AUSTRALIA
Communicable Diseases Intelligence

Bulletin Number 79/7
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Virus reports this period

The virus tables in this issue are incomplete. Postal delays have prevented reports from the Laborities reaching Canberra in time for publication.

Data from those laboratories missed will be included in the next issue.

A possible fatal case of Legionnaires' Disease in Western Australia

(contributed by G. Harnett, Virus Laboratory, State Health Laboratory Services, Perth)

A woman of 57 was admitted to hospital with pneumonia. She had a fluorescent antibody titre of 1/10 to Legionella pneumophila and also complement fixing antibody titres of 1/10 against Mycoplasma pneumoniae and less than 1/10 against Chlamydia group antigen. On retesting after 2 weeks the titres of antibody to M. pneumoniae and Chlamydia had risen to 1/40 and 1/80 respectively, but the fluorescent antibody titre to L. pneumophila had risen to 1/160. A similar titre was found when testing her serum by anti-IgM conjugate and this was not removed by staphylococcal protein A. The presence of IgM antibody for Legionella pneumophila was confirmed by sucrose-gradient fractionation.

L. pneumophila antigen could not be demonstrated on formalin-fixed lung sections by the direct fluorescent-antibody test; we feel that any antigen present would have been coated already by IgG, as IgG could be demonstrated by an anti-IgG conjugate.

Editor's comment

This is the second case of Legionnaires' Disease described in Australia, although 3 others were detected by retrospective testing of sera stored at Fairfield Hospital in Melbourne. CDI 78/17 and 78/18.

Relatives of the dead woman were questioned to determine if she had a close association with birds, in an effort to determine if it was possible that she had contracted psittacosis (Chlamydia psittaci). No avian exposure was reported, nor any aspect of her lifestyle which

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would have exposed her to the environmental sources of L. pneumophilia previously documented.

Ormsbee and Latimer[1] have reported high titres for psittacosis in Legionnaires' Disease, and a common antigenic component has been postulated.

A fuller report on this case is being prepared for publication by Dr G. Carroll, Royal Perth Hospital.

Reference 1 Ormsbee and Latimer J. of Infectious Diseases Vol.38 No.2 August 1978

Influenza (H_1N_1)

The Commonwealth Serum Laboratories in Melbourne has reported the recent isolation of three strains of Influenza A (H_1N_1). Two strains, from a 20 year old university student and a 36 year staff member at C.S.L., resembled A/USSR/90/77 and were associated with a typical clinical syndrome. The third isolate, from a 24 year old university student, is undergoing further tests for specific identification.

The Weekly Epidemiological Record, 26 January 1979, reviewed the distribution of influenza in the world during 1978. Between October 1977 and September 1978, the most prevalent strain was A/USSR/90/77 (H_1N_1) which was designated as the H_1N_1 prototype. Some minor antigenic drifts, such as the variant A/Brazil/11/78 (H_1N_1) which appeared in Brazil, Chile and some areas of the United States, were observed. These drifts gave no evidence of progressive antigenic change and required no modification of the A(H_1N_1) antigen included in the vaccines.

Although attention focussed on the reappearance of A(H_1N_1), the incidence of cases associated with A(H_3N_2) increased in almost all countries reporting influenza activity in this period. The most recent variant, A/Texas/1/77 (H_3N_2) was generally the predominant strain, although the concurrent circulation of A/Victoria/3/75 (H_3N_2) which was prevalent in 1976/77 was also seen in some countries.

Infections with Influenza B virus were very uncommon, and where they occurred were usually related to B/Hong Kong/5/72. A new variant, B/Hanover/13/78 was identified in the Federal Republic of Germany, and strains similar to this were isolated in Hong Kong and New Zealand.

The continued circulation of A(H_1N_1) strains in the recent winter in the Northern Hemisphere suggests that Australia will continue to record infections with this strain this year. The vaccines available through C.S.L. in Australia are a monovalent vaccine containing 750 I.U. of A/USSR/90/77 type antigen per one ml. dose ("Monoflu") and a trivalent formulation containing 250 I.U. each of A/USSR/90/77, A/Texas/1/77, and B/Hong Kong/8/73 type antigens, per ml. The latter formulation is the same as that provided for the 1978 winter. "Monoflu" has been introduced because persons under 25 years of age have been shown to require a higher potency vaccine for the priming dose. For the age group 6 years and 25 years, a "Monoflu" injection, followed 4 weeks later by administration of the polyvalent vaccine is recommended; over 25 years, one dose of the polyvalent is sufficient.

The recommendation remains that only those persons whose medical condition indicates the necessity for influenza prophylaxis should receive influenza vaccination.

