

Table 4. Relationships between diagnostic services and field investigations, and kinds of animals - 2 (1980/'81)

Animal	Diagnostic services						Field investigations						Total							
	Lampung		South Sumatra		Bengkulu		West Java		Total		Lampung		South Sumatra		Bengkulu		Total			
	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens	No. of appli-cants	No. of speci-mens		
Cattle	80	167	6	9	2	7			68	183	1,511	1,620	75	94	1	1	1,587	1,715	1,655	1,898
Buffalo	10	13	1	1				11	14	24	28	4	4	3	3		31	35	42	-49
Horses																				
Sheep	2	213					1	1	3	214	60						43	60	46	274
Goats	15	24	1	1	1	1		17	26	7	90						7	90	24	116
Swine	6	16						6	16	5	11		11	27			16	38	22	54
Chickens	22	41	2	9				24	50	106	1,560	3	75				109	1,635	133	1,685
Ducks	3	6						3	6	1	10						1	10	4	16
Dogs	23	23	2	2	12	12		37	37										37	37
Cats	1	1			1	1		2	2										2	2
Monkeys	1	1						1	1										1	1
Rabbits																				
Others	1	1	2	2				3	3										3	3
Total	144	506	14	24	16	21	1	1	175	552	1,697	3,379	93	200	4	4	1,794	3,583	1,969	4,135

Table 5. Relationships between diagnostic services and field investigations, and kinds of animals - 3 (1981/'82)

Animal	Diagnostic services						Field investigations						Total									
	Lampung		South Sumatra		West Java		Total		Lampung		South Sumatra			West Java		Total						
	No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.		No. of appli- cants.	No. of speci- mens.	No. of appli- cants.	No. of speci- mens.					
Cattle	102	560	31	435	11	16	4	34	148	1,045	1,746	2,710	11	140	1	207	1,858	3,057	2,006	4,102		
Buffalo	3	3			1	3	1	1	5	7	6	19					33	39	44	59		
Horses											1	10					1	2	2	11		
Sheep	6	139							6	139	12	485					1	1	19	625		
Goats	12	63							12	63	72	120					6	78	90	189		
Swine	2	4							2	4	7	35						7	45	9	49	
Chickens	84	294	2	3	2	2			88	299	170	3,946	3	50			173	4,006	261	4,305		
Ducks	1	2							1	2	27	261					27	261	28	263		
Dogs	68	68	17	17	110	110			195	195									195	195		
Cats	4	4			3	3			7	7									7	7		
Monkeys	3	3							3	3									3	3		
Rabbits	8	15							8	15									8	15		
Others	4	22			1	1			5	23									5	23		
Total	297	1,177	50	455	128	135	5	35	480	1,802	2,041	7,606	114	190	1	207	41	41	2,197	8,044	2,679	9,846

Table 6. Number of specimens submitted to and collected by DIC

Kinds of specimens		Dead & live animals	Heads	Brains	Organs	Blood	Blood smears	Feces	Others	Total
Jan. 1979/'80	Diagnostic service	88			65	133	100	153		539
	Field investigation	122			13	2,528	1,590	1,206	2	5,461
	Total	210			78	2,261	1,690	1,359	2	6,000
1980/'81	Diagnostic service	76	2	21	54	142	173	335	22	825
	Field investigation	28			6	3,307	2,973	1,884	11	8,209
	Total	104	2	21	60	3,449	3,146	2,219	33	9,034
1981/'82	Diagnostic service	210	38	141	102	1,148	226	290	20	2,175
	Field investigation	40			1	7,534	7,120	3,907	10	18,612
	Total	250	38	141	103	8,682	7,346	4,197	30	20,787

Table 7. Relationships between kinds of specimens and animals

Period	Kinds of specimens	Cattle	Buffalo	Horses	Sheep	Goats	Swine	Chickens	Ducks	Dogs	Cats	Monkeys	Rabbits	Others	Total	
Jan. 1979/'80	Dead & live animals	5	1				6	176		4			4	14	210	
	Heads															
	Brains															
	Organs	60	1					5		10	1			1	78	
	Blood	1,451	1			17	14	1,031							2,514	
	Blood smears	1,332	1			17	14	326							1,690	
	Feces	1,257	1			14	23	51		13					1,359	
	Others	1				2		146							149	
	Total	4,106	5			50	57	1,735		27	1		4	15	6,000	
	Dead & live animals	11		2			10	59	6	15					1	104
1980/'81	Heads									1	1				2	
	Brains									19	1				21	
	Organs	33	4	1	9	1	1	10					2		60	
	Blood	1,435	37	49	97	31	1,489	10	1						3,449	
	Blood smears	1,828	45	58	92	28	1,085	10							3,146	
	Feces	1,638	28	238	66	20	217	10	1			1			2,219	
	Others	6	1	2	20		3					1			33	
	Total	5,251	115	350	285	90	2,863	36	37	2	2	2	3	3	9,034	
	Dead & live animals	17	1	4	8	4	4	160	3	19			12	22	250	
	1981/'82	Heads									36	2				38
Brains		1								133	4	2		1	141	
Organs		94	2		2			5							103	
Blood		3,928	52	11	157	166	19	4,089	260						8,682	
Blood smears		3,090	55	11	156	169	44	3,560	260		1				7,346	
Feces		2,954	50	5	612	144	15	382	25	6	1	1	2		4,197	
Others		15	2	2	3			1	3	2	1		1		30	
Total		10,099	162	27	931	492	82	8,197	551	196	9	9	3	15	23	20,787

Table 8. Results of diagnose on organs and dead and live animals - cattle and buffalo

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80 Dead & live animals (DLA)		1980/'81		1981/'82		Total
			DLA	Organs	DLA	Organs	DLA	Organs	
Infectious diseases		Rama Deva disease	1/1 *1	2/2	3/3	2/2	2/2	1/1	9/9
		Hemorrhagic septicemia					(1/1) *2		(1/1)
12	10.2	Anaplasmosis	1/1						1/1
		Babesiosis		1/1					1/1
Parasitic diseases		Hemonchiasis		1/1	1/1	3/3			4/4
		Lungworm disease				1/1			1/1
7	5.9	Ascariasis		1/1					1/1
		Fasciolasis	1/1						1/1
Diseases of alimentary organ and liver		Stomatitis ulcerosa					2/2		2/2
		Typanitis acuta		1/1					2/2
21	17.8	Enteritis catarhalis			1/1				5/5
		Enteritis hemorrhagica		1/1		4/4			5/5
Diseases of respiratory organs		Fatty liver					2/2		2/2
		Liver cirrhosis		1/1					1/1
18	15.3	Multiple liver necrosis					4/4		4/4
		Pneumonia lobaris	1/1						2/2
Nutritional disorder		Pneumonia bronchialis		1/1		2/2	4/4		7/7
		Pneumonia purulenta				1/1	6/6		7/7
5	4.2	Pneumonia interstitialis				1/1			1/1
		Pneumonia haemorrhagica					1/1		1/1
Others		Malnutritional cachexia		4/2		2/2	5/1		11/5
		Pericarditis fibrinoza				(1/1)			(1/1)
		Hemorrhagic diathesis				(1/1) 3/3	1/1		(1/1) 4/4
		Nephritis interstitialis					2/2		2/2
		Death due to difficult-birth				1/1			1/1

Table 8. Continued

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/180 Dead & live animals (DLA)	1980/81		1981/82		Total
				DLA	Organs	DLA	Organs	
		Myositis necrotica	1/1	1/1				1/1
		Pappilomatosis	1/1	2/2		1/1		4/4
15	12.7	Dermatitis chronica		1/1				1/1
40	33.9	Undiagnosable		5/5	3/3	(1/1)	31/31	(1/1) 39/39
118	100	Total	5/5	12/10 (2/2)	15/15	23/23	(1/1) 65/61	(4/4) 120/114

Comments: *1 Numerator means number of specimens, and denominator number of applicants, respectively.

*2 () means buffalo.

Table 9. Results of diagnoses on organs and dead and live animals - Deer

Name of disease and pathologic states	Jan. 1979/80		1980/81		1981/82		Total
	DLA	Organs	DLA	Organs	DLA	Organs	
Pneumonia parasitica		1/1					1/1
Pneumonia bronchialis		1/1					1/1
Total		2/2					2/2

Comments: Numerator means number of specimens, and denominator number of applicants, respectively.

Table 10. Results of diagnoses on organs and dead and live animals - sheep and goats

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80 Dead and live animals (DLA)		1980/'81		1981/'82		Total
			DLA	Organs	DLA	Organs	DLA	Organs	
Infectious diseases									
		Rabies		1/1 ^{*1}					1/1
		Contagious pustular dermatitis	1/1	(1/1)			(1/1) ^{*2}	(1/1)	1/1
		Bluetongue-like disease						(1/1)	
5	29.4	Contagious kerato conjunctivitis	1/1						1/1
Parasitic diseases									
3	17.6	Haemonchiasis	(1/1)	1/1		1/1		(1/1)	2/2
		Pneumonia catarrhalis		(1/1)				(1/1)	
		Pneumonia bronchialis		2/1					2/1
		Pneumonia purulenta		3/2					3/2
		Malnutritional cachexia							2/2
		Peritonitis serofibrinosa					2/2		(1/1)
		Pyometra				(1/1)			2/1
9	52.9	Pappiloma		1/1		2/1			1/1
17	100	Total	2/2	(1/1)	7/5	(1/1)	5/4	(1/1)	(5/5)
									15/12

Comments: *1 numerator means number of specimens, and denominator number of applicants, respectively.

