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A turbo-taxonomic study of Thai *Aleiodes* (*Aleiodes*) and *Aleiodes* (*Arcaleiodes*) (Hymenoptera: Braconidae: Rogadinae) based largely on COI barcoded specimens, with rapid descriptions of 179 new species

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Table of contents

Abstract	6
Introduction	7
Materials and methods	10
Results	10
Key to the <i>Aleiodes</i> (<i>Aleiodes</i>) and <i>Aleiodes</i> (<i>Arcaleiodes</i>) species of Thailand	18
Treatment of species	33
<i>Aleiodes achingae</i> sp. nov.	33
<i>Aleiodes aciculodeum</i> sp. nov.	33
<i>Aleiodes abditivus</i> (Long & van Achterberg, 2008), comb. nov.	35
<i>Aleiodes adorabelleae</i> sp. nov.	36
<i>Aleiodes agagg</i> sp. nov.	36
<i>Aleiodes albsoluteus</i> sp. nov.	37
<i>Aleiodes anguuae</i> sp. nov.	38
<i>Aleiodes angulodeum</i> sp. nov.	39
<i>Aleiodes antescutum</i> sp. nov.	40
<i>Aleiodes apiconigrus</i> sp. nov.	41
<i>Aleiodes archicolorus</i> sp. nov.	42
<i>Aleiodes areelucki</i> sp. nov.	43
<i>Aleiodes ascrobi</i> sp. nov.	44
<i>Aleiodes asperum</i> sp. nov.	45
<i>Aleiodes atuin</i> sp. nov.	46
<i>Aleiodes bachma</i> (Long & van Achterberg, 2008), comb. nov.	47
<i>Aleiodes bachmaduplus</i> sp. nov.	48
<i>Aleiodes bachmatriplus</i> sp. nov.	49
<i>Aleiodes basipunctatus</i> sp. nov.	50
<i>Aleiodes basistriatus</i> sp. nov.	51
<i>Aleioides binkyi</i> sp. nov.	52
<i>Aleiodes biscutus</i> sp. nov.	53
<i>Aleiodes bobwhartoni</i> sp. nov.	54
<i>Aleiodes brevimediatus</i> sp. nov.	55
<i>Aleiodes brunniguttatus</i> sp. nov.	56
<i>Aleiodes butcheri</i> sp. nov.	57
<i>Aleiodes buzurae</i> He & Chen, 1990	57
<i>Aleiodes buzuriduplus</i> sp. nov.	58
<i>Aleiodes buzuriquadruplus</i> sp. nov.	59
<i>Aleiodes buzuritriplus</i> sp. nov.	60
<i>Aleiodes calicis</i> sp. nov.	61
<i>Aleiodes calvus</i> sp. nov.	62
<i>Aleiodes canus</i> sp. nov.	63
<i>Aleiodes caprinus</i> sp. nov.	64
<i>Aleiodes castaneus</i> sp. nov.	66
<i>Aleiodes centralis</i> sp. nov.	67
<i>Aleiodes chamba</i> sp. nov.	67
<i>Aleiodes chenduplus</i> sp. nov.	69
<i>Aleiodes cheni</i> sp. nov.	70
<i>Aleiodes codon</i> sp. nov.	71
<i>Aleiodes complexus</i> sp. nov.	71
<i>Aleiodes concoronarius</i> sp. nov.	72
<i>Aleiodes conina</i> sp. nov.	74
<i>Aleiodes connudatum</i> sp. nov.	76
<i>Aleiodes conjectenus</i> sp. nov.	77
<i>Aleiodes constriatum</i> sp. nov.	78
<i>Aleiodes contemptus</i> sp. nov.	79
<i>Aleiodes convexus</i> van Achterberg, 1991	80
<i>Aleiodes coronopus</i> sp. nov.	80
<i>Aleiodes corrusciput</i> sp. nov.	81
