

A preliminary list of arthropod families present in the Burmese amber collection at The Natural History Museum, London

A. P. RASNITSYN

Arthropod Laboratory, Paleontological Institute, Russian Academy of Sciences, Profsoyuznaya Str. 123, Moscow 117647, Russia

A. J. ROSS

Department of Palaeontology, The Natural History Museum, Cromwell Road, South Kensington, London SW7 5BD

SYNOPSIS. The present account is based on the 117 pieces of Burmese amber in the collections of The Natural History Museum, London. The material was found to be very rich in fossils yielding almost 1200 individual arthropod specimens.

INTRODUCTION

Below is a list of families of arthropods identified in the pieces of Burmese amber in the Department of Palaeontology of The Natural History Museum, London. The collection was initially identified to Order level by AJR, then APR made a more thorough study with additional identifications by scientists at the Paleontological Institute, Moscow and other institutions. This list provides, for the first time, a detailed account of the Burmese amber collection at the NHM and hopefully will stimulate further research by specialist entomologists and palaeoentomologists.

The list follows the format of Ross & Jarzembowski (1993). For each order and family, the identifier(s) is given in brackets, along with the total number of specimens. For each family, the registration numbers of the pieces of amber (pre-fixed by In.) are given. For each piece of amber, the number of individual specimens is given in brackets if there is more than one (abbreviated spm), and if the piece contains a type or figured specimen this is also indicated in brackets (abbreviated T or F respectively). Specimens In.19102–23, In.20149–50 and In.20195 all came from the same block that was sliced up into 7 slabs (see Cockerell, 1917). The 7 slabs contain a total of 458 inclusions, which makes the whole block the richest piece of amber ever recorded. For further information on the type and figured specimens in the collection, see the comprehensive list by Ross & York, this volume. The specimens of copal that Cockerell (1922) recorded are not included because there is uncertainty as to whether they are from Burma.

The total number of specimens in the list is 1198.

Collembola

Order Collembola (APR)	57+1?
Family Sminthuridae	32+3?
In.19098?, In.19100, In.19123 (4 spm), In.20150? (2 spm), In.20151, In.20186 (10 spm), In.20188 (16 spm)	
Undetermined	22+1?
In.19100, In.19102–3, In.19123 (2 spm), In.19128, In.19132, In.20150 (4+1? spm), In.20151, In.20171 (9 spm), In.20180, In.20183	

Insecta

Order Archaeognatha (APR)	1
Family Machilidae	1
In.20188	
Order Zygentoma (APR)	4
Family Lepismatidae	3+1?
In.19104–6, In.19107–16, In.19117–22 (T), In.20149?	
Order Ephemeroptera (N. D. Sinitshenkova)	1
Family Prosopistomatidae	1
In.20173 (T)	
Order Blattodea (APR)	58
Family Blattellidae (AJR)	3
In.19102–3, In.20149, In.20172	
Family Polyphagidae (AJR)	1
In.20194	
Undetermined (mainly nymphs, isolated legs or body parts)	54
In.19102–3 (9 spm), In.19104–6 (2 spm), In.19107–16 (5 spm), In.19117–22, In.19123 (6 spm), In.19128, In.19132 (2 spm), In.19136 (2 spm), In.20149 (9 spm), In.20150 (7 spm), In.20151, In.20152, In.20164, In.20171 (2 spm), In.20174, In.20175, In.20182, In.20192, In.20200	
Order Dermaptera	1
Family Labiduridae	1
In.20146 (T)	
Order Embioptera	1
Family Burmitembiidae	1
In.19132 (T)	
Order Isoptera (APR)	91?
Family Hodotermitidae (K. Krishna)	2
In.19123, In.20160	
Family Kalotermitidae	89?
In.19096 (2 spm, 1 T), In.19102–3 (11 spm, 1 T), In.19104–6 (3 spm), In.19107–16 (15 spm), In.19117–	