**2 () means sheep.

Table 11. Results of diagnoses on organs and dead and live animals - swine

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80		1980/'81		1981/'82	
			Dead and live animals	Organs	Dead and live animals	Organs	Dead and live animals	Organs
Infectious diseases								
5	41.7	Hemorrhagic septicemia (Swine pasteurellosis) Coli bacteriosis	1/1		7/3		3/1	10/4 1/1
Parasitic diseases								
4	33.3	Ascariasis Swine kidney worm disease Milky spot of liver	2/2			1/1		2/2 1/1 1/1
Others								
3	25.0	Pleure-peritonitis serofibrinoza Death due to hernia Death due to malnutrition	1/1				1/1	1/1 1/1 2/1
12	100	Total	6/5		8/4		1/1	4/2 19/12

Comments: * Numerator means number of specimens and denominator number of applicants, respectively.

Table 12. Results of diagnoses on organs, and dead and live animals - chickens and ducks

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80 Dead and live animals (DLA)		1980/'81		1981/'82		Total
			DLA	Organs	DLA	Organs	DLA	Organs	
		Newcastle disease	157/12*1		7/4		43/11		207/27
		Avian lymphoid leukosis	2/2		7/4		9/5		18/11
		Marek's disease	1/1		9/3		5/2		15/6
		Fowl pox	1/1			2/1			3/2
		Infectious bursal disease						1/1	1/1
		Coli bacteriosis					1/1		1/1
		Chronic respiratory disease			11/5		9/5		20/10
		Pullorum disease			1/1				1/1
		Leucocytozoonosis			3/1		1/1		4/2
68	58.6	Coccidiosis	11/4		5/1		1/1	1/1	18/7
		Parasitic disease			4/2		13/5		18/8
9	7.8	Tapeworm disease					1/1		1/1
		Diseases of alimentary							
		Enteritis catarrhalis			5/2		5/3		10/5
		Enteritis haemorrhagica et necrotica					1/1		1/1
		Fatty liver			(3/1)*2				(3/1)
9	7.8	Hepatitis			(1/1)		(2/1)		(3/2)
		Disease of respiratory organ			(2/1) 6/1		2/2		(2/1) 3/3
4	3.4	Peritonitis serofibrinosa			1/1		2/1		3/2

Table 12. Continued

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80 Dead and live animals (DLA)		1980/'81		1981/'82		Total
			DLA	Organs	DLA	Organs	DLA	Organs	
		Rupture of ovarian follicle and peritonitis					2/1		2/1
		Hemorrhagic diathesis	1/1						1/1
		Myositis purulenta				3/1			3/1
Others		Arthritis purulenta				1/1			1/1
		Abscess of eye		1/1					1/1
		Malnutrition		5/3					5/3
		Gout					2/2		2/2
		Cannibalism					2/2		2/2
		Feed poisoning					14/4		14/4
		Hepatoma					1/1		1/1
		Adenocarcinoma in peritoneal cavity					1/1		1/1
21	18.1	Sarcoma		1/1					1/1
5	4.3	Could not diagnose		2/2			(1/1) 2/2		(1/1) 4/4
116	100	Total	176/22	(6/3) 66/32	2/1	(3/2) 121/54	2/2	(9/5) 367/111	

Comments: *1 Numerator means number of specimens, and denominator number of applicants, respectively.

*2 () means ducks.

Table 13. Results of diagnoses on organs, and dead and live animals - dogs and cats.

No. of applicants	Diagnosis rate (%)	Name of disease and pathognomonic signs	Jan. 1979/'80 Dead and live animals (DLA)		1980/'81		1981/'82		Total
			DLA	Organs	DLA	Organs	DLA	Organs	
		Infectious disease		7	4	5	(3)*	119	(3) 140
144	94.1	Rabies							
		Leptospirosis				1			1
		Parasitic diseases							
		Anchylostomiasis		1		2			3
		Tapeworm disease				2			2
		Ascariasis		1					1
		Trichuriasis		1					1
		Paragonimiasis		1					1
9	5.9	Demodex. Sarcoptes infection						1	1
153	100	Total	11	4	5	10	(3)	120	(3) 150

Comments: * () means cats.

Table 14. Results of Brucella rapid agglutination test in cattle and buffalo

Period	Total No. of cattle examined	Positive No. of cattle
Jan. 1979/'80	1,451	15

Period	No. of cattle	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1980/'81	Total No.	145	119	47	99	106	271	104	(10)* 191	96	78	156	98	(10) 1,510
	Positive No.													(0) 0
1981/'82	Total No.	91	284	338	160	83	100	496	(4) 562	(4) 313	453	265	(3) 156	(39) 3,301
	Positive No.		8		1			1			4	2	26	(0) 42

Comments: * () means buffalo.

Table 15. Results of Brucella rapid agglutination test in sheep and goats

Period	Sheep		Goats	
	Total No. examined	Positive No.	Total No. examined	Positive No.
1980/'81			46	0
1981/'82	39	0	93	1

Table 16. Final decision of cattle and goats which were positive in Brucella rapid agglutination test

Date examined	Animals	No. of positive cases in rat	Decision (T.A.T. *1 and C.F.T. *2)			
			Diseased animals (head)	Suspected animals (head)	Healthy animals (head)	Unknown (head)
May, 1981	Imported cattle	8	1	3	2	2
July, 1981	"	1			1	
Oct., 1981	"	1	1			
Jan., 1982	"	4		1	3	
Feb., 1982	"	2	1	1		
"	"	25	17	2	6	
Mar., 1982	native cattle	1			1	
	goat	1			1	

Comments: *1 T.A.T.: Tube agglutination test.
 *2 C.F.T.: Complement fixation test.

Table 17. Results of Salmonella pullorum and Mycoplasma gallisepticum rapid agglutination tests

Period	Total No. of chickens examined	No. of positive cases	
		<u>S. pullorum</u>	<u>M. gallisepticum</u>
Jan. 1979/'80	1,031	72	63

Period	Number of chickens												Total
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
1980/'81													
Total No. examined	22	52	57	103	130	40	235	53	370	297	120	80	1,559
Positive cases				1					1				2
<u>S. pullorum</u>													
<u>M. gallisepticum</u>	6	5	37	14	27	18	33			19	41	30	230
Total No. examined	140	410	627	66	604	40	246	459	327	170	668	221	3,978
1981/'82													
Positive cases		22			3			3	25	9	47	26	135
<u>S. pullorum</u>													
<u>M. gallisepticum</u>	31	58	127	7	25	6	113	82	170	138	668	214	1,639

Table 18. Investigations of antibody against Newcastle disease virus by use of hemoagglutination inhibition (H.I) test.

Period	Districts of investigation in Lampung Province														
	North Lampung			Central Lampung			South Lampung			T. Karang T. Betung			I. Chicken *1 Farm		
Year Month	No. of Titer of appli HI anti-cants body *2			No. of Titer of appli HI anti-cants body			No. of Titer of appli HI anti-cants body			No. of Titer of appli HI anti-cants body			No. of Titer of appli antibody cants		
	*3	≤ 64	> 64	≤ 64	> 64	≤ 64	> 64	≤ 64	> 64	≤ 64	> 64	≤ 64	> 64	≤ 64	> 64
Sep.							3	0	3						
Oct.				5	1	4	4	0	4						
Nov.															
Dec.							3	2	1	3	3	0			
1980 Jan.							2	0	2						
Feb.				2	0	2	3	1	2						
Mar.							3	2	1	7	6	1			
Apr.										3	2	1			
May										2	2	0			
Jun.															
Jul.				7	4	3									
Aug.							5	3	3						
Sep.										4	4	0			
Oct.										14	9	5			
Nov.										1	1	0			
Dec.	5	4	1	13	8	5	8	3	5	9	7	2			
1981 Jan.				19	11	8							4	2	2
Feb.										4	1	3	5	2	3
Mar.													3	2	1
Apr.							6	1	5	3	3	0	5	1	4
May							11	5	6	7	2	5			
Jun.							9	6	3				8	0	8
Jul.							11	7	4	9	5	4	5	2	3
Aug.				1	1	0				11	10	1	1	0	1
Sep.	3	2	1												
Oct.				12	11	1	6	3	2	2	1	1			
Nov.										6	5	1	3	3	0
Dec.	3	3	0	6	3	3	12	10	2						
1982 Jan.	6	4	2										6	4	2
Feb.	1	0	1				16	8	8	11	3	8	5	3	2
Mar.	4	2	2	9	6	3							2	1	1

*1 Big chicken farm where 20,000 chicken have been raised.

*2 GM value.

*3 Serum of 10 chickens were taken in one applicant.

Table 19. Serum protein content in cattle

Period	Number of cattle	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1980/'81	Total No. examined	139	113	113	79	106	189	85	79	61	63	94	71	1,192
	No. of cattle showing abnormal value	20	22	6	10	16	16	8	13	15	9	13	2	150
1981/'82	Total No. examined	133	226	305	129	134	72	133	170	-	-	-	-	1,302
	No. of cattle showing abnormal value	15	11	8	8	4	3	34	-	-	-	-	-	83

Comments: Abnormal value of serum protein content is less than 6.0% in this instance.

Table 20. Hematocrit value in blood of cattle

Period	Number of cattle	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1980/'81	Total No. examined	137	99	109	59	75	256	77	93	57	56	24	66	1,108
	No. of cattle showing abnormal value	8	3	8	6	3	7	3	8	4	3	1	1	55
1981/'82	Total No. examined	99	220	111	42	147	72	41	-	-	-	-	-	732
	No. of cattle showing abnormal value	2	7	4	5	20	1	4	-	-	-	-	-	43

Comments: Abnormal value of Hematocrit is less than 20% in this instance.

