Supporting information

Revision of the genus *Sycanus* Amyot & Serville, 1843 (Heteroptera: Reduviidae: Harpactorinae) from China based on DNA barcoding and morphological evidence

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https://zoobank.org/References/6412AE5B-755B-41B6-AC59-4D0AE0E09904

Figure S1. The maximum likelihood (ML) tree of cytochrome c oxidase subunit I (COI) sequences for 81 terminals of *Sycanus*. The numbers above the branches are bootstrap values. The clades / species identified in this study are indicated in different colors.

Figure S2. The neighbor-joining (NJ) tree of cytochrome c oxidase subunit I (COI) sequences for 81 terminals of *Sycanus*. The numbers above the branches are bootstrap values. The clades / species identified in this study are indicated in different colors.

Figure S3. The neighbor-joining (NJ) tree of partial 28S rDNA sequences for 34 terminals of *Sycanus*. The numbers above the branches are bootstrap values.

Figure S4. *Sycanus bicolor* Hsiao, 1979, **Paratype**, habitus, female. (a), dorsal view; (b), lateral view; (c), ventral view. Scale bar (a–c) = 2.86 mm.

Figure S5. *Sycanus croceus* Hsiao, 1979, habitus, (a–c), male, (d–f), female. (a, d), dorsal view; (b, e), lateral view; (c, f), ventral view. Scale bar of (a–f)= 10.00 mm.

Figure S6. *Sycanus falleni* Stål, 1863, (a, b), **type species** (kept in Swedish Museum of Natural History), female, habitus; (c–e), male, habitus; (f–h), female, habitus. (a, c, f), dorsal view; (b, d, g), ventral view; (d, g), lateral view. Scale bar of (c–h)=7.06 mm, (f–h)= 7.84 mm.

Figure S7. (a, b), *Sycanus generosus* Stål, 1863, **type species** (kept in Swedish Museum of Natural History), female, habitus; (c–e) *Sycanus marginatus* Hsiao, 1979, **Holotype**, female, habitus. (a, c) dorsal view; (d) lateral view; (b, e) ventral view. Scale bar of (c–e)= 5.38 mm.

Figure S8. (a, b) *Sycanus croceovittatus* (Dohrn, 1859); (c, b) *Sycanus falleni* Stål, 1863; (e) *Sycanus minor* Hsiao, 1979; (f) *Sycanus sichuanensis* Hsiao, 1979.

Table S1. GenBank Accession number under every sample individual code.

Table S2. Pairwise genetic divergence (Kimura two-parameter) within and between 12 sampling species of the genus *Sycanus* using cytochrome c oxidase subunit I gene sequence (Table S2 is uploaded separately)

Table S3. Pairwise genetic divergence (Kimura two-parameter) between 81 individuals of 12 species of the genus *Sycanus* using cytochrome c oxidase subunit I gene sequence (Table S3 is uploaded separately)

Table S4. Life history of *Sycanus croceus* Hsiao, 1979 (China, Guangxi, Ningming)

Table S5. Life history of *Sycanus falleni* Stål, 1863 (China, Guangxi, Ningming)

Alignment S1. Alignment of COI DNA barcodes dataset (Alignment S1 is uploaded separately)

Alignment S2. Alignment of partial 28S rDNA sequences dataset (Alignment S2 is uploaded separately)