22, In.19123 (many, 50? spm), In.20149 (5 spm), In.20174, In.20699		Order Thysanoptera (APR)	14
		Family Lophioneuridae (V. V. Zherikhin)	1
		In.20194 (T)	
Order Mantodea (P. Vrsansky, APR)	3+1?	Undetermined	13
Undetermined	3+1?	In.19133-4, In.19135, In.19098, In.20149, In.20168, In.20172 (8 spm)	
In.19100-1 (nymph), In.20150, In.20152 (nymph), In.20162? (ootheca?)			
Order Orthoptera (APR)	3+2?	Order Coleoptera (APR, V. G. Gratshev, N. B. Nikitsky, P. Hammond)	195
Superfamily Grylloidea	2+1?	Family Aderidae	1?
In.20152? (nymph), In.20171 (2 spm)		In.20150?	
Undetermined	2?	Family Anthicidae	1
In.19107-16?, In.20161?		In.19107-16 (T)	
Order Phasmatodea (APR)	3?	Superfamily Cantharoidea	1+1?
Undetermined	3?	In.19123 (larva), In.20169?	
In.19117-22? (3 spm, eggs)		Family Carabidae	1
		In.20150 (larva)	
Order Hemiptera (D. E. Shcherbakov)	82	Family Cerambycidae	1
Family Achilidae	28	In.20188	
In.19094 (2 spm), In.19102-3 (8 spm), In.19104-6 (2 spm, 1 T), In.19117-22 (5 spm), In.19123 (2 spm), In.20149 (4 spm), In.20150 (2 spm), In.20168, In.20186, In.20191		Family Chrysomelidae	1?
Family Aleyrodidae	3	In.20150? (larva)	
In.19133-4 (T), In.20193 (T), In.20703		Family Cixiidae	1?
Family Aphrophoridae	1?	In.19136?	
In.19094?		Superfamily Cleroidea	1?
Family Cixiidae	2	In.20169?	
In.19094 (2 spm, 1 T)		Family Colydiidae	3+3?
Superfamily Coccoidea	16+1?	In.19107-16? (T), In.19117-22?, In.19123 (2 spm), In.20149?, In.20174	
In.19098, In.19102-3, In.19125?, In.19132, In.20155, In.20160, In.20168 (2 spm), In.20172, In.20174, In.20175, In.20186, In.20188, In.20191, In.20193 (2 spm), In.20708		Family Cucujidae	4?
Family Coreidae s.l.	1	In.19102-3?, In.19104-6?, In.20150?, In.20174?	
In.20186		Family Dermestidae	1+1?
Family Enicocephalidae	6	In.19107-16' (1+1? spm, 1 T)	
In.19095 (T), In.19107-16 (2 spm, 2 T), In.19123 (2 spm, 1 T), In.19128		Family Elateridae	19
Superfamily Fulgoroidea undetermined	13	In.19102-3 (8 spm, 1 T), In.19107-16 (5 spm, 1 T), In.19117-22 (2 spm), In.19123 (2 spm), In.20186, In.20187	
In.19098 (2 spm), In.19130, In.20160, In.20167 (3 spm), In.20171, In.20172, In.20174, In.20175, In.20191, In.20195		Family Eucinetidae	1
Family Ochteridae	1	In.20186	
In.20160		Family Eucnemidae	2
Undetermined	10	In.20168 (2 spm)	
In.19107-16 (5 spm), In.19117-22, In.19125, In.20152, In.20158, In.20185		Family Helodidae	1?
		In.20150?	
Order Psocoptera	47	Family Lathridiidae	1
Family Compsocidae	1	In.19136	
In.20193		Family Melandryidae	1+1?
Family Pachytroctidae	2	In.19136, In.20706?	
In.19136 (2 spm, 1 T)		Family Melyridae	1
Family Psyllipsocidae	4	In.20160	
In.19097 (T), In.20174, In.20193, In.20706		Family Microsporidae	1
Undetermined	40	In.19132	
In.19096, In.19098 (2 spm), In.19102-3, In.19107-16, In.19177-22 (2 spm), In.19136 (18 spm), In.20150, In.20151 (2 spm), In.20163, In.20172, In.20173, In.20174, In.20175 (2 spm), In.20178 (2 spm), In.20186, In.20187, In.20199, In.20707		Family Mordellidae	1
		In.20160	
		Family Nitidulidae	1
		In.20178 (larva)	
		Family Oedemeridae	2?
		In.19123?, In.20190?	
		Family Pselaphidae	6
		In.19104-6 (2 spm), In.19123, In.20150, In.20171, In.20207	
		Family Ptilidae	3
		In.19132, In.19160, In.19107-16	
		Family Rhipiphoridae	1
		In.19092 (T)	