Table 21. Examination of protozoa in blood smears of cattle and buffalo

Period	Total No. of cattle examined	No. of cattle positive in protozoa																
		Trypanosoma sp.	Theileria sp.	Babesia sp.	Anaplasma sp.	Jan.	Feb.	Mar.	Total	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Jan. 1979/'80	1,332 (1)*	9 (0)	58 (0)	10 (0)	3 (0)													

Comments: () means buffalo.

Period	No. of cattle examined	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
	Total No. examined	182	122	125	117	145	(13) 343	200	(11) 222	162	110	166	(5) 139	(24) 2,033
1980/'81	No. positive in protozoa			2	5	1			(1) 2	2		3	(1)	(2) 15
	Trypanosoma sp.													
	Theileria sp.	6	1	9	4	4	(2) 11	5	5	3	1	30	2	(2) 77
	Babesia sp.													(0) 0
	Anaplasma sp.				1		6	5	3					0 15
	Total No. examined	162	313	187	356	(8) 144	99	196	489	308	439	278	(33) 159	(41) 3,130
1981/'82	No. positive in protozoa						1	2	3				3	(0) 9
	Trypanosoma sp.													
	Theileria sp.	1	24	1	1	1	1	31	6	7	5	7	7	(0) 84
	Babesia sp.												2	(0) 2
	Anaplasma sp.		6			(3) 3		1			7	1	1	(3) 19

Table 22. Examination of protozoa in blood smears of chickens

Period	Total No. of chickens examined	No. of chickens positive in protozoa		Jan.	Feb.	Mar.	Total							
		L. caulleryi	L. sabrasezi											
Jan. 1979/'80	326	3	0											
<hr/>														
Period	Number of chickens	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
<hr/>														
1980/'81	Total No. examined	31	41	31	85	72	22	232	57	172	244	124	85	1,196
	No. positive in protozoa										1		1	4
		L. caulleryi	2											
	L. sabrasezi								3		38	8		49
	Trypanosoma sp.													0
<hr/>														
	Total No. examined	138	222	463	86	452	302	238	393	269	158	682	244	3,647
<hr/>														
1981/'82	No. positive in protozoa													
		L. caulleryi	1	2	12		8	1	3	7	5	4	3	46
		L. sabrasezi								4	3	17	3	37
	Trypanosoma sp.								1					1

Table 23. Detection of helminth by examination of parasitic eggs contained in feces of cattle

Period	Total No. of cattle examined	Paramphistomum sp.	Fasciola sp.	Bunostomum sp.	Cooperia sp.	Oesophagostomum sp.	Strongyloides sp.	Trichuris sp.
Jan. 1979/'80	1,257	313	146	47	129	17	4	28

Period	Number of cattle	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total	
Total No. examined		107	105	106	111	71	245	189	192	107	82	69	87	1,471	
1980/'81	No. positive in parasitic eggs	28	10	8	15	2	25	16	7	7	14	6	6	144	
	Paramphistomum sp.	8	3	6	12	3	8	9	12	3	7	1	5	77	
	Fasciola sp.	3	2	2	10	5	8	10	7	7	4	3	2	63	
	Bunostomum sp.	26	13	7	15	7	10	5	16	17	7	8	6	137	
	Cooperia sp.	5	5	1	8		1	1	1	26	9	7	7	76	
	Oesophagostomum sp.														
	Strongyloides sp.								1	1	1	1	1	5	
	Trichuris sp.	6	2	2	7	2	3	2	2	3	6	4	4	43	
	Haemonchus sp.										2			1	3
	Nematodirus sp.														1
	Ascaris sp.								4		2	1	3	2	12
	Synsalamus sp.							1		1					2
	Trichostrongylus sp.														1

Table 23. Continued

Period	Number of cattle	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
	Total No. examined	150	309	338	126	191	65	157	443	312	380	287	117	2,860
1981/'82	No. positive in parasitic eggs	4	35	15	7		1	3					6	71
	Paramphistomum sp.													
	Fasciola sp.	6	11	5		9		4	23	106	84	28	39	315
	Bunostomum sp.	5	5	15	1	2	1	7	6	1	14	11	3	71
	Cooperia sp.	31	43	55	28	32	10	10	58	1	84	40	26	418
	Oesophgostomum sp.	9	105	34	32	24	6	12	47	22	71	43	22	427
	Strongyloides sp.	3	14	2	4	7		2	7		3	7		49
	Trichuris sp.	7	8	2			1	5		1	1			25
	Haemonchus sp.					24			8	1		1		34
	Nematodirus sp.		5	1	6	1	1		5	1		1		21
	Ascaris sp.	1	1	1	4								1	8
	Syngamus sp.													
	Trichostrongylus sp.													

Table 24. Detection of eggs of Ascaridia galli in feces of chickens

Period	Jan. 1979/'80	Total No. of chickens examined	51	No. of chickens positive in parasitic eggs	51									
Period	Number of chickens	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
1980/'81	Total No. examined	4	4	23	7	8	2	55	33	21	60	8	5	230
	No. positive in parasitic eggs		1	7	6	2	43	12	8	4				83
1981/'82	Total No. examined	13	38	48	66	47	8	16	41	22	13	73	23	408
	No. positive in parasitic eggs	5	21	29	16	4	13	6	43	3	7	147		147

Table 25. Viruses identified by virology section

Kind of viruses	Kind of animals	Virus isolation	FAT
	Goats		+
Rabies virus	Dogs		+
	Cats		+
	Monkeys		+
Newcastle disease virus	Chickens	+	+
Avian bronchitis virus	Chickens		+

Comments: *FAT Fluorescent antibody technique.

Table 26. Viral antigens and antibodies detected by virology section of DIC

Viral disease	Serological test	Kind of animals			
		Cattle	Buffalo	Swine	Chickens
Japanese encephalitis	HI test	+	+	+	
Akabane disease	"	+			
Parainfluenza type 3	"	+			
Newcastle disease	HI test				+
	HA test				+

Comments: HI test Hemoagglutination inhibition test
 HA test Hemoagglutination test

Table 27. Bacteria and fungus identified by Bacteriology Section of DIC

Name of Bacteria isolated	Cattle	Buffalo	Sheep	Goats	Swine	Chickens	Dogs	Rabbits	Others
Bacteroides sp.	+								
Neisseria sp.				+					
Branhamella sp.	+								
Acinetobacter sp.				+					
Bordetella sp.	+	+							
" bronchiseptica				+					
Chromobacterium lividum					+				
Alcaligenes sp.	+	+				+		+	
Flavobacterium sp.	+					+			
Pseudomonas sp.		+			+				
" diminuta						+			
" aeruginosa						+			
Pasteurella multocida	+	+			+				
" haemolytica	+								
Chromobacterium violaceum									+
Escherichia coli	+	+	+	+	+	+	+	+	
E. coli (OK I 026 : K60)	+								
" (OK I 086a: K61)	+		+						
" (OK I 0127a: K63)	+								
" (OK II 0 146 : K89)	+								
" (OK II 0 112ac : K66)	+								
" (OK III 0 125 ^a _b : K70)						+			
" (OK III 0 143 : KX1)	+								
" (OK III 0 44 : K74)	+			+		+		+	
Salmonella sp.	+								
" Typhi	+								
Shigella sp.	+					+		+	
" sonnei	+								
Proteus sp.	+			+	+	+		+	
" mirabilis				+		+			
Klebsiella sp.				+					

Gram-negative bacteria

Table 27. Continued

Name of Bacteria isolated		Cattle	Buffalo	Sheep	Goats	Swine	Chickens	Dogs	Rabbits	Others
Gram-negative bacteria	<i>Klebsiella edwardsii</i>					+	+			
	" <i>aerogenes</i>	+						+		
	" <i>ozaenae</i>				+					
	<i>Enterobacter</i> sp.	+				+				
	" <i>aerogenes</i>						+			
	<i>Citrobacter</i> sp.	+					+	+		
	" <i>koseri</i>			+	+					
	<i>Yersinia</i> sp.	+				+				
	<i>Serratia</i> sp.	+								
	" <i>rubidaea</i>						+			
	" <i>marcescens</i>	+								
	<i>Edwardsiella tarda</i>	+							+	
	<i>Morganella morgani</i>	+								
<i>Eikenella</i> sp.	+									
<i>Streptobacillus</i> sp.	+									
Gram-positive bacteria	<i>Micrococcus</i> sp.	+	+		+		+	+		
	" <i>luteus</i>				+					
	<i>Staphylococcus</i> sp.	+			+	+	+	+	+	+
	" <i>aureus</i>	+							+	
	<i>Streptococcus</i> sp.						+			
	" <i>pneumoniae</i>	+					+			
	<i>Kurthia</i> sp.	+								+
	<i>Corynebacterium</i> sp.	+								
	" <i>pyogenes</i>	+								
	" <i>bovis</i>	+								
	<i>Lactobacillus</i> sp.	+								
	<i>Bacillus</i> sp.	+	+		+	+	+	+	+	+
	" <i>subtilis</i>	+								+
" <i>cereus</i>	+							+		
<i>Diplococcus</i> sp.	+	+	+	+	+	+	+	+	+	
Fungus										
<i>Aspergillus</i> sp.	+									

Table 28. Bacterial antibodies detected by Bacteriology Section of DIC

Bacterial disease	Serological test	Kind of animal		
		Cattle	Goats	Chickens
Brucellosis	CFT ^{*1}	+		
	TAT ^{*2}	+		
	RAT ^{*3}	+	+	
Pullorum disease	"			+
M. gallisepticum infection	"			+

Comments: *1 CFT: Complement fixation test
 *2 TAT: Tube agglutination test
 *3 RAT: Rapid agglutination test

Table 29. Protozoa and endo- and ecto-parasites identified by Parasitology Section of DIC