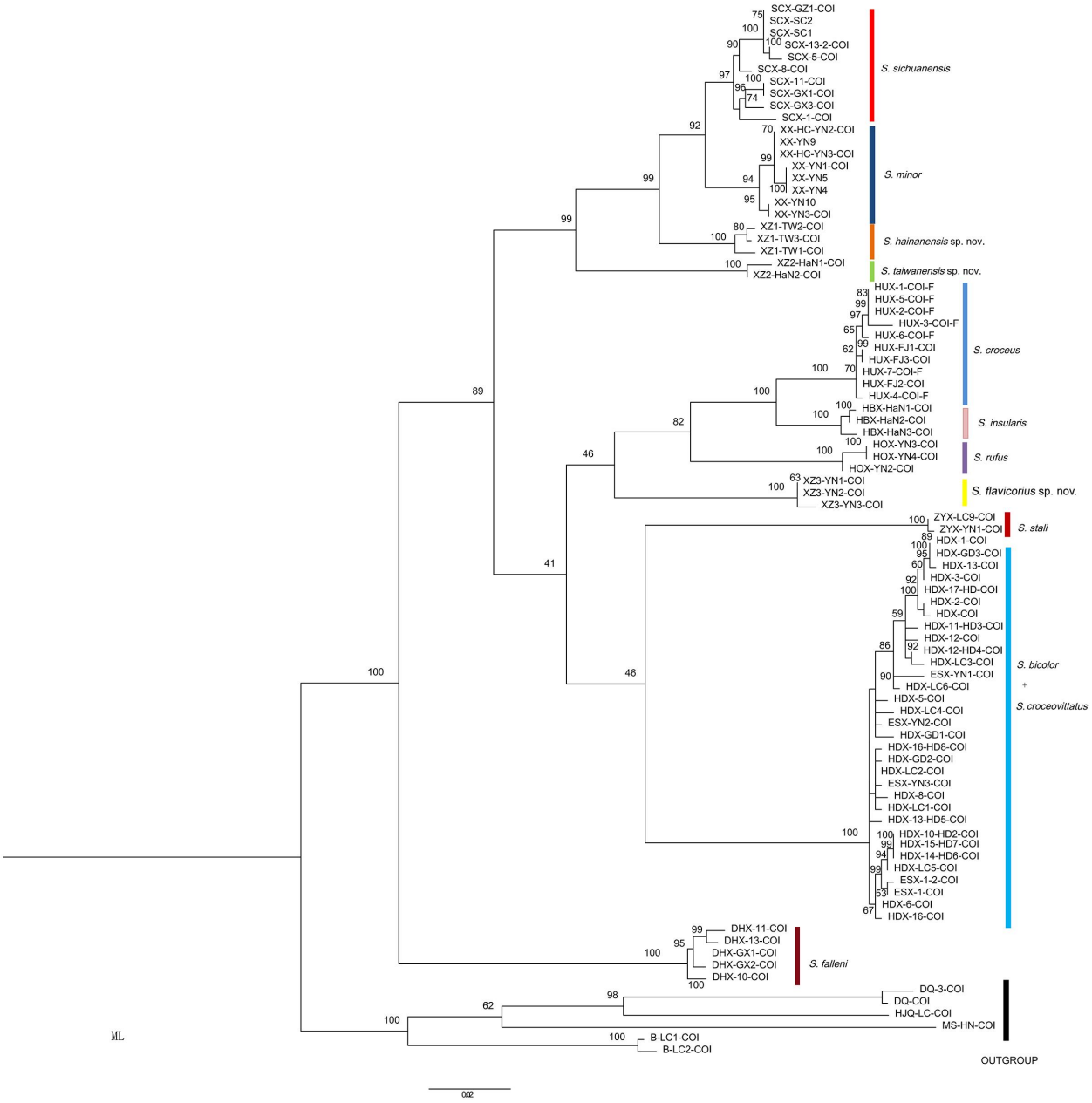


Figure S1. The maximum likelihood (ML) tree of cytochrome c oxidase subunit I (COI) sequences for 81 terminals of *Sycanus*. The numbers above the branches are bootstrap values. The clades / species identified in this study are indicated in different colors.