LIST OF ARTHROPOD FAMILIES IN BURMESE AMBER

23

Family Salpingidae	1?	In.19097?, In.19098, In.19100–1 (2 spm, 1 T), In.19133–4?, In.20147 (T), In.20155 (2 spm), In.20156, In.20164, In.20167 (5 spm), In.20168 (2 spm), In.20171, In.20172 (2 spm), In.20187 (2 spm), In.20189, In.20198, In.20707 (4 spm), In.20710 (7 spm)	
In.20199?			
Family Scaptiidae	16		
In.19102–3, In.19107–16, In.19117–22, In.19123 (11 spm), In.19126, In.20150			
Family Staphylinidae	23	Family Rhagionidae	1+1?
In.19107–16, In.19136 (2 spm), In.20150 (13 spm), In.20152, In.20158, In.20160 (2 spm), In.20169, In.20751, In.20194		In.20175, In.20709?	
Superfamily Staphylinoidea undetermined	2	Family Scatopsidae	1
In.19123, In.20194		In.20150	
Family Throscidae	1?	Family Sciariidae	5
In.20150?		In.19096, In.20151, In.20152, In.20188, In.20199	
Undetermined	89	Family Therevidae	1
In.19092 (2 spm), In.19094 (2 spm), In.19098, In.19100–1, In.19102–3 (9 spm), In.19104–6, In.19107–16 (12 spm), In.19117–22 (12 spm), In.19123 (7 spm), In.19131, In.20149 (10 spm), In.20150 (3 spm), In.20151, In.20152 (5 spm), In.20158, In.20160, In.20164, In.20173, In.20176, In.20183 (2 spm), In.20188, In.20189 (3 spm), In.20192, In.20193, In.20194 (4 spm), In.20195, In.20196, In.20200, In.20205, In.20708		In.20148 (T)	
		Superfamily Tipuloidea undetermined	1
		In.20171	
		Undetermined	34
		In.19097, In.19099, In.19102–3 (2 spm), In.19107–16 (2 spm), In.19117–22 (3 spm), In.19123 (larva), In.19136, In.20149 (3 spm), In.20150, In.20168, In.20172, In.20173 (2 spm), In.20183, In.20184 (2 spm), In.20188, In.20192 (2 spm), In.20194 (2 spm), In.20199 (2 spm), In.20208 (3 spm), in.20708 (2 spm)	
Order Diptera (V. A. Blagoderov, M. B. Mostovsky)	203	Order Hymenoptera (APR)	102
Family Apsilocephalidae	1	Family Bethyidae	31
In.20167 (T)		In.19107–16 (5 spm, 2 T), In.19117–22 (3 spm, 1 T), In.19123 (9 spm), In.19136 (2 spm), In.20149 (7 spm, 1 T), In.20150 (5 spm)	
Family Cecidomyiidae	14+1?	Superfamily Chalcidoidea	3
In.19096 (3 spm), In.19107–16 (T), In.19125, In.20151, In.20160, In.20167, In.20168 (2 spm), In.20173, In.20174, In.20194 (1+1? spm), In.20210		In.20208, In.19133–4, In.20194	
Family Ceratopogonidae	12	Family Diapriidae	1?
In.19133–4 (T), In.20168 (5 spm), In.20172, In.20173 (2 spm), In.20190, In.20208, In.20700		In.19124?	
Family Chaoboridae (E. D. Lukashevitch)	3	Family Embolemidae	2
In.20157 (T), In.20168 (2 spm, 2T)		In.20151, In.20194	
Family Chironomidae	25+6?	Family Evaniidae	1
In.19098 (2 spm), In.19117–22 (2 spm), In.20148?, In.20153 (7 spm), In.20168 (2 spm), In.20173?, In.20183 (1+2? spm), In.20189, In.20194 (1+1? spm), In.20207, In.20704?, In.20705 (2 spm), In.20707 (4 spm), In.20708 (2 spm)		In.20192 (T)	
Family Diadocidiidae	5	Family Formicidae	5
In.20175 (4 spm), In.20188		In.19125 (T), In.19132, In.20182 (3 spm, 1 T, 1F)	
Family Dolichopodidae	1?	Family Gasteruptionidae	6
In.20197?		In.19091 (T), In.19098 (T), In.19117–22 (T), In.19129, In.20169, In.20174	
Family Empididae	38+4?	Family Megaspilidae	1
In.19096 (8 spm), In.19099 (3 spm, 1 T), In.19102–3 (4 spm), In.19104–6 (F), In.19107–16 (3? spm), In.19117–22 (5 spm, 1 T), In.19123 (7 spm), In.19136 (2 spm), In.20149?, In.20151, In.20173 (2 spm), In.20178, In.20192 (3 spm), In.20209		In.20159	
Family Keroplatidae	2	Family Mymaromatidae	2
In.19104–6 (T), In.20179		In.20193, In.20208	
Family Limoniidae	1	Family Pelecinidae	1
In.20155		In.20174	
Family Mycetophilidae (P. Chandler)	1	Family Scelionidae	23
In.19100–1 (T)		In.19092, In.19094, In.19096, In.19102–3 (2 spm), In.19107–16, In.19117–22 (5 spm), In.19136 (3 spm), In.20158 (2 spm), In.20167, In.20183 (2 spm), In.20193, In.20197, In.20706 (2 spm)	
Superfamily Mycetophiloidea undetermined	7	Family Serphitidae	2
In.19136, In.20171 (4 spm), In.20175 (2 spm)		In.20151, In.20190 (F)	
Family Phoridae	3	Family Sphecidae	17+1?
In.19102–3, In.19123, In.20193		In.19093 (T), In.19123 (2 spm, 2 T), In.19125 (T), In.19136 (9 spm, 9 T), In.20150 (T), In.20164?, In.20181 (T), In.20197 (T), In.20711 (T)	
Family Psychodidae	33+2?	Family Tiphidae	2?
		In.20150? (2 spm)	
		Undetermined	4
		In.19102–3, In.19104–6, In.20149, In.20208	

