

Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Fang L-Q, Liu K, X-L L, et al. Emerging tick-borne infections in mainland China: an increasing public health threat. *Lancet Infect Dis* 2015; published online Oct 7. [http://dx.doi.org/10.1016/S1473-3099\(15\)00177-2](http://dx.doi.org/10.1016/S1473-3099(15)00177-2).

Figure S1: The location at which each emerging tick-associated agent was initially identified

The map shows the vegetation cover of China. The year when the agent was first identified is shown in parenthesis. Spotted fever group rickettsiae are indicated in blue; agents in the family Anaplasmataceae in red; agents in the complex *Borrelia burgdorferi* sensu lato in purple; *Babesia* agents in black; and the SFTSV (the severe fever with thrombocytopenia syndrome virus) in orange.

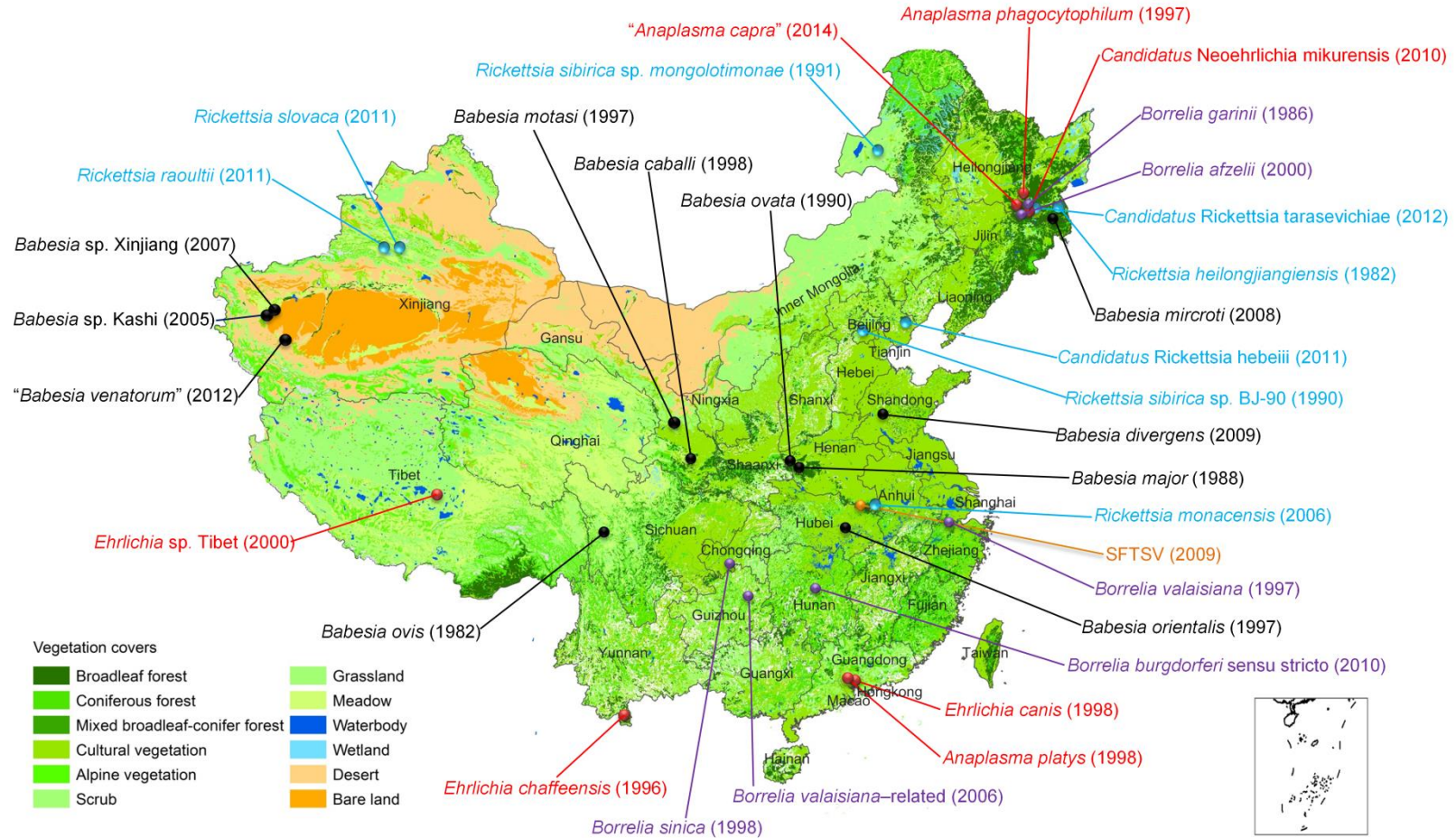


Figure S3: The spatial distribution of human SFTS cases in mainland China, 2010—2013



Table S1: Clinical and laboratory findings of patients infected with emerging tick-borne spotted fever group rickettsiae in mainland China

	Human infected with				
	<i>R. heilongjiangensis</i> (N=34)	<i>R. sibirica</i> sp. BJ-90 (N=1)	<i>R. raoultii</i> (N=2)	<i>Candidatus R. Tarasevichiae</i> (N=5)	Uncharacterised (N=37)