Name of protozoa and ecto- and endo- parasite		Cattle	Buffalo	Horse	Sheep	Goats	Swine	Chickens	Dogs	Monkeys	Rabbits
Protozoa	Trypanosoma sp.		+					+	+		
	" evansi	+									
	Anaplasma marginale	+									
	Theileria sp.	+	+								
	Babesia sp.	+									
	Leucocytozoon caulleryi							+			
	" sabrasezi							+			
Eimeria sp.							+			+	
Sarcocystis sp.	+			+							
Endo-parasites	Bunostomum sp.	+									
	Cooperia sp.	+									
	Oesophagostomum sp.	+									
	Nematodirus sp.	+									
	Trichuris sp.	+									
	Ascaris vitulorum	+									
	" lumbricoides							+			
	" galli								+		
	Strongylus vulgaris				+						
	Haemonchus contortus					+	+				
	" placei	+									
	Strongyloides sp.					+	+				
	Ankylostoma sp.										+
	" caninum									+	
	Toxocara canis									+	
	Raillietina sp.								+		
	Paramphistomum servi	+									
	Gastrophylax erumeniver		+								
Stephanurus dentatus								+			
Setaria sp.	+										
Stephanofilaria sp.	+										
Dictiocaulus viviparus	+										

Table 29. Continued

Name of protozoa and ecto- and endo- parasite	Cattle	Buffalo	Horse	Sheep	Goats	Swine	Chickens	Dogs	Monkeys	Rabbits
Dipylidium caninum								+		
Fasciola hepatica	+	+								
Boophilus microphrus	+									
Stomoxys sp.	+									
Tabanus sp.	+									
Musca sp.	+									
Chrysops sp.	+									
Sarcoptes scabiei					+	+			+	
Culicoides sp.							+			

Table 30. Protozoal antibodies detected by Parasitology Section of DIC

Genus of protozoa	Serological test	Kind of animal		
		Cattle	Swine	Chickens
<u>Anaplasma marginale</u>	CFT ^{*1}	+		
Toxoplasma	Ratex AT ^{*2}		+	
<u>Leucocytozoon caulleryi</u>	AGT ^{*3}			+

Comments: *1 CFT : Complement fixation test
 *2 Ratex AT : Ratex agglutination test
 *3 AGT : Agar-gel immunodiffusion test

Table 31. Main pathological changes of Rama Dewa disease occurring in Lampung Province in the period from 1980 to 1982

No. of Bail cattle	Date of autopsy	Sex	Age (Month)	Main pathological changes										Names of village, and subdistrict where Rama Dewa disease occurred
				Erosion and ulcer of ton- gue, palate and pharynx	Erosion and ulcer of upper respi- ratory tract	Proliferation of lymphoid cells				Lung	Kidney			
						Liver	Spleen	Lymph nodes	Lung					
No. 1	23rd, Aug. 1980	F	30	+	++	+++	++	+++	++	++	+			Astomulyo, Central Lampung
No. 2	6th, Oct. 1980	M	6	+++	++	+++	+++	+++	+++	++	++			Sidomulyo, Central Lampung
No. 3	18th, Nov. 1980	M	7	+	-	++	++	++	++	++	+			Rama Gunawan, Central Lampung
No. 4	17th, Dec. 1980	F	48	+	-	+	++	++	+++	+++	+++			Rama Utama, Central Lampung
No. 5	18th, Dec. 1980	F	30	+++	+	++	++	++	++	++	++			Rama Gunawan, Central Lampung
No. 6	7th, May 1981	F	36			++	++	++	+	+	+			Astomulyo, Central Lampung
No. 7	22nd, Jan. 1982	F	24	+	+	++	+	+	-	+	+			Tanjungkarang-Telukbetung
No. 8	1st, Feb. 1982	F	30	+++	++	++	++	++	+	++	++			" "

Comments: F: female M: male

+++: severe

++: moderate

+: slight

-: negative

Table 32. Main pathological changes and bacteriological findings of Swine pasteurellosis occurring in Lampung Province

No. of Swine	Date of Autopsy	Age (Month)	Main pathological changes										Findings of <i>pasteurella multocida</i>					Name of subdistrict attached		
			Erythema	Subcutaneous edema	Edema of pharynx larynx	Pneumonia serofibrinosa	Cogestion & hemorrhage of intestine	Heart blood	Submaxillary lymph node	Spleen	Liver	Kidney	Lung	+++	++	+	-			
No. 1	8th, Jan. 1981	2.5	+++	+++	+	-	++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	Kedaton, South Lampung
No. 2	10th, Jan. 1981	8.0	+++	+++	+++	-	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	Gedong Tataan, South Lampung
No. 3	"	"	+++	+	+	+++	+	+	+	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
No. 4	"	"	+++	+	+	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
No. 5	"	5.0	-	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
No. 6	16th, Jan. 1981	2.0	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
No. 7	2nd, Oct. 1981	"	+	+	+	-	-	-	-	-	+	+	+	+	+	+	+	+	+	Seputih Raman, Central Lampung
No. 8	"	"	+	+	+	-	-	-	-	-	+	+	+	+	+	+	+	+	+	

Comments: +++: severe
 ++: moderate
 +: slight
 -: negative

Table 33. Investigations of Leucocytozoon by use of blood-smear method and agar-gel immunodiffusion test

Name of chicken farm	Date of examination	Total No. examined		No. positive in Leucocytozoon				No. of chickens raised in chicken farm	Subdistricts where chicken farm situate
		BS	Serum	L.c.		L.s.			
				BS	AGT	BS	AGT		
A	2nd, Feb. 1981	40	40	-	-	15	-	375	
B	"	16	16	-	-	2	-	155	Terbanggi Besar, Central Lampung
C	"	38	38	-	-	3	-	380	
D	"	20	20	-	-	4	-	400	
E	"	30	30	-	-	14	-	1,650	
F	2nd, May 1981	98	94	7	15	-	-	945	Natar, South Lampung
G	"	30	30	3	3	-	-	700	Pringsewu, South Lampung
H	"	50	50	-	-	-	-	2,500	T. Karang - T. Betung
I	"	16	30	1	2	-	-	300	Gading Rejo, South Lampung
J	"	25	40	-	14	-	-	480	T. Karang - T. Betung

Comments: BS: blood smear

L.c: Leucocytozoon caulleryi

L.s: Leucocytozoon sabrasesi

AGT: agar-gel immunodiffusion test

Table 34. Occurrence of rabies of animals in region of DIC in the period from August 1979 to March 1982

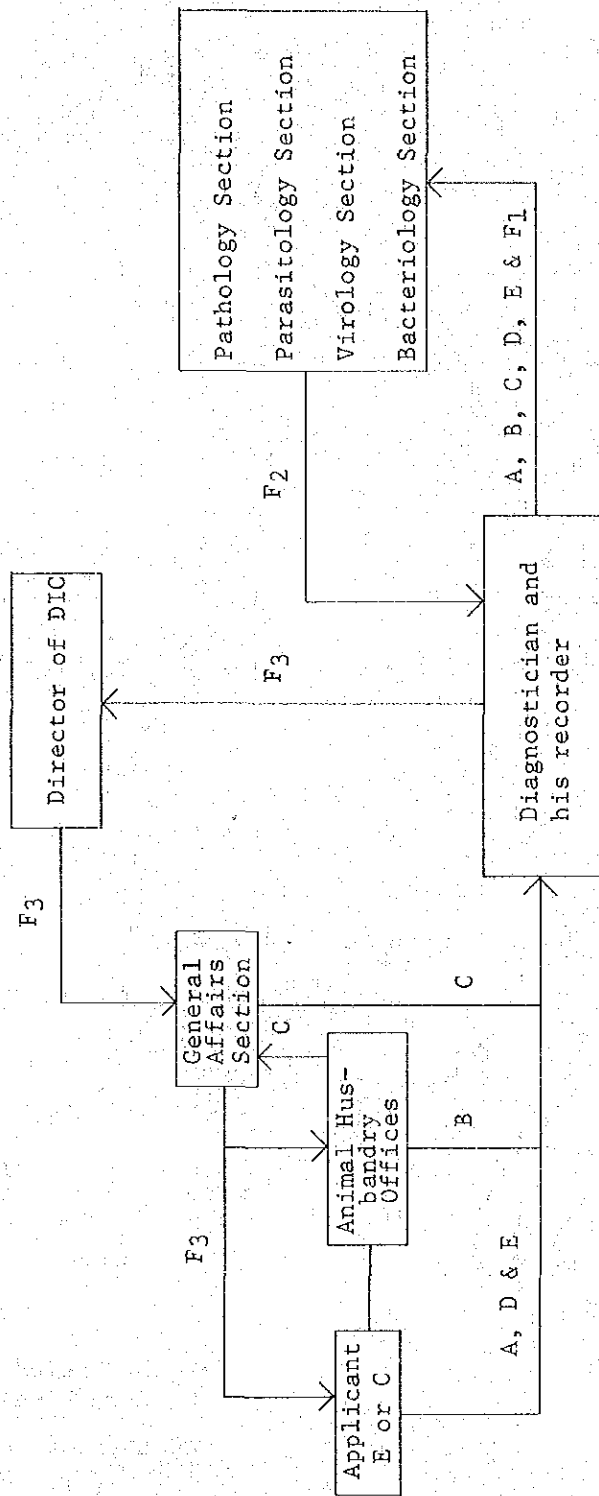
	1979/'80				1980/'81				1981/'82			
	Dogs	Dogs	Cats	Cats	Dogs	Dogs	Cats	Cats	Monkeys	Monkeys	Wild swine	Cattle
	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)	No. exam. pos. (%)
Apr.	1	1	100					10	8	80.0		
May								17	11	64.7	1	0
Jun.								6	4	66.7		
Jul.	1	0	0					17	11	64.7	1	100
Aug.	3	1	33.3	4	1	25.0		9	4	44.4	1	100
Sep.	3	1	33.3	3	0	0		13	8	61.5	3	1
Oct.	1	0	0	4	0	0		16	11	68.8		
Nov.	1	1	100	3	1	33.3		24	17	70.8	1	0
Dec.	3	2	66.7	1	0	0		24	19	79.2		
Jan.	2	1	50.0	5	1	20.0	1	11	10	90.9		
Feb.	2	1	50.0	4	1	25.0		14	9	64.3	1	0
Mar.	1	0	0	9	5	55.6	1	15	12	80.0		
Total	16	7	43.8	35	10	28.6	2	176	124	70.5	6	3
								1	1	100	2	1
								Ratio pos.	186	No. exam.	128	Ratio pos. (%)
								11	28.9		68.8	
Comments: *1 No. exam. ... No. of cases examined; *2 No. pos. ... No. of positive cases; *3 Ratio pos. ... Ratio of positive cases.												