Australian arboencephalitis monitoring programme - Victoria

The Victorian Health Commission and the Victorian Department of Agriculture maintain a monitoring programme in the northern part of Victoria using sentinel chickens for the early detection of Australian Arboencephalitis virus. Ten flocks of 20 chickens each are maintained at Mildura, Robinvale, Swan Hill, Kerang, Echuca, Barmah, Cobram, Rutherglen, Wodonga and Shepparton. These chickens are bled weekly and the sera tested for the presence of haemagglutination inhibition (HAI) antibody to Group A (Sinbis) and Group B (Australian Arboencephalitis) togaviruses at the Attwood Veterinary Research Laboratory.

During the past summer no Group B HAI antibody was present in any of the sentinel chicken sera but a number of birds have developed antibody to Group A togaviruses.

In addition to sentinel chickens the programme also includes testing of wild bird sera for the presence of antibody, monitoring levels of Culex annulirostris larvae in water and around towns in the area and trapping, identification, and processing for virus isolation of adult mosquitoes. To date, a total of 17,400 mosquitoes have been collected and virus isolation procedures are currently being undertaken.

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The number of birds in which seroconversions have occurred is shown in the following table:

LOCATION	No.* of birds with Group A antibody								
Date:	3.1.79	8.1	15.1	22.1	29.1	5.2	12.2	19.2	26.2
Mildura	-	-	1	1	2**	5**	7**	11**	12**
Robinvale	1	1	1	1	1	2	2	2	4
Swan Hill	-	-	-	-	-	-	1	1	1
Kerang	-	-	-	-	-	-	2	2	2
Echuca	-	-	-	-	-	-	-	-	-
Barmah	-	-	-	-	-	-	-	-	-
Cobram	-	-	-	-	-	-	-	-	-
Rutherglen	-	-	-	-	-	1	3	3	3
Wodonga	-	-	-	-	-	-	-	-	-
Shepparton	-	-	1	1	1	6	8	11	13

* Out of a total of 20
** Out of a total of 14

...2/

Editor's note:

In addition to the above, flocks of 20 sentinel chickens are maintained at Narrandera, Deniliquin, Griffith, Pooncarrie and Hay in N.S.W. These birds are also bled weekly.

The increased frequently of seroconversions to the Group A togaviruses correlates well with the increase in the number of Ross River Virus infections reported in recent issues of the CDI. Ross River Virus is a Group A togavirus which is transmitted by the Culex annulirostris and Culex vigilax mosquitoes, with water birds as the major reservoir of infection.

β - lactamase producing N. gonorrhoeae

A further 2 isolations of the above organism have been reported:

South Australia: male, acquired in S.E. Asia, probably Thailand
Tasmania: male, recently returned from New Guinea

Human salmonellosis

January - add the following: (new total: 505)

S. adelaide 1, S. bovis-morbificans 5, S. bredeney 4, S. bukava 1, S. chester 2, S. enteritidis 1, S. give 3, S. havana 1, S. infantis 9, S. muenchen 2, S. newington 2, S. newport 6, S. orientalis 1, S. saint paul 4, S. singapore 3, S. tennessee 2, S. typhi 3*, S. typhimurium 149*, S. virchow 1.

*S. typhi phage type 28-2, degraded 1

*S. typhimurium type 1 3, type 3 2, type 4 12, type 5 4, type 6 2, type 8 5, type 21 1, type 22 5, type 23 1, type 26 1, type 27 3, type 29 2, type 35 1, type 38 1, type 44 1, type 64 3, type 78 1, type 101 12, type 102 3, type 116 1, type 124 1, type 135 16, type 140 1, type 141 6, type 167 2, type 170 9, type 174 6, type 176 4, type 178 4, type 179 19, type 183 3.

February - add the following: (new total: 726)

S. adelaide 1, S. birkenhead 2, S. blockley 2, S. bovis-morbificans 2, S. bredeney 1, S. chester 1, S. enteritidis 1, S. haifa 1, S. havana 1, S. infantis 20, S. litchfield 4, S. meleagridis 1, S. muenchen 3, S. newport 2, S. oranienberg 3, S. paratyphi A 6, S. potsdam 1, S. reading 1, S. saint-paul, S. singapore 2, S. typhi 6*, S. typhimurium 149*, S. virchow 2, S. wandsworth 5, S. welikade 1, S. yerongapilly 1.

*S. typhi Type M4 2, type 46 3, untypable 2.

(S. typhi untypable - 9 day history of diarrhoea in 34 yr. male. Travelled from India and then around parts of Australia by bus.)

*S. typhimurium Type 4 4, type 5 7, type 6 4, type 12A 16, type 21 1, type 22 2, type 26 3, type 26 2, type 27 4, type 39 3, type 55 1, type 64 6, type 101 4, type 108 5, type 121 1, type 124 1, type 126 4, type 135 14, type 141 5, type 145 2, type 154 8, type 170 6, type 174 1, type 178 3, type 179 26, type 182 4, type 183 1, type 184 1.