Male/total	-	1/1	2/2	2/5	6/8
Age range (year)	-	64	30, 67	12–56	-
Clinical manifestation					
Fever	13/19	1/1	0/2	2/5	19/19
Eschar	18/19	-	0/2	3/5	2/2
Myalgia	-	-	0/2	-	-
Arthralgia	-	-	0/2	-	-
Headache	12/19	1/1	0/2	3/5	1/1
Chill	-	1/1	0/2	-	-
Asthenia	-	1/1	1/2	3/5	-
Anorexia	-	1/1	1/2	3/5	-
Nausea	-	1/1	1/2	3/5	-
Vomiting	-	1/1	0/2-	2/5	-
Insomnia	-	1/1	0/2-	-	-
Rash	1/19	1/1	2/2	0/5	-
Lymphadenopathy	9/19	-	0/2	2/5	2/2
Malaise	13/19	-	-	-	-
Coma	-	-	-	1/5	-
Neck stiffness	-	-	0/2	2/5	-
Kernig's sign	-	-	0/2	1/5	-
Pain on tick-bite area	-	-	2/2	-	1/1
Vesicles	-	-	1/2	-	-
Laboratory test*					
Lymphopenia	-	1/1	-	-	-
Thrombocytopenia	-	1/1	-	-	-
Elevated ALT	-	1/1	-	1/5	1/1
Elevated AST	-	1/1	-	1/5	1/1
Proteinuria	-	1/1	-	1/5	-
Increased leukocyte count	-	-	-	3/5	-
Decreased CSF glucose	-	1/1	-	-	-
Increased CSF protein	-	-	-	1/5	-
Increased CSF leukocyte	-	-	-	1/5	-

*ALT: alanine transaminase; AST: aspartate aminotransferase; CSF: cerebrospinal fluid.

-Indicates that data were not reported or the test was not performed, or the data couldn't be extracted exactly from the literatures.

Table S2: Clinical and laboratory findings of human infections with emerging tick-borne agents in the family Anaplasmataceae in mainland China