Table 35. Occurrence of rabies of animals in the provinces of Lampung, South Sumatra and Bengkulu

Province	1979/'80			1980/'81			1981/'82		
	No. exam. *1	No. pos. *2	Ratio pos. (%) *3	No. exam.	No. pos.	Ratio pos. (%)	No. exam.	No. pos.	Ratio pos. (%)
Lampung	9	3	33.3	22	6	27.3	56	33	58.9
South Sumatra	4	2	50.0	3	1	33.3	17	11	64.7
Bengkulu	3	2	66.7	13	4	30.8	113	84	74.3

Comments: *1 No. exam. No. of cases examined
 *2 No. pos. No. of cases positive in Rabies
 *3 Ratio pos. Ratio of positive cases

Fig. 1 Scheme of diagnostic services in DIC, Tanjungkarang



- A : Specimens submitted to DIC from applicants.
- B : Specimens submitted to DIC from applicants through Animal Husbandry Offices.
- C : Specimens sent by mail from applicants through Animal Husbandry Offices.
- D : Specimens collected by Survey Team of Animal Husbandry Offices and DIC.
- E : Specimens collected by Survey Team of DIC.

- F1 : Blank Form model F-1.
- F2 : " " model F-2.
- F3 : " " model F-3.

Fig. 2 Subdistricts where Rama Dewa disease occurred in Lampung Province in the period from August 1980 to February 1982

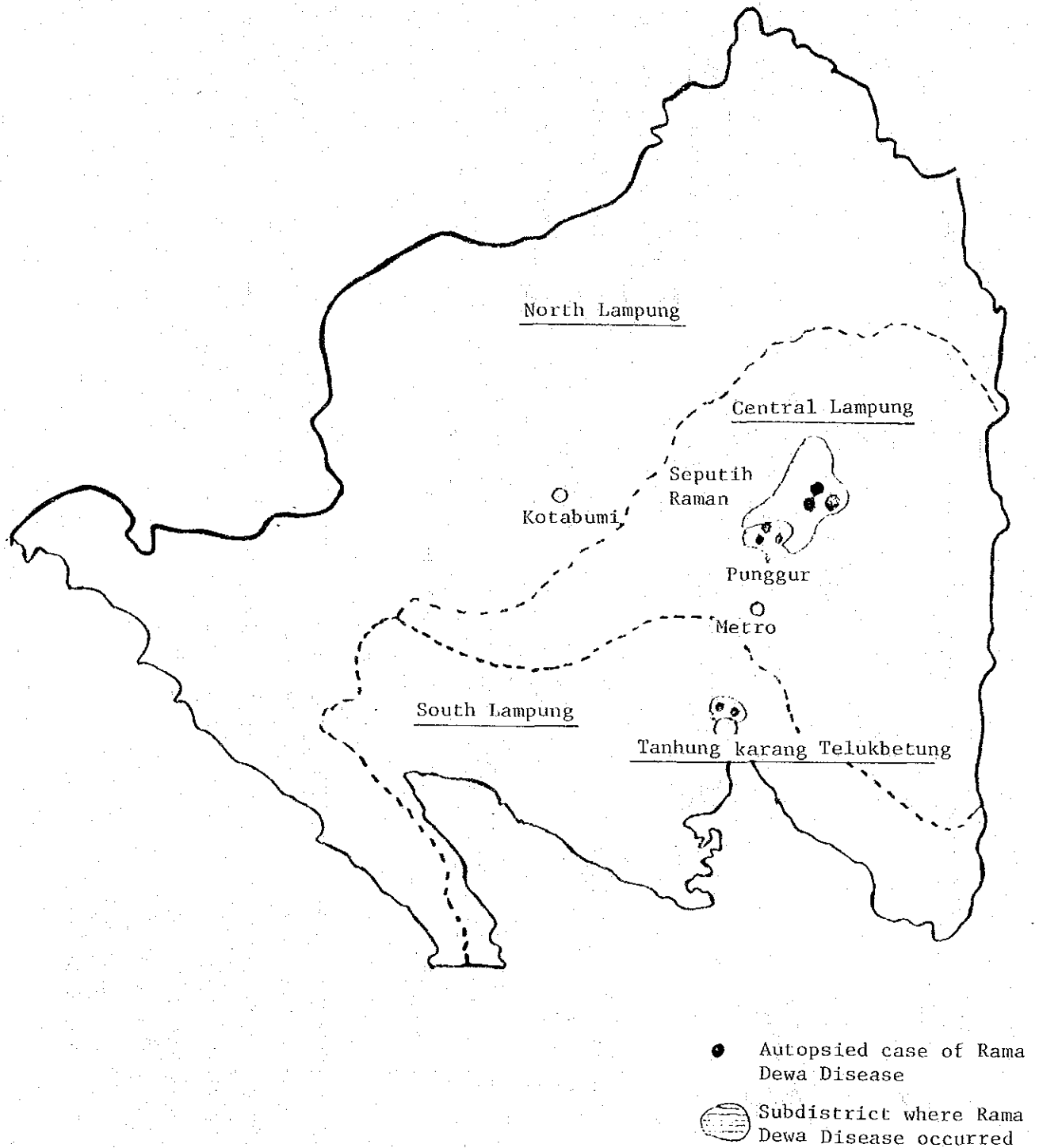
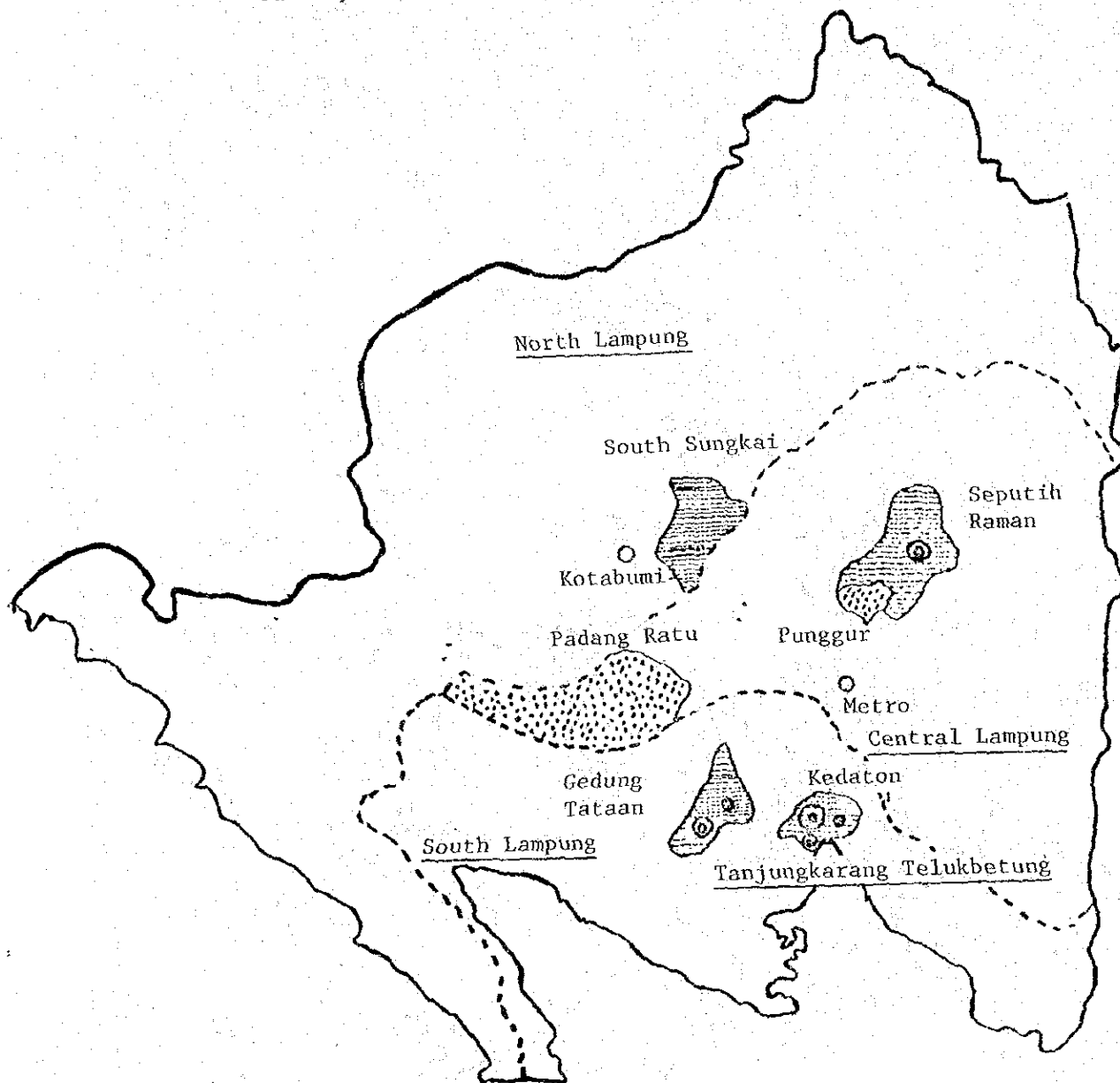


