1		3
1103	POLIOVIRUS TYPE 3							1	1	2
1104	POLIOVIRUS-VACCINAL STRAIN			2		3				5
1200	MUMPS VIRUS	4		6		1	1	3	5	20

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 20-9-79 . 3-10-79 BULLETIN NUMBER 79.20
VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES-CONTINUED

	VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	T
1306	HERPES VIRUS-GROUP-NOT TYPED				2	1	1			4
1301	HERPES SIMPLEX VIRUS-NOT TYPED	7		6	1	5	3	20	32	74
1303	VARICELLA-ZOSTER VIRUS	3		7	3		3	3		19
1306	HERPES SIMPLEX TYPE 1	7		1	20		19			47
1307	HERPES SIMPLEX TYPE 2	24		1	16		19			60
1399	HERPES VIRUS TYPING PENDING			3			7		1	11
1401	COXIELLA BURNETI	8			7		10	11		36
1502	PICORNA VIRUS-NOT TYPED								1	1
1515	CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)				2					2
1521	MEASLES VIRUS	1		1			2	5		9
1522	RUBELLA VIRUS	1		1	3		6	6	9	26
1530	HEPATITIS A VIRUS								2	2
1532	HEPATITIS B ANTIGEN			6	20		6	6	10	48
1535	HEPATITIS A ANTIBODY						2			2
1541	CHLAMYDIA A - TRIC TYPE	10		4			1		31	46
1556	CMV - CYTOMEGALOVIRUS			12	30	3	3	3		51
1562	REOVIRUS (ALL TYPES)						1			1
1564	ROTAVIRUS	8		15	2	4	23		7	59
1571	ENTEROVIRUS TYPE 71 (BRCR)				1					1
1599	ENTEROVIRUS TYPING PENDING			4		12	5	1		22
ROSS RIVER VIRUS								5		5
PARVOVIRUS(LIKE)		1								1
T		86		106	137	79	196	103	142	849

9th. 4 Weekly Period for 1979...

BULLETIN .79/20...

11.8.79 - 7.9.79 incl.

DISEASE	Total	N.S.W.	VIC	QLD	S.A.	W.A.	TAS.	N.T.	A.C.T.	CUMULATIVE TOTAL TO DATE FOR YEAR
Amoebiasis	2					1	1			* 15
Ankylostomiasis	2			2						* 131
Anthrax										1
Arbovirus infection	3			3						50
Brucellosis	1			1						39
Campylobacter infections										-
Chancroid										15
Cholera										-
Congenital rubella syndrome										-
Diphtheria										-
[redacted]vanosis	10			10						36
Giardiasis										-
Genital herpes										-
Gonococcal ophthalmia neonatorum										-
Gonorrhoea	879	289	170	233	63	36	13	63	12	8348
Hepatitis A (infectious)	112	43	25	17	2	1	6	12	6	*1375
Hepatitis B (serum)	61	12	21	3	20	1		1	3	552
Hepatitis - unspecified	8					8				58
Hydatid disease	1		1							18
Lassa Fever										-
Legionnaires disease										-
Leprosy	1			1						37
[redacted]ospirosis	2			1	1					43
Lymphogranuloma venereum										1
Malaria	28	8	3	5	4	7			1	*254
Marburg Disease										-
Meningococcal infections	6			5		1				63
Non-specific urethritis										-
Ornithosis										9
Pertussis (whooping cough)	4		4							159
Plague										-
Poliomyelitis										-
Q. fever	20		1	16	3					433
Rabies										-

DISEASE	Total	N.S.W.	VIC	QLD	S.A.	W.A.	TAS.	N.T.	A.C.T.	CUMULATIVE TOTAL TO DATE N.B. 1982
Salmonella infections	70	3	11	7	20	9	4	16		1411
Shigella infections	48				5	12		31		405
Smallpox										—
Syphilis	326	94	8	109	40	9	1	65		*2104
Tetanus	1		1							* 10
Trachoma										—
Tuberculosis (all forms)	143	51	43	7	18	16	1	6	1	*1129
Typhoid fever	1	1								18
Typhus (all forms)										2
Vibrio parahaemolyticus infections										—
Yellow Fever										—
Yersinia enterocolitica infections										—

Data collected under the Notificable Diseases Returns may bear little or no correlation to that collected under the CDI laboratory scheme. Whilst the latter is a sampling program, the Notifiable Diseases data is dependent upon voluntary reporting by medical practitioners etc.

* Amoebiasis +1 case for the A.C.T. since last report. Total is now 15 instead of 14.

Ankylostomiasis +22 cases for the N.T. since last report. Total is now 131 instead of 109.

Hepatitis A (infectious) -3 cases for N.S.W. since last report. Total is now 1375 instead of 1378.

Malaria +1 case for N.S.W. since last report. Total is now 254 instead of 253.

Syphilis -4 cases for the A.C.T. since last report. Total is now 2104 instead of 2108.

Tetanus due to a clerical error, the cumulative total in the last report should have been 9 not 1. The previous 8 cases for the year were not included.

Tuberculosis -4 cases for Vic and +1 case for W.A. since last report. Total is now 1129 instead of 1132.