INTERNATIONAL NOTES

Smallpox surveillance (W.E.R. 16 March 1978)

As global certification of smallpox eradication progresses, laboratory diagnosis of smallpox suspects has become extremely important since it gives the objective confirmation of whether the disease is smallpox or not. A total of 4577 specimens were submitted

in 1978 to two WHO collaborating Centres from 35 countries in Africa and Asia. Since the eradication programme first began, this was the first time that not a single specimen from these geographical areas was positive for variola virus.

The specimens arrive at the Smallpox Eradication Unit, WHO, Geneva, at a rate of about 90 per week but several hundred may arrive on a single day. Following registration the specimens are sent on the first available flight to a WHO Collaborating Centre. In the laboratory each specimen is individually prepared for electron microscopy (EM) and virus culture. The entire workbench must be decontaminated between the testing of individual specimens, and consequently the whole procedure is very exacting and time consuming.

If a specimen is herpes virus positive on EM, a culture may not be done but EM negatives and poxvirus positives are all cultured. It is extremely rare that an EM negative specimen has been culture positive but no chances can be taken.

The basis for the collection of specimens from patients is:

(1) A suspected case of smallpox.
(2) Any death from chickenpox.
(3) Those hospitalized with chickenpox.
(4) Severe or atypical chickenpox, including those having lesions on palms of hands and/or soles of feet.
(5) One specimen from a typical outbreak (two or more cases) of chickenpox, stressing collection from unvaccinated persons.
(6) Other "rash with fever" cases where smallpox cannot be excluded on clinical or epidemiological grounds.
(7) Suspected monkeypox, generalized vaccinia, camelpox, goatpox, etc. in humans.

In using these criteria for taking specimens, field staff also try to have a wide geographical coverage in preference to a large number of specimens from the same area. Nomads and rural populations are given priority.

These intensified activities for laboratory diagnosis will continue until the Global Commission has certified smallpox eradication currently expected at the end of 1979.

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REPORTING PERIOD - 22-3-79 . 4-4-79 BULLETIN NUMBER . 79/7

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES-CONTINUED

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	PANC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
1101 POLIOVIRUS TYPE 1								2	2
1102 POLIOVIRUS TYPE 2								2	2
1104 POLIOVIRUS-VACCINAL STRAIN					2				2
1200 MUMPS VIRUS	1			4				1	6
1300 HERPES VIRUS GROUP-NOT TYPED	2					5			7
1301 HERPES SIMPLEX VIRUS-NOT TYPED	8			2	3			25	38
1303 VARICELLA-ZOSTER VIRUS	2					1			3
1306 HERPES SIMPLEX TYPE 1	5			11		8			24
1307 HERPES SIMPLEX TYPE 2	48			18		8			74
1399 HERPES VIRUS TYPING PENDING				1					1
1401 COXIELLA BURNETI	10			1		6			17
1502 PICORNA VIRUS-NOT TYPED								2	2
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)	2								2
1521 MEASLES VIRUS	3			4		1		1	9
1522 RUBELLA VIRUS				2		2		1	5
1532 HEPATITIS B ANTIGEN	2			24		12		12	50
1541 CHLAMYDIA A - TRIC TYPE						2		39	41
1556 CMV - CYTOMEGALOVIRUS	3			7	6	2		2	25
1562 REOVIRUS (ALL TYPES)						1			1
1564 ROTAVIRUS	1			2					3
1571 ENTEROVIRUS TYPE 71 (BRCR)				4					4
1599 ENTEROVIRUS TYPING PENDING					12	4			16
PARVOVIRUS(LIKE)						1			1
Total	141			112	69	99		113	534

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VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMB (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED	3			1		7		1	12
0102 ADENOVIRUS TYPE 2				5		2		2	9
0103 ADENOVIRUS TYPE 3	2			1				2	5
0105 ADENOVIRUS TYPE 5				1	1	1		1	4
0107 ADENOVIRUS TYPE 7				5	3	1		1	10
0119 ADENOVIRUS TYPE 19				1					1
0199 ADENOVIRUS TYPING PENDING					3	5			8
0201 INFLUENZA A VIRUS	4								4
0301 PARAINFLUENZA VIRUS TYPE 1	1			1	20	7		1	30
0302 PARAINFLUENZA VIRUS TYPE 2					1	2			3
0303 PARAINFLUENZA VIRUS TYPE 3					9	4		2	15
0399 PARAINFLUENZA VIRUS TYPING PENDING						4			4
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)								2	2
0500 RHINOVIRUS (ALL TYPES)				3	5	4			12
0600 MYCOPLASMA PNEUMONIAE	20			1		3		5	29
0700 ORNITHOSIS-PSITTACOSIS	3					1			4
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED								1	1
0809 COXSACKIEVIRUS A9				2					2
0902 COXSACKIEVIRUS B2	4								4
0903 COXSACKIEVIRUS B3	3					3			6
0904 COXSACKIEVIRUS B4	3								3
1003 ECHOVIRUS TYPE 3				4					4
1011 ECHOVIRUS TYPE 11								6	6
1014 ECHOVIRUS TYPE 14				1					1
1015 ECHOVIRUS TYPE 15	1								1
1016 ECHOVIRUS TYPE 16						1			1
1018 ECHOVIRUS TYPE 18	1			2				1	4
1019 ECHOVIRUS TYPE 19						1			1
1022 ECHOVIRUS TYPE 22					1			1	2
1030 ECHOVIRUS TYPE 30	4			4	2				10
1099 ECHOVIRUS TYPING PENDING					1				1