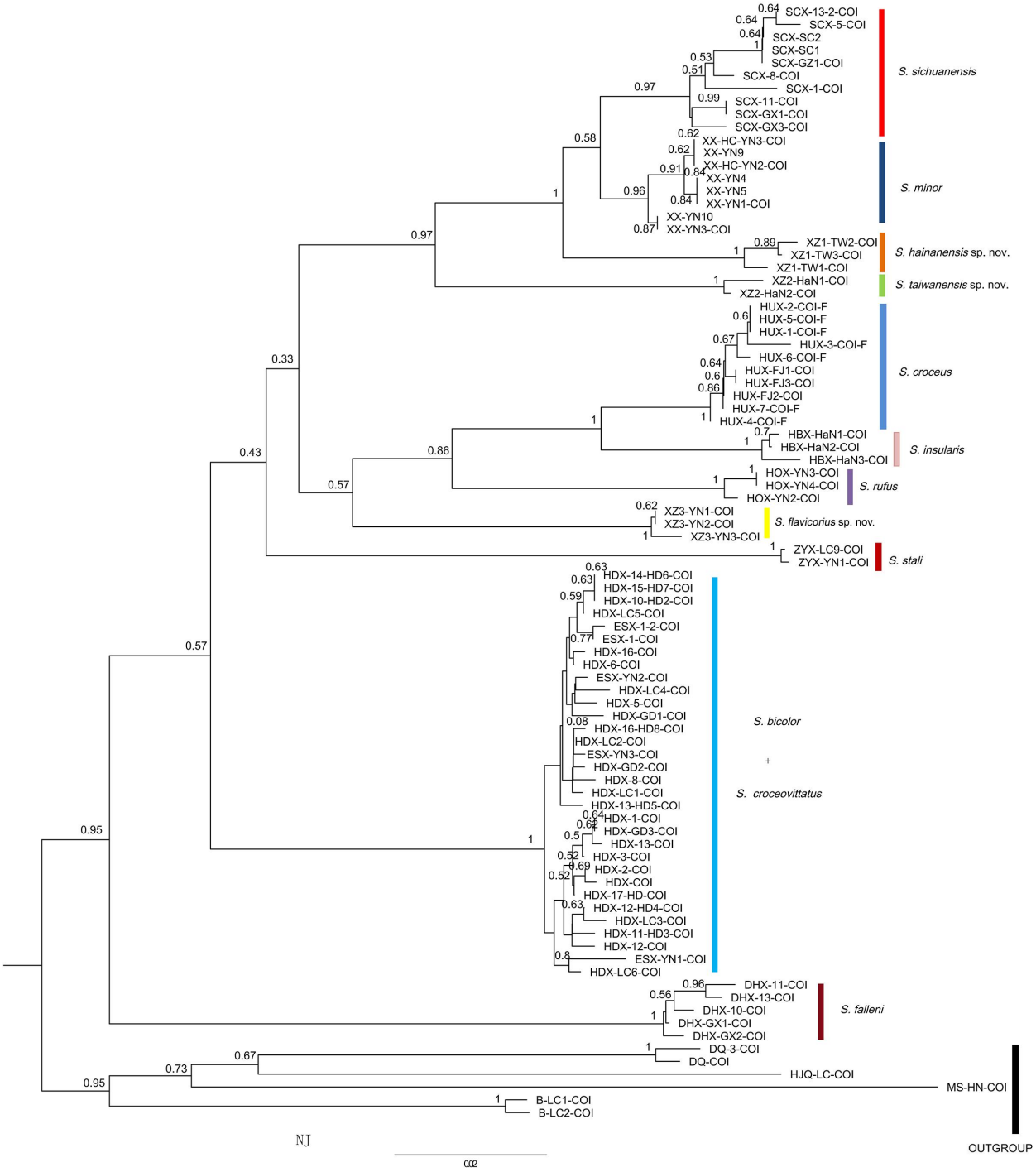
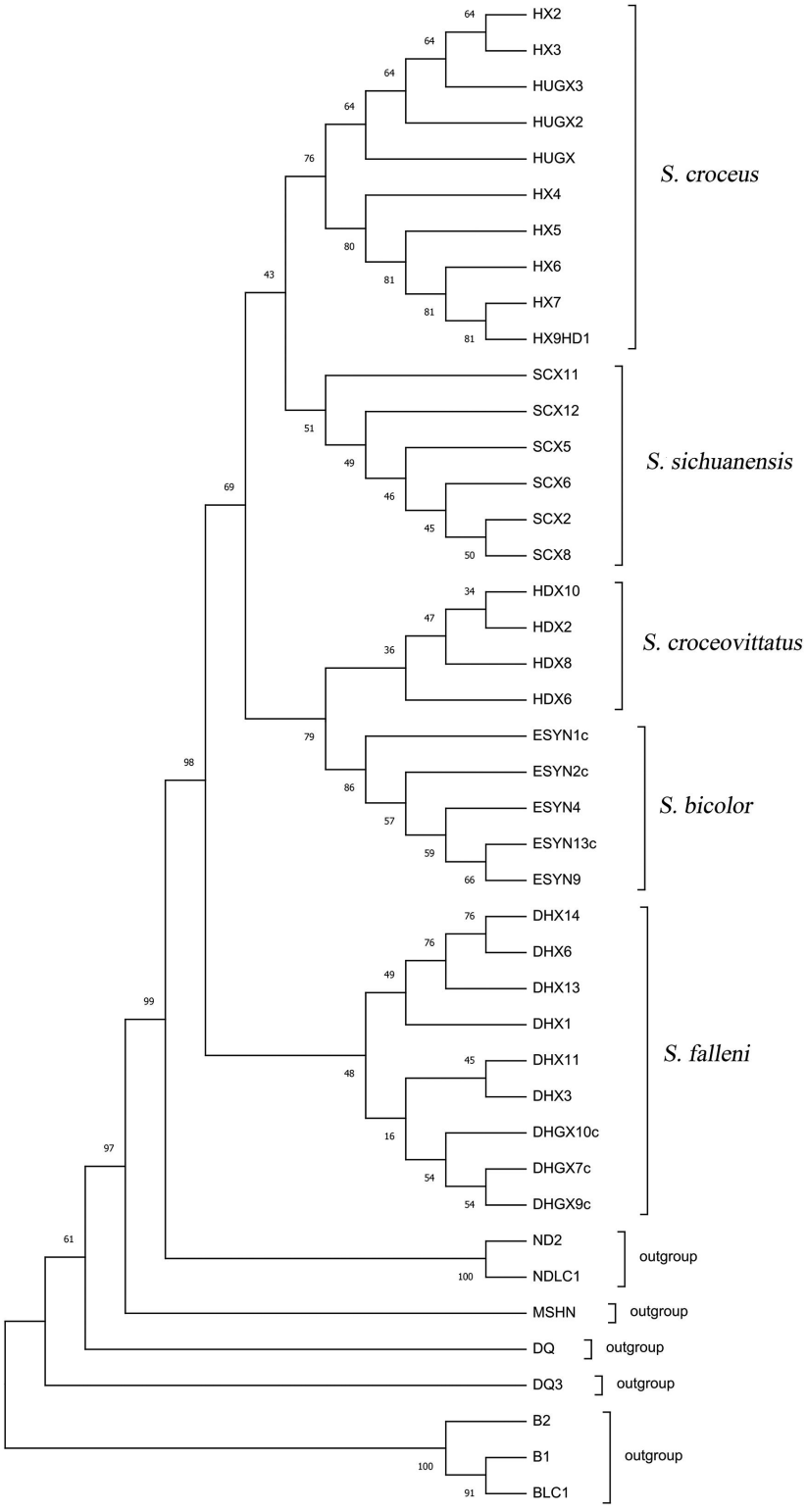


Figure S2. The neighbor-joining (NJ) tree of cytochrome c oxidase subunit I (COI) sequences for 81 terminals of *Sycanus*. The numbers above the branches are bootstrap values. The clades / species identified in this study are indicated in different colors.