<i>Aleiodes crimum</i> sp. nov.	82
<i>Aleiodes curtivena</i> sp. nov.	83
<i>Aleiodes curvicauda</i> sp. nov.	84
<i>Aleiodes damus</i> sp. nov.	85
<i>Aleiodes darlingtonia</i> sp. nov.	86
<i>Aleiodes deathi</i> sp. nov.	87
<i>Aleiodes definus</i> sp. nov.	88
<i>Aleiodes deyoyoi</i> sp. nov.	89

<i>Aleiodes dimorphus</i> sp. nov.	90
<i>Aleiodes divergerus</i> sp. nov.	91
<i>Aleiodes downeyi</i> sp. nov.	93
<i>Aleiodes eadyi</i> sp. nov.	94
<i>Aleiodes elongatus</i> sp. nov.	95
<i>Aleiodes etvalinus</i> sp. nov.	96
<i>Aleiodes faciei</i> sp. nov.	97
<i>Aleiodes flannelfooti</i> sp. nov.	98
<i>Aleiodes flavostriatus</i> sp. nov.	100
<i>Aleiodes fovodeum</i> sp. nov.	101
<i>Aleiodes fuscomedius</i> sp. nov.	101
<i>Aleiodes gaga</i> sp. nov.	102
<i>Aleiodes gaspodei</i> sp. nov.	103
<i>Aleiodes georgiae</i> sp. nov.	105
<i>Aleiodes glabribasalis</i> sp. nov.	105
<i>Aleiodes globofemurus</i> sp. nov.	106
<i>Aleiodes glutinum</i> sp. nov.	107
<i>Aleiodes griseimaculatus</i> sp. nov.	108
<i>Aleiodes guidae</i> sp. nov.	109
<i>Aleiodes hei</i> sp. nov.	111
<i>Aleiodes herrena</i> sp. nov.	111
<i>Aleiodes helenippersonsae</i> sp. nov.	112
<i>Aleiodes hircus</i> sp. nov.	113
<i>Aleiodes incisus</i> sp. nov.	114
<i>Aleiodes jimwhitfieldi</i> sp. nov.	116
<i>Aleiodes kitchingi</i> sp. nov.	117
<i>Aleiodes klopfsteinae</i> sp. nov.	117
<i>Aleiodes lavaeolous</i> sp. nov.	118
<i>Aleiodes lemniscus</i> sp. nov.	119
<i>Aleiodes liessa</i> sp. nov.	120
<i>Aleiodes lipwigduplicitus</i> sp. nov.	121
<i>Aleiodes lipwigi</i> sp. nov.	122
<i>Aleiodes lobocarinus</i> sp. nov.	124
<i>Aleiodes longivena</i> sp. nov.	125
<i>Aleiodes macroophthalmus</i> sp. nov.	126
<i>Aleiodes maculiput</i> sp. nov.	127
<i>Aleiodes magratiae</i> sp. nov.	129
<i>Aleiodes maliarius</i> sp. nov.	129
<i>Aleiodes malichi</i> sp. nov.	131
<i>Aleiodes mediofuscus</i> sp. nov.	132
<i>Aleiodes mediomaculatus</i> sp. nov.	133
<i>Aleiodes megaophthalmos</i> sp. nov.	134
<i>Aleiodes mellificus</i> sp. nov.	135
<i>Aleiodes mericeti</i> sp. nov.	135
<i>Aleiodes microophthalmos</i> sp. nov.	136
<i>Aleiodes molecryptus</i> sp. nov.	137
<i>Aleiodes morti</i> sp. nov.	138
<i>Aleiodes mutilus</i> sp. nov.	139
<i>Aleiodes narangae</i> Rohwer (1934)	141
<i>Aleiodes nathismus</i> sp. nov.	141
<i>Aleiodes necsubson</i> sp. nov.	142
<i>Aleiodes niveni</i> sp. nov.	144
<i>Aleiodes nivori</i> sp. nov.	145
<i>Aleiodes nonicones</i> sp. nov.	145
<i>Aleiodes occimaculatus</i> sp. nov.	146
<i>Aleiodes opus</i> sp. nov.	148
<i>Aleiodes orion</i> sp. nov.	149