Fig. 3. Subdistricts where hemorrhagic septicemia of cattle and buffalo occurred in Lampung Province in the period from January 1979 to March 1982

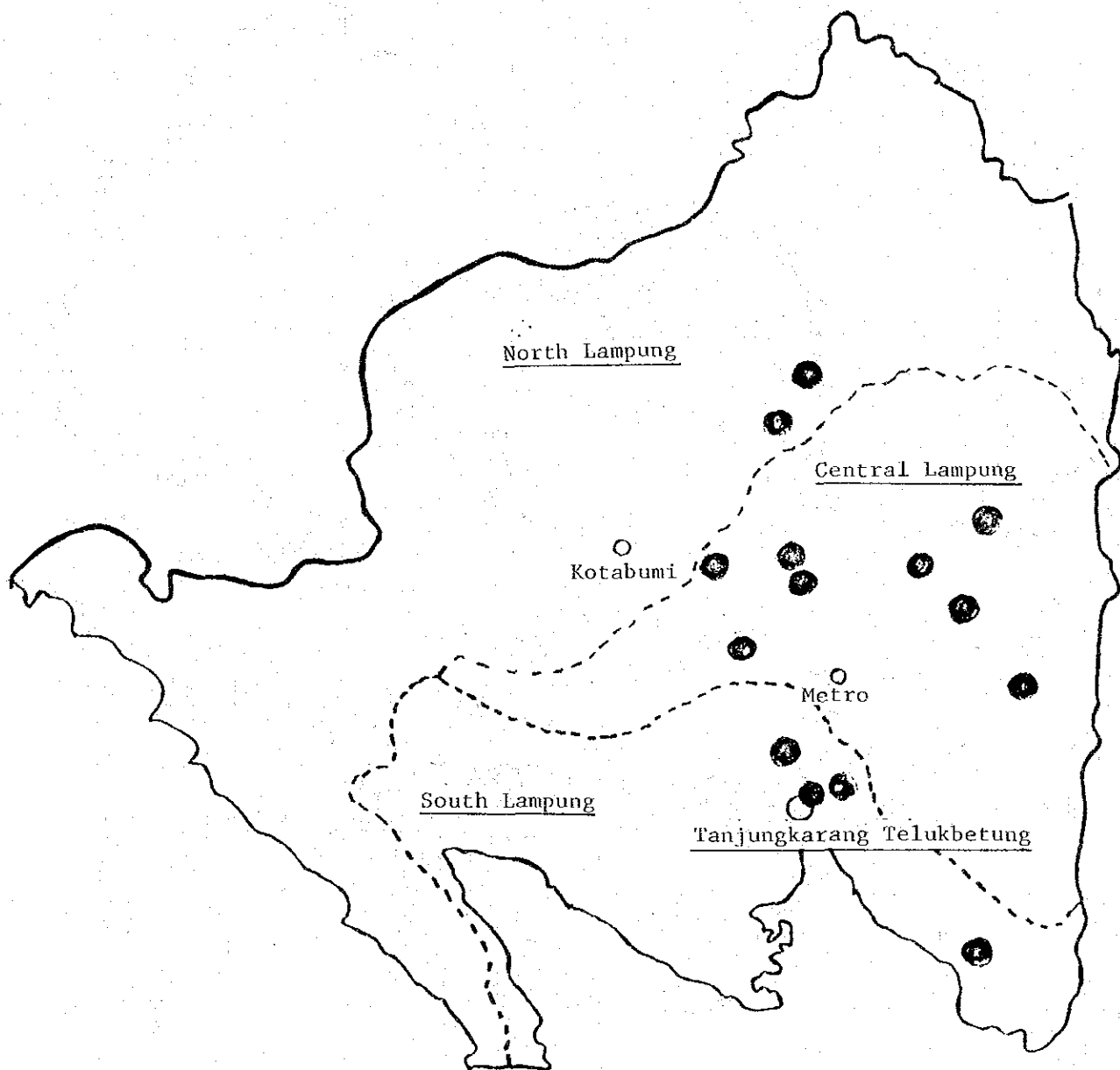


- Buffalo in which Pasteurella multocida was isolated.
- ⊙ Swine in which Pasteurella multocida was isolated.

▨ Subdistricts where hemorrhagic septicemia occurred Cattle, buffalo and swine.

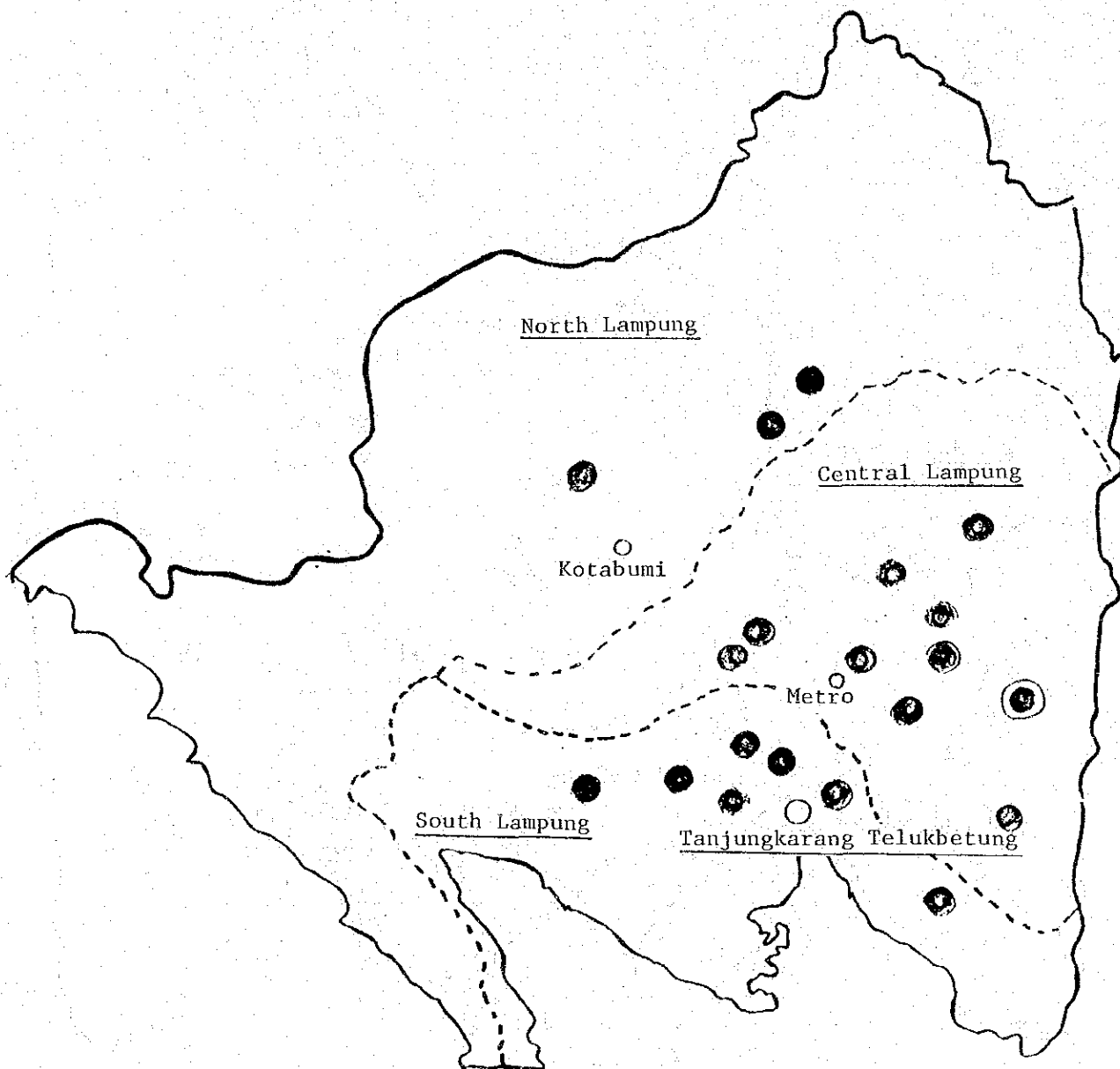
⊙ Swine.