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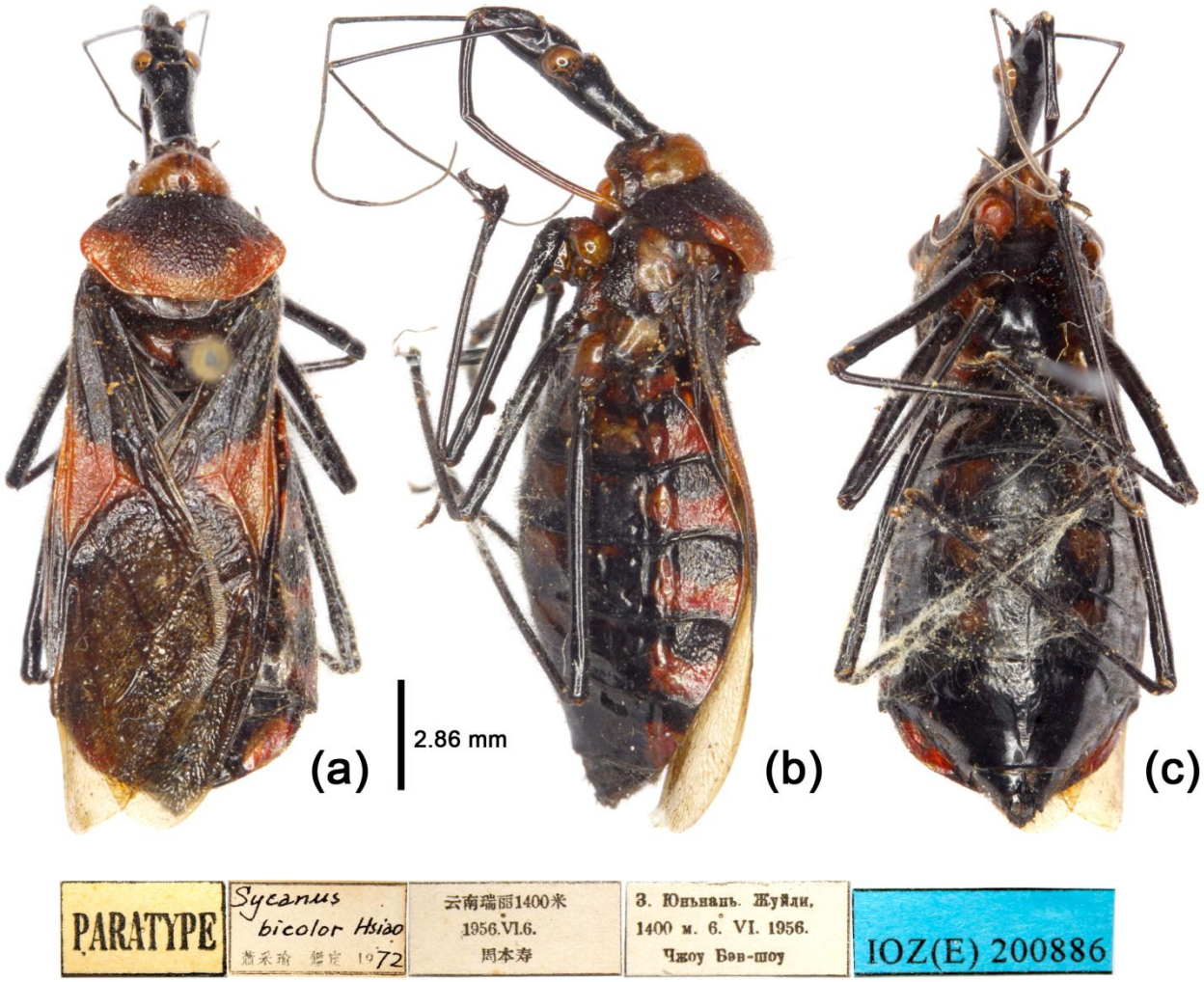

