

Table 2. A sample of twenty disease-producing pathogens representing parasitism and parasitoidism in the amber fossil record¹

<i>Phylum, entry</i>	<i>Order</i>	<i>Family</i>	<i>Genus and species</i>	<i>Disease</i>	<i>Host or vector</i> ²	<i>Deposit</i>	<i>References</i>
VIRUSES ³							
[unrecognized] 1	dsDNA Viruses	Polydnaviridae	<i>Bracovirus</i>	[none given]	Braconidae, braconid wasps ⁴	Dominican and Baltic Ambers	Poinar, 2014
[unrecognized] 2	RNA Viruses & ds RNA Viruses	Baculoviridae	? <i>Deltabaculovirus</i>	nuclear insect polyhedrosis disease	[species indet.] (Psychodidae), a sand fly ²	Myanmar amber	Poinar and Poinar, 2005; Poinar, 2014
[unrecognized] 3	RNA Viruses & dsRNA Viruses	Reoviridae	<i>Orbivirus</i>	epizootic hemorrhagic and equine diseases	[species indet.] (Ceratopogonidae), a biting midge	Myanmar amber	Poinar, 2014
BACTERIA ³							
Proteobacteria 4	Enterobacteriales	Enterobacteriaceae	? <i>Yersinia</i> sp. ⁵	yersiniosis (the Plague)	<i>Rhopalopsyllus</i> sp. (Rhopalopsyllidae), a flea	Dominican amber	Poinar, 2014
Proteobacteria 5	Enterobacteriales	Enterobacteriaceae	<i>Protorhabdus luminescens</i>	angel's glow	<i>Heterorhabditus</i> sp. (Heterorhabditidae), a nematode	Myanmar amber	Poinar, 2011a
EXCAVATA ³							
Euglenozoa 6	Kinetoplastida	Trypanosomatidae	<i>Trypanosoma antiquus</i>	Chagas disease	<i>Triatoma dominicana</i> (Reduviidae: Triatominae), a kissing bug	Dominican amber	Poinar, 2005c

Euglenozoa 7	Kinetoplastida	Trypanosomatidae	<i>Paleoleishmania proterus</i>	leishmaniasis	<i>Paleomyia burmitis</i> (Psychodidae: Phlebotominae), a sand fly	Myanmar amber	Poinar, 2004a, 2004b
Euglenozoa 8	Kinetoplastida	Trypanosomatidae	<i>Paleotrypanosoma burmanicus</i>	trypanosomiasis	<i>Leptoconops nosospheris</i> (Ceratopogonidae), a biting midge	Myanmar amber	Poinar, 2008a; see also Poinar, 2008b
CHROMALVEOLATA³							
Apicomplexa 9	Haemosporoida	Plasmodiidae	[inferred from coeval plasmodium in (10) below]	malaria	<i>Anopheles</i> sp. (Culicidae), an anopheline mosquito	Dominican amber	Zavortink and Poinar, 2000
Apicomplexa 10	Haemosporoida	Plasmodiidae	<i>Plasmodium dominicana</i>	malaria	<i>Culex malariager</i> (Culicidae), a culicine mosquito	Dominican amber	Poinar, 2005b
Apicomplexa 11	Haemosporoida	Plasmodiidae	<i>Velafebus ovatus</i>	bat malaria	<i>Enischnomyia stegosoma</i> (Streblidae), a bat fly	Dominican amber	Poinar 2011b, Poinar and Brown, 2012
Apicomplexa 12	Haemosporoida	Haemoproteidae	<i>Paleohaemoproteus burmaces</i>	malaria	<i>Protoculicoides</i> sp. (Ceratopogonidae), a biting midge	Myanmar amber	Poinar and Telford, 2005
Apicomplexa 13	Eugregarinoiida	Monoductidae	<i>Primgregarina burmanicus</i>	gregarine disease	[indeterminate] cockroach (Blatellidae)	Myanmar amber	Poinar and Boucot, 2010; Poinar, 2012
FUNGI³							
Deuteromycota 14	Sphaeropsidiales	?Sphaeropsidaceae	<i>Leptothyrites dominicanus</i>	leaf spot	monocot, possibly a grass	Dominican amber	Poinar, 2003
Ascomycota 15	Hypocreales	Ophiocordycipitaceae	<i>Paleoophiocordyceps coccophagus</i>	zombification ⁶	[species indet], Orthozoidea (Albicoccidae), a scale insect	Myanmar amber	Sung, et al., 2008

ANIMALIA³							
Nematomorpha 16	Gordioidea	Chordodidae	<i>Paleochordodes protus</i>	hairworm disease	cf. <i>Supella</i> (Blattellidae), a cockroach	Dominican Republic	Poinar, 1999b
Nematomorpha 17	Gordioidea	Chordodidae	<i>Cretachordotes burmiticus</i>	hairworms disease	[undetermined arthropod]	Myanmar amber	Poinar and Buckley, 2006
Nematoda 18	Mermithida	Allantonematidae	[undetermined]	filariasis	<i>Chymomyza primaeva</i> (Drosophilidae), a pomace fly	Dominican amber	Poinar, 2010
Nematoda 19	Mermithida	Mermithidae	<i>Heydenius myrmecophila</i>	filariasis	<i>Linepithene</i> sp. (Formicidae), an ant	Dominican amber	Poinar et al., 2006
Nematoda 20	Mermithida	Mermithidae	<i>Heydenius trichorosis</i>	filariasis	<i>Triaenodes balticus</i> (Leptoceridae), a caddisfly	Baltic amber	Poinar, 2014

¹Major centered headings in upper-case and bold lettering are kingdoms.

²In fifteen of these associations involving an arthropod (minus the monocot and the nematode), the parasitized taxon is listed in this column. In most of the cases, the parasitized arthropod is probably the only or the ultimate host; however, the possibility remains that some of these arthropods could be vectors that transmit the offending disease.

³Some of these records need confirmation by modern techniques, particularly as the original reports date from the 1990's.

⁴Based on the tight integration of polydnavirus genomes into the braconid wasp genome (Poinar et al., 1976).

⁵Bacteria at the tip of the stylet proboscis "...have the morphological features of *Yersinia* ...", but their identity could not be confirmed (Poinar, 2014).

⁶See Hughes et al. (2011) for an explanation of the process of zombification in an ant from the lower Eocene of Messel, Germany.