Fig. 4 Distribution of cattle and buffalo infected with *Trypanosoma* sp. in Lampung Province



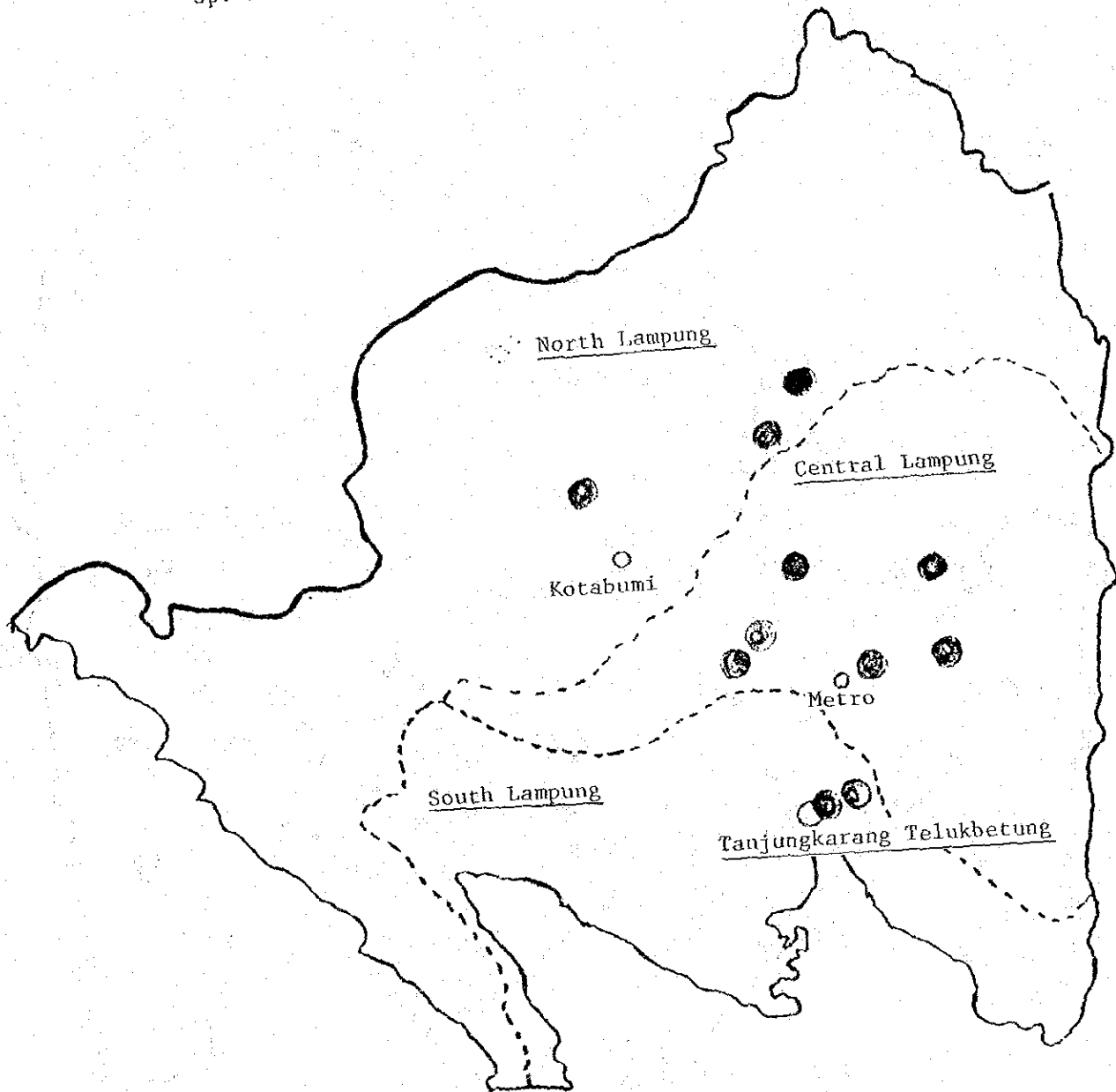
⊙ Subdistricts where positive cases were present.

Fig. 5 Distribution of cattle and buffalo infected with *Theileria* sp. *Babesia* sp. in Lampung Province



- *Theileria* sp.
- *Theileria* sp. and *Babesia* sp.

Fig. 6 Distribution of cattle and buffalo infected with *Anaplasma* sp. in Lampung Province



● Subdistricts where positive cases were present.

Fig. 7 Distribution of chickens infected with Leucocytozoon caulleryi and L. sabrasesi in Lampung Province.

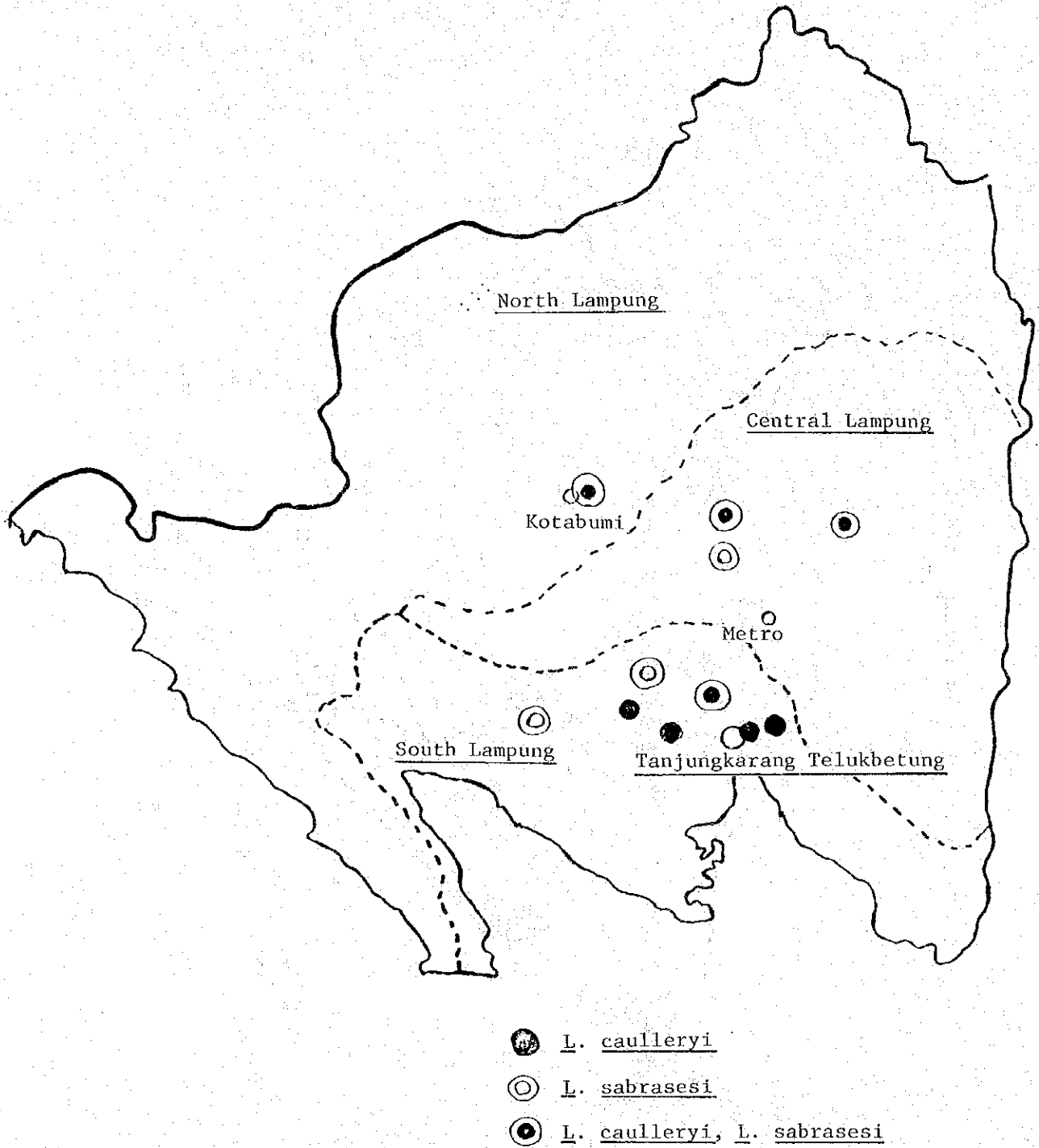
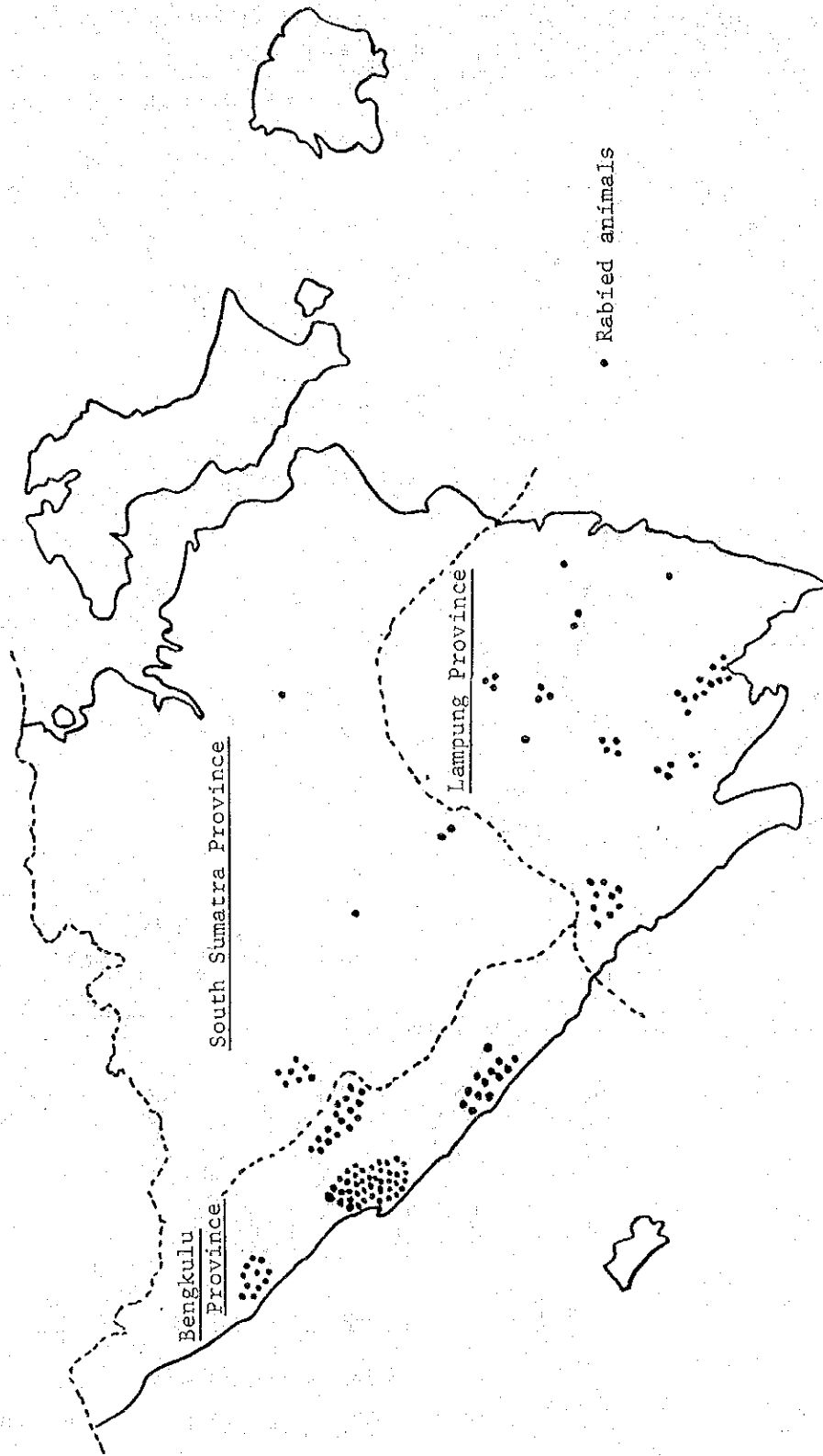