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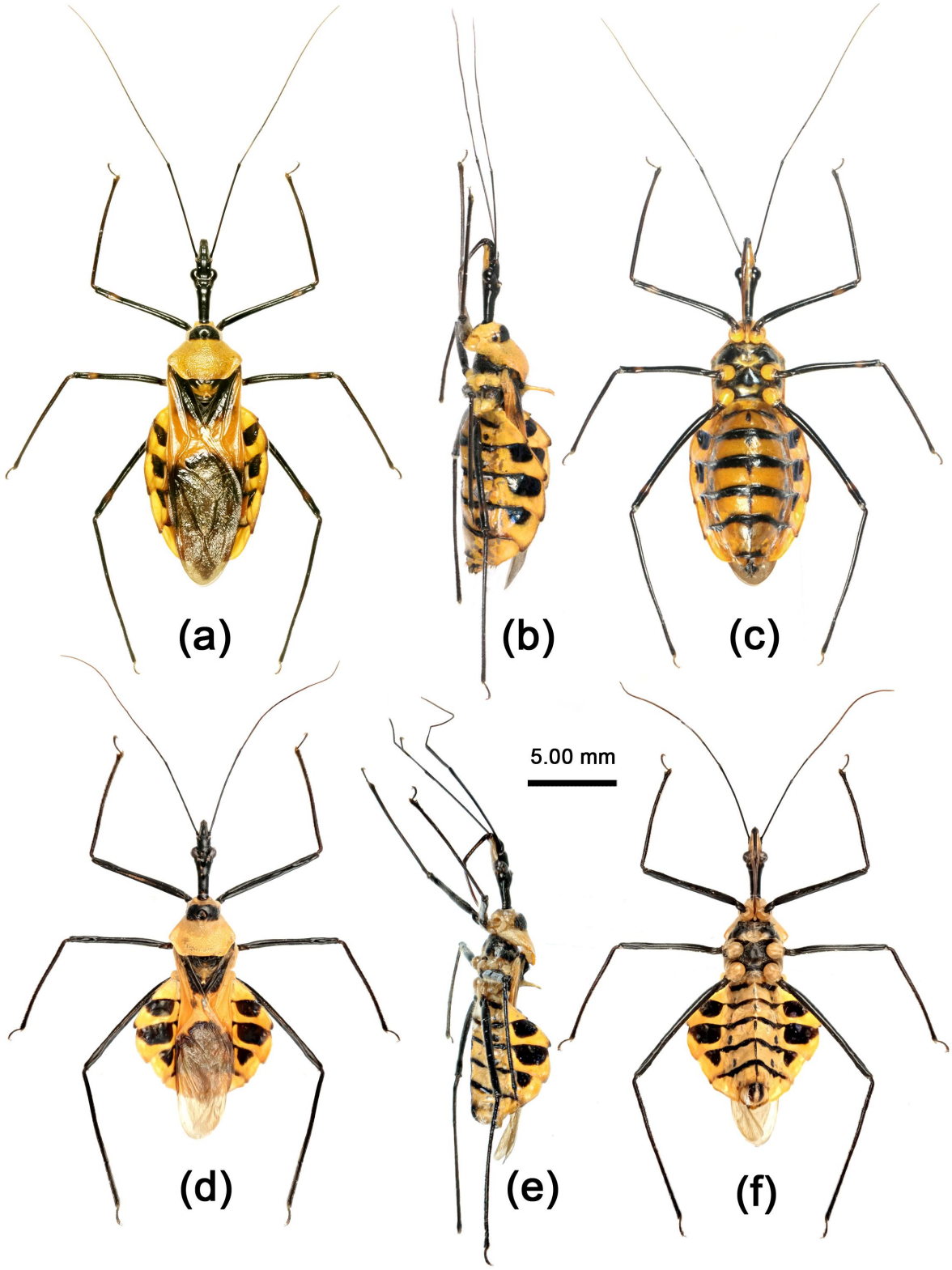

Figure S5. *Sycanus croceus* Hsiao, 1979, habitus, (a–c), male, (d–f), female. (a, d), dorsal view; (b, e), lateral view; (c, f), ventral view. Scale bar of (a–f)= 5.00 mm.

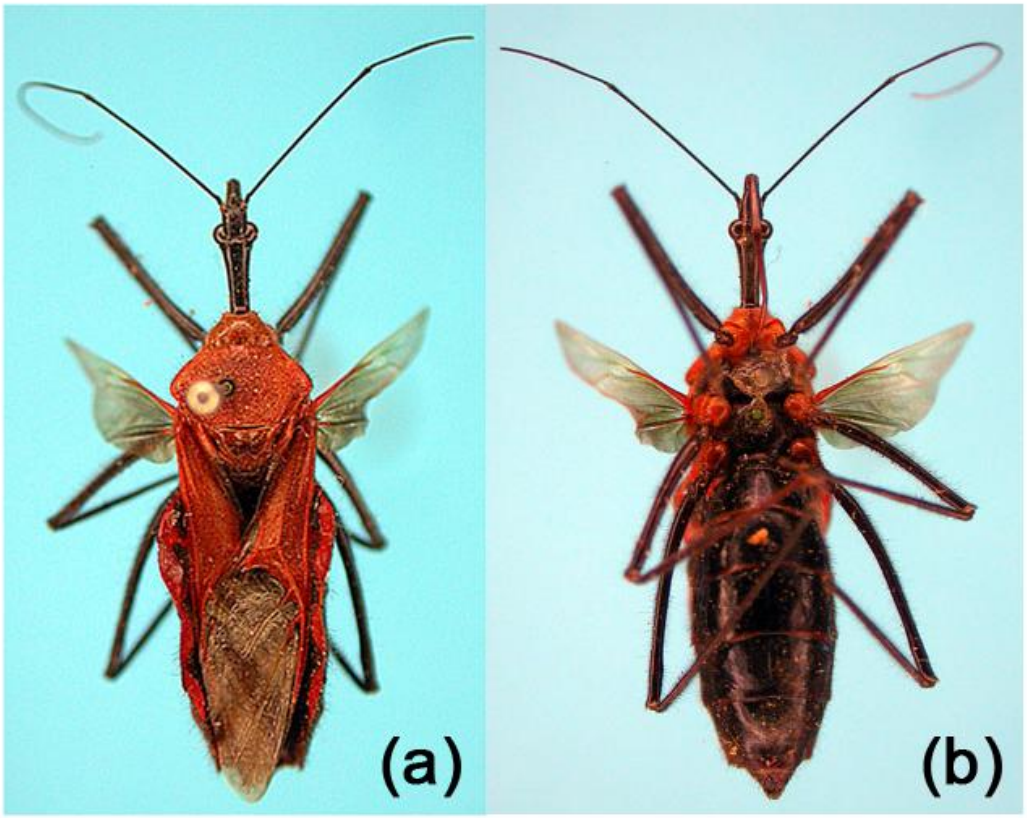

Figure S6. *Sycanus falleni* Stål, 1863, (a, b), **type species** (kept in Swedish Museum of Natural History), female, habitus.