		(8 spm), In.20158, In.20171 (3 spm), In.20179, In.20183, In.20186 (3 spm), In.20188, In.20189 (7 spm), In.20699	
Order Lepidoptera (APR, G. Robinson)	7	Order Araneae (K. Y. Eskov)	36
Family Micropterygidae	3+1?	Family Eusparassidae	1
In.19135 (T), In.20167, In.20168, In.20204.		In.20197 (juvenile)	
Undetermined	3	Family Myrmeciidae	3
In.19123, In.20151, In.20172		In.20193, In.20197, In.20208	
Order Neuroptera (A. G. Ponomarenko, M. Engel)	6	Family Oonopidae	2
Family Berothidae	3	In.20210, In.20168	
In.20193, In.20177, In.20197		Family Pisauridae (D. Penney)	1
Family Osmylidae	1	In.19132	
In.20150 (larva)		Family Tetragnathidae	1?
Superfamily Osmyloidea undetermined	1	In.20208?	
In.19107-16? (larva)		Family Theridiidae	1
Undetermined	1	In.20193	
In.19102-3		Family Thomisidae	1
Order Raphidioptera (A. G. Ponomarenko)	1	In.20174 (juvenile)	
Undetermined	1	Undetermined	26
In.20150 (larva)		In.19104-6, In.19117-22 (2 spm), In.19136 (3 spm), In.20151, In.20152 (4 spm), In.20154, In.20172 (2 spm), In.20174, In.20178, In.20183, In.20186 (3 spm), In.20189 (2 spm), In.20191 (2 spm), In.20194, In.20700	
Order Trichoptera	1	Order Chelonethi (APR, K. Y. Eskov)	38
Family Hydroptilidae	1	Family Cheiridiidae (M. L. I. Judson)	3
In.20180 (T)		In.19117-22 (2 spm, 1 T), In.19123 (F)	
Order Undetermined (APR)	13	Family Olpiidae (M. L. I. Judson)	1
In.19102-3 (3 spm), In.19104-6, In.19107-16 (2 spm), In.19117-22, In.20149 (2 spm), In.20150 (2 spm), In.20167 (2 spm)		In.20149 (T)	
		Undetermined	34
		In.19102-3 (6 spm), In.19107-16 (5 spm), In.19117-22, In.19123 (11 spm), In.20149 (2 spm), In.20150 (6 spm), In.20171, In.20189, In.20195	
Arachnida		Order Scorpionida (APR)	1
Order Acarina (A. L. Kartsev, O. L. Makarova)	164	Undetermined	1
Family Anystidae	1	In.20174 (F)	
In.20167			
Family Bdellidae	2	Diplopoda	
In.19128, In.20193		Order Polyxenida (APR, S. I. Golovach)	60
Superfamily Bdelloidea undetermined	1?	Family Synxenidae	60
In.20203?		In.19102-3 (4 spm), In.19104-6 (6 spm), In.19117-22 (2 spm, 1 T), In.19123 (24 spm), In.20149 (5 spm), In.20150 (18 spm), In.20169	
Family Cheyletidae	5		
In.19107-16 (T), In.19123 (3 spm), In.20149		Order Undetermined (S. I. Golovach)	1?
Family Erythraeidae	25	In.19123?	
In.19102-3, In.19107-16 (2 spm), In.19123 (3 spm), In.19132, In.20149, In.20150 (11 spm), In.20188, In.20193 (5 spm)			
Family Eupodidae	5+2?		
In.20150?, In.20193 (5+1? spm)			
Family Ixodidae	1		
In.19125 (juvenile)			
Undetermined	122		
In.19095, In.19100-1, In.19102-3 (14 spm), In.19104-6 (6 spm), In.19107-116 (25 spm), In.19117-22 (8 spm), In.19123 (25 spm), In.19128 (2 spm), In.19132, In.20149 (4 spm), In.20150 (8 spm), In.20151, In.20152			

REFERENCES

- Cockerell, T.D.A. 1917. Arthropods in Burmese amber. *American Journal of Science*, Ser. 4, **44**: 360-368.
- 1922. Fossils in Burmese amber. *Nature*, **109**: 713-714.
- Ross, A. J. & Jarzembowski, E.A. 1993. Arthropoda (Hexapoda; Insecta). In: Benton, M.J. (editor) *The fossil record 2*: 363-426. Chapman & Hall, London.