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS

VIRUS OR VIRAL ANTIGEN	PA	BL	NA	CS	SK	EY	GR	BR	GE	OT	TOTAL
0100 ADENOVIRUS NOT TYPED	7	4				1					12
0102 ADENOVIRUS TYPE 2	2		6				1				9
0103 ADENOVIRUS TYPE 3	3					2					5
0105 ADENOVIRUS TYPE 5	2		2								4
0107 ADENOVIRUS TYPE 7	6		3			1					10
0119 ADENOVIRUS TYPE 19						1					1
0199 ADENOVIRUS TYPING PENDING	3		4			1					8
0201 INFLUENZA A VIRUS		4									4
0301 PARAINFLUENZA VIRUS TYPE 1			29					1			30
0302 PARAINFLUENZA VIRUS TYPE 2			3								3
0303 PARAINFLUENZA VIRUS TYPE 3		3	10					2			15
0399 PARAINFLUENZA VIRUS TYPING PENDING			4								4
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)		1	1								2
0500 RHINOVIRUS (ALL TYPES)			12								12
0600 MYCOPLASMA PNEUMONIAE		29									29
0700 ORNITHOSIS-PSITTACOSIS		4									4
0800 COXSACKIEVIRUSES GROUP A - NOT TYPED	1										1
0809 COXSACKIEVIRUS A9			2								2
0902 COXSACKIEVIRUS B2		3				1					4
0903 COXSACKIEVIRUS B3	1	4		1							6
0904 COXSACKIEVIRUS B4		3									3
1003 ECHOVIRUS TYPE 3			4								4
1011 ECHOVIRUS TYPE 11	2		2	1			1				6
1014 ECHOVIRUS TYPE 14	1										1
1015 ECHOVIRUS TYPE 15			1								1
1016 ECHOVIRUS TYPE 16			1								1
1018 ECHOVIRUS TYPE 18	1		1	1			1				4
1019 ECHOVIRUS TYPE 19	1										1
1022 ECHOVIRUS TYPE 22			2								2
1030 ECHOVIRUS TYPE 30	4		3	2						1	10
1099 ECHOVIRUS TYPING PENDING			1								1
1101 POLIOVIRUS TYPE 1	1		1								2

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VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS-CONTINUED

VIRUS OR VIRAL ANTIGEN	FA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
1102 POLIOVIRUS TYPE 2	1		1								2
1104 POLIOVIRUS-VACCINAL STRAIN			2								2
1200 MUMPS VIRUS		2	3	2							7
1300 HERPES VIRUS GROUP-NOT TYPED		1	2		4						7
1301 HERPES SIMPLEX VIRUS-NOT TYPED		5	4		15	1			14	1	40
1303 VARICELLA-ZOSTER VIRUS		3									3
1306 HERPES SIMPLEX TYPE 1			8		11	1			4		24
1307 HERPES SIMPLEX TYPE 2	1				3				69	1	74
1399 HERPES VIRUS TYPING PENDING									1		1
1401 COXIELLA BURNETI		17									17
1502 PICORNA VIRUS-NOT TYPED			2								2
1515 CONTAGIOUS PUSTULAR DERMATITIS (ORF VIRUS)					2						2
1521 MEASLES VIRUS	1	7	1	1							10
1522 RUBELLA VIRUS		5									5
1532 HEPATITIS B ANTIGEN		50									50
1541 CHLAMYDIA A - PRIC TYPE						1			40		41
1556 CMV - CYTOMEGALOVIRUS		7	8	2			5		2	1	25
1562 REOVIRUS (ALL TYPES)	1										1
1564 ROTAVIRUS	3										3
1571 ENTEROVIRUS TYPE 71 (BRCR)			4								4
1599 ENTEROVIRUS TYPING PENDING	8		7	1			2				18
PARVOVIRUS	1										1
Total	51	152	134	11	35	10	10	3	130	4	540