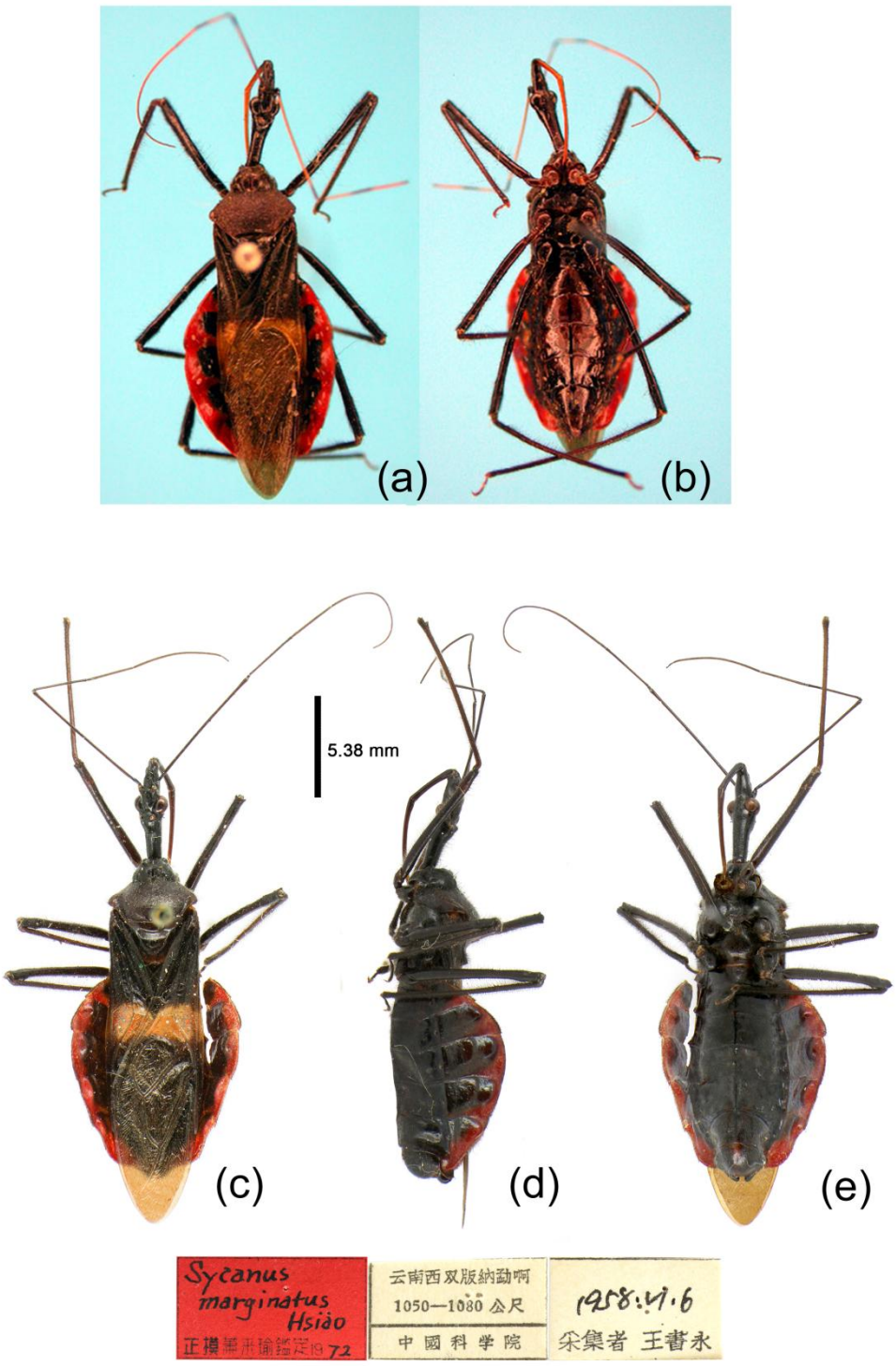

Figure S7. (a, b), *Sycanus generosus* Stål, 1863, **type species** (kept in Swedish Museum of Natural History), female, habitus; (c-e) *Sycanus marginatus* Hsiao, 1979, **Holotype** (kept in Institut of Zoology, Chinese Academy of Sciences, Beijing, China), female, habitus. (a, c) dorsal view; (d) lateral view; (b, e) ventral view. Scale bar of (c-e)= 5.38 mm.