Fig. 8 Distribution of rabied animals in the provinces of Lampung,
South Sumatra and Bengkulu



JAPANESE EXPERTS, CONTRIBUTORS TO THE PROJECT

I. Long Term Experts

(Medan)

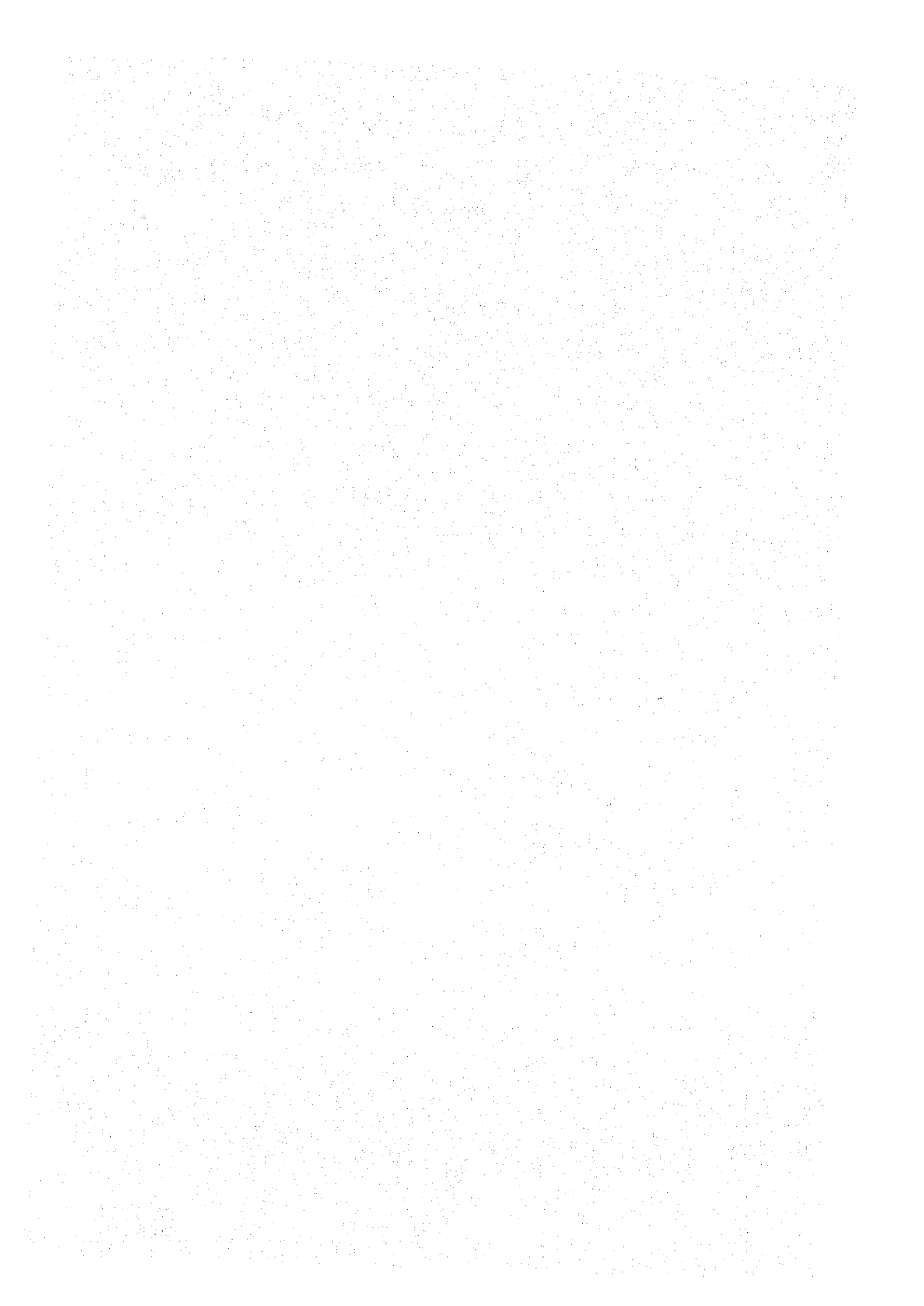
Seiichi Nagano ,
Yukio Oshio ,
Ikuo Koike ,
Norikiyo Yabe ,
Norihiko Yoshida ,
Jun Araki ,

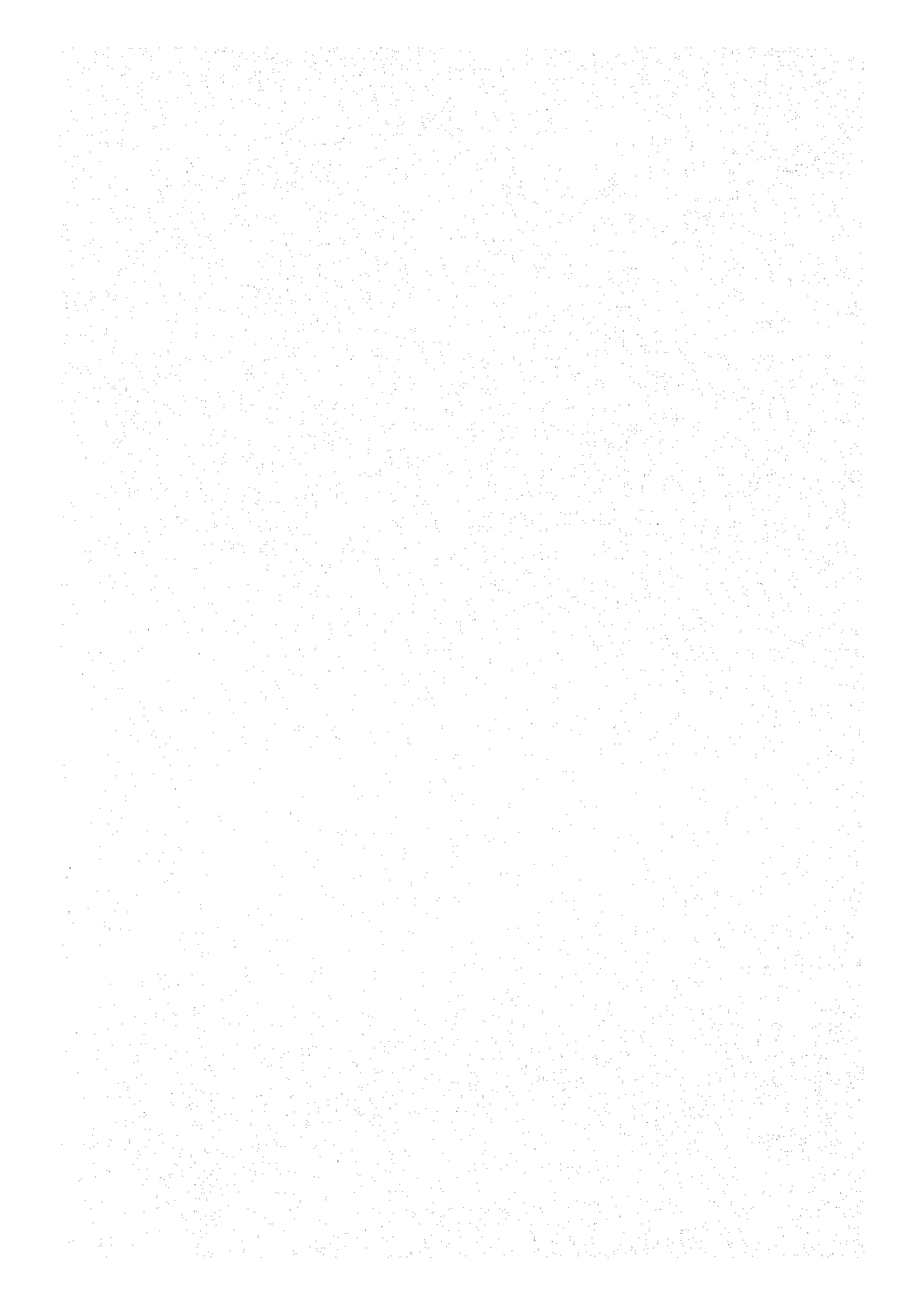
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JICA

LIB