	Human infected with			
	<i>E. chaffeensis</i> (N=12)	<i>A. phagocytophilum</i> (N=104)	<i>Candidatus Neoehrlichia mikurensis</i> (N=7)	<i>"A. capra"</i> (N=28)
Male/total	4/4	29/55	5/7	8/28
Age range (year)	27–45	18–78	29–67	10–69
Clinical manifestation				
Fever	4/4	79/79	7/7	23/28
Malaise	-	11/11	7/7	13/28
Chills	-	31/73	-	4/28
Diarrhea	-	28/73	1/7	1/28
Myalgia	2/4	25/73	4/7	4/28
Coryza/pharyngitis	-	4/10	-	-
Headache	4/4	23/73	7/7	-
Nausea	1/4	26/76	5/7	6/28
Edema	-	23/73	-	-
Gum bleeding	-	2/10	-	-
Dysuria	-	2/10	-	-
Vomiting	1/4	15/68	5/7	1/28
Oliguria	-	1/1	-	-
Rash	1/4	7/63	1/7	7/28
Cyanotic	-	1/1	-	-
Weakness	2/2	59/68	-	-
Anorexia	-	43/66	-	-
Cough	-	17/66	2/7	-
Abdominal pain	1/4	14/63	-	-
Mental confusion	-	10/62	1/7	-
Jaundice	-	18/62	-	-
Expiratory dyspnea	-	16/62	-	-
Melena	-	7/63	-	-
Inguinal lymph node enlargement	-	17/66	-	8/28
Skin ecchymosis	-	9/63	1/7	-
Arthralgia	1/2	16/62	2/7	-
Slow pulse	-	15/62	-	-
MODS*	-	27/63	-	-
Dizzy	2/4	4/5	-	-
Hematuria	-	1/1	-	-
Chest pain	1/2	-	-	-
Tinnitus	1/2	-	-	-
Fatigue	1/2	-	-	-
Cardiopalmus	1/2	-	-	-
Red and swollen on tick-bite area	4/4	-	-	-
Stiff neck	-	-	4/7	-
Laboratory test[†]				
Leukopenia	-	72/73	1/7	2/28
Thrombocytopenia	-	67/73	2/7	2/28
Elevated ALT	-	65/71	0/7	6/28
Elevated AST	-	65/71	0/7	6/28
Elevated CK	-	56/62	-	-

Elevated LDH	-	56/62	-	-
Elevated BUN	-	56/62	-	-
Decreased hemoglobin	-	25/62	-	-
Anemia	-	-	2/7	-

*MODS: multiple organ dysfunction syndromes.

†ALT, alanine aminotransferase; AST, aspartate aminotransferase; CK: creatine kinase; LDH: lactate dehydrogenase; BUN: blood urea nitrogen.

-Indicates that data were not reported or the test was not performed, or the data couldn't be extracted from the literatures.

Table S3: Clinical and laboratory findings of human infected with emerging tick-borne *Babesia* in mainland China

	Human infected with			
	<i>Ba. divergens</i> (N=2)	<i>Ba. microti</i> (N=11)	<i>“Ba. venatorum”</i> (N=49)	Uncharacterised (N=3)
Male/total				0/1
Age range (year)	47, 55	8–48	1–75	-
Clinical manifestation				
Fever	2/2	11/11	22/49	1/1
Malaise	-	1/1	1/1	1/1
Myalgia	-	1/1	6/49	3/3
Fatigue	-	1/1	15/49	3/3
Anemia	2/2	1/1	8/49	2/2
Weakness	-	1/2	1/1	1/1
Chill	-	11/11	3/48	1/1
Shortness of breath	-	1/1	1/1	-
Cough	-	1/1	-	-
Anorexia	-	1/1	-	2/2
Lose weight	-	1/1	-	-
Dizziness	-	1/1	8/48	-
Headache	-	1/1	13/48	-
Arthralgia	-	1/1	7/48	1/1
Laboratory test*				
Leukopenia	2/2	0/1	3/48	-
Thrombocytopenia	2/2	0/1	5/49	-
Elevated ALT	2/2	1/1	7/14	-
Elevated AST	2/2	1/1	7/14	-
Elevated LDH	2/2	-	1/1	-
Elevated leukocyte count	-	-	1/1	-
Elevated C-reactive protein	2/2	-	5/8	-
Elevated procalcitonin	-	-	1/1	-
Elevated total bilirubin	-	-	2/7	-
Hepatic injury	2/2	1/1	-	-
Hemoglobinuria	2/2	1/1	-	-
Renal failure	2/2	1/1	-	-

*ALT, alanine aminotransferase; AST, aspartate aminotransferase; CK: creatine kinase; LDH: lactate dehydrogenase; BUN: blood urea nitrogen.

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