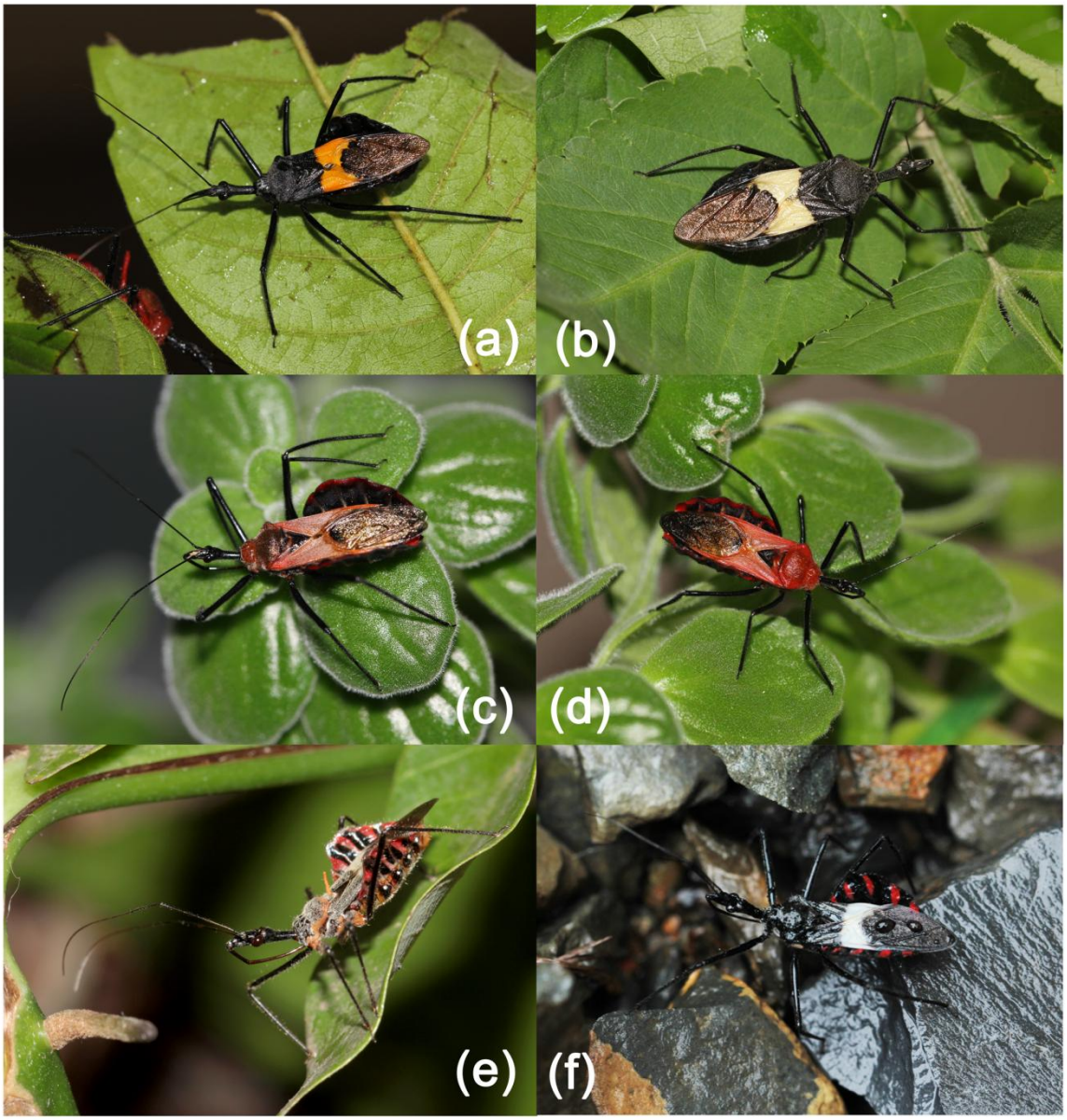

Figure S8. (a, b) *Sycanus croceovittatus* (Dohrn, 1859); (c, b) *Sycanus falleni* Stål, 1863; (e) *Sycanus minor* Hsiao, 1979; (f) *Sycanus sichuanensis* Hsiao, 1979.

Table S1. GenBank Accession number under every sample individual code (in PDF file of Supporting information)

COI DNA barcodes

No.	Sample code	GenBank Accession number	No.	Sample code	GenBank Accession number
1*	MS-HN-COI	OP927069	44	HDX-LC5-COI	OP927112
2*	B-LC1-COI	OP927070	45	HDX-LC6-COI	OP927113
3*	DQ-3-COI	OP927071	46	HOX-YN2-COI	OP927114
4*	DQ-COI	OP927072	47	HOX-YN3-COI	OP927115
5*	B-LC2-COI	OP927073	48	HOX-YN4-COI	OP927116
6	DHX-10-COI	OP927074	49	HUX-1-COI-F	OP927117
7	DHX-11-COI	OP927075	50	HUX-2-COI-F	OP927118
8	DHX-13-COI	OP927076	51	HUX-3-COI-F	OP927119
9	DHX-GX1-COI	OP927077	52	HUX-4-COI-F	OP927120
10	DHX-GX2-COI	OP927078	53	HUX-5-COI-F	OP927121
11	ESX-1-2-COI	OP927079	54	HUX-6-COI-F	OP927122
12	ESX-1-COI	OP927080	55	HUX-7-COI-F	OP927123
13	ESX-YN1-COI	OP927081	56	HUX-FJ1-COI	OP927124
14	ESX-YN2-COI	OP927082	57	HUX-FJ2-COI	OP927125
15	ESX-YN3-COI	OP927083	58	HUX-FJ3-COI	OP927126
16	HBX-HaN1-COI	OP927084	59	SCX-11-COI	OP927127
17	HBX-HaN2-COI	OP927085	60	SCX-13-2-COI	OP927128
18	HBX-HaN3-COI	OP927086	61	SCX-1-COI	OP927129
19	HDX-10-HD2-COI	OP927087	62	SCX-5-COI	OP927130
20	HDX-11-HD3-COI	OP927088	63	SCX-8-COI	OP927131
21	HDX-12-COI	OP927089	64	SCX-GX1-COI	OP927132
22	HDX-12-HD4-COI	OP927090	65	SCX-GX3-COI	OP927133
23	HDX-13-COI	OP927091	66	SCX-GZ1-COI	OP927134
24	HDX-13-HD5-COI	OP927092	67	SCX-SC1	OP927135
25	HDX-14-HD6-COI	OP927093	68	SCX-SC2	OP927136
26	HDX-15-HD7-COI	OP927094	69	XX-HC-YN2-COI	OP927137
27	HDX-16-COI	OP927095	70	XX-HC-YN3-COI	OP927138
28	HDX-16-HD8-COI	OP927096	71	XX-YN10	OP927139
29	HDX-17-HD-COI	OP927097	72	XX-YN1-COI	OP927140
30	HDX-1-COI	OP927098	73	XX-YN3-COI	OP927141
31	HDX-2-COI	OP927099	74	XX-YN4	OP927142
32	HDX-3-COI	OP927100	75	XX-YN5	OP927143
33	HDX-5-COI	OP927101	76	XX-YN9	OP927144
34	HDX-6-COI	OP927102	77	XZ1-TW1-COI	OP927145
35	HDX-8-COI	OP927103	78	XZ1-TW2-COI	OP927146
36	HDX-COI	OP927104	79	XZ1-TW3-COI	OP927147
37	HDX-GD1-COI	OP927105	80	XZ2-HaN1-COI	OP927148
38	HDX-GD2-COI	OP927106	81	XZ2-HaN2-COI	OP927149
39	HDX-GD3-COI	OP927107	82	XZ3-YN1-COI	OP927150
40	HDX-LC1-COI	OP927108	83	XZ3-YN2-COI	OP927151