<i>Aleiodes paenicarinus</i> sp. nov.	150
<i>Aleiodes pallimedius</i> sp. nov.	151
<i>Aleiodes palmae</i> sp. nov.	152
<i>Aleiodes palmatipes</i> sp. nov.	153
<i>Aleiodes parabuzurae</i> sp. nov.	154
<i>Aleiodes parasongsi</i> sp. nov.	155
<i>Aleiodes parisae</i> sp. nov.	156
<i>Aleiodes paulmarshi</i> sp. nov.	158
<i>Aleiodes pectopulicis</i> sp. nov.	158

<i>Aleiodes pectunguis</i> sp. nov.	160
<i>Aleiodes pectunguisella</i> sp. nov.	161
<i>Aleiodes penultimoluteus</i> sp. nov.	161
<i>Aleiodes phantasmatis</i> sp. nov.	162
<i>Aleiodes pinnulae</i> sp. nov.	163
<i>Aleiodes placidus</i> sp. nov.	164
<i>Aleiodes polititergus</i> sp. nov.	166
<i>Aleiodes ponderi</i> sp. nov.	167
<i>Aleiodes postmaculus</i> sp. nov.	168
<i>Aleiodes prillae</i> sp. nov.	169
<i>Aleiodes probuzarae</i> sp. nov.	170
<i>Aleiodes procarinatus</i> sp. nov.	171
<i>Aleiodes procoronarius</i> sp. nov.	172
<i>Aleiodes pronopus</i> sp. nov.	173
<i>Aleiodes propodealis</i> sp. nov.	175
<i>Aleiodes propodocarinus</i> sp. nov.	175
<i>Aleiodes protocastaneus</i> sp. nov.	177
<i>Aleiodes pseudicones</i> sp. nov.	178
<i>Aleiodes pteppicymoni</i> sp. nov.	179
<i>Aleiodes ptraci</i> sp. nov.	180
<i>Aleiodes rectanguliguttatus</i> sp. nov.	182
<i>Aleiodes ridecallyi</i> sp. nov.	185
<i>Aleiodes rincewindi</i> sp. nov.	186
<i>Aleiodes risaee</i> sp. nov.	187
<i>Aleiodes rivulus</i> sp. nov.	187
<i>Aleiodes (Hemigyroneuron) roberti</i> Areekul-Butcher & Quicke, 2011	189
<i>Aleiodes rufomedius</i> sp. nov.	189
<i>Aleiodes rugoscutus</i> sp. nov.	190
<i>Aleiodes sacharissa</i> sp. nov.	192
<i>Aleiodes scottshawi</i> sp. nov.	193
<i>Aleiodes selachii</i> sp. nov.	194
<i>Aleiodes sesquipunctatus</i> sp. nov.	195
<i>Aleiodes similicodon</i> sp. nov.	196
<i>Aleiodes songsi</i> sp. nov.	197
<i>Aleiodes sophieae</i> sp. nov.	198
<i>Aleiodes spurivena</i> Quicke & Butcher, 2011	199
<i>Aleiodes stibbonsi</i> sp. nov.	200
<i>Aleiodes stohelit</i> sp. nov.	201
<i>Aleiodes subemarginatus</i> sp. nov.	202
<i>Aleiodes subfuscomedius</i> sp. nov.	203
<i>Aleiodes submediofuscus</i> sp. nov.	205
<i>Aleiodes subson</i> sp. nov.	205
<i>Aleiodes sutthisani</i> sp. nov.	206
<i>Aleiodes synorion</i> sp. nov.	207
<i>Aleiodes teatimei</i> sp. nov.	208
<i>Aleiodes tetrarugulosus</i> sp. nov.	210
<i>Aleiodes thirakupti</i> sp. nov.	211
<i>Aleiodes tmaliaae</i> sp. nov.	212
<i>Aleiodes tobiasi</i> sp. nov.	213
<i>Aleiodes transvena</i> sp. nov.	214
<i>Aleiodes tricoloripes</i> sp. nov.	215
<i>Aleiodes trisphaeropyx</i> sp. nov.	216
<i>Aleiodes tulipus</i> sp