41	HDX-LC2-COI	OP927109	84	XZ3-YN3-COI	OP927152
42	HDX-LC3-COI	OP927110	85	ZYX-LC9-COI	OP927153
43	HDX-LC4-COI	OP927111	86	ZYX-YN1-COI	OP927154
			87*	HJQ-LC-COI	not submitted

Partial 28S rDNA sequence

No.	Sample code	GenBank Accession number	No.	Sample code	GenBank Accession number
1*	B1	OP923231	22	HDX6	OP923252
2*	B2	OP923232	23	HDX8	OP923253
3*	BLC1	OP923233	24	HUGX	OP923254
4	DHGX10c	OP923234	25	HUGX2	OP923255
5	DHGX7c	OP923235	26	HUGX3	OP923256
6	DHGX9c	OP923236	27	HX2	OP923257
7	DHX1	OP923237	28	HX3	OP923258
8	DHX11	OP923238	29	HX4	OP923259
9	DHX13	OP923239	30	HX5	OP923260
10	DHX14	OP923240	31	HX6	OP923261
11	DHX3	OP923241	32	HX7	OP923262
12	DHX6	OP923242	33	HX9HD1	OP923263
13*	DQ	OP923243	34*	MSHN	OP923264
14*	DQ3	OP923244	35*	ND2	OP923265
15	ESYN13c	OP923245	36	NDLC1	OP923266
16	ESYN1c	OP923246	37	SCX11	OP923267
17	ESYN2c	OP923247	38	SCX12	OP923268
18	ESYN4	OP923248	39	SCX2	OP923269
19	ESYN9	OP923249	40	SCX5	OP923270
20	HDX10	OP923250	41	SCX6	OP923271
21	HDX2	OP923251	42	SCX8	OP923272

Note. The outgroups are marked with an asterisk in the serial number.

Table S4. Life history of *Sycanus croceus* Hsiao, 1979 (China, Guangxi, Ningming)

	January			February			March			April			May			June			July			August			September			October			November			December		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Egg																0	0	0	0	0	0	0	0														
1st instar nymph																		1	1	1	1	1	1	1	1												
2nd instar nymph																				2	2	2	2	2	2	2											
3rd instar nymph																						3	3	3	3	3	3	3	3								
4th instar nymph																									4	4	4	4	4	4	4	4					
5th instar nymph																												5	5	5	5	5	5	5	5		
Adult	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	+	+	+	+	+	+	+	+	+	+						+	+	+	(+)	(+)	(+)	(+)	(+)	(+)	(+)

†A: the first 10 days of month; B: the middle 10 days of month; C: the last 10 days of month. ‡ "0": egg; "1" : 1st instar nymph; "2" : 2nd instar nymph; "3" : 3rd instar nymph; "4": 4th instar of nymph; "5": 5th instar of nymph. §"(+)": overwinter adult; "+": adult.

Table S5. Life history of *Sycanus falleni* Stål, 1863 (China, Guangxi, Ningming)

	January			February			March			April			May			June			July			August			September			October			November			December		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Egg																0	0	0	0	0	0	0	0	0	0											
1st instar nymph																		1	1	1	1	1	1	1	1	1	1									
2nd instar nymph																			2	2	2	2	2	2	2	2	2	2								
3rd instar nymph																					3	3	3	3	3	3	3	3								
4th instar nymph																								4	4	4	4	4	4	4	4	4				
5th instar nymph																											5	5	5	5	5	5	5	5	5	5
Adult	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	**(+)**	+	+	+	+	+	+	+	+	+												**(+)**	**(+)**	**(+)**

†A: the first 10 days of month; B: the middle 10 days of month; C: the last 10 days of month. ‡ "0": egg; "1" : 1st instar nymph; "2" : 2nd instar nymph; "3" : 3rd instar nymph; "4": 4th instar of nymph; "5": 5th instar of nymph. §"(+)": overwinter adult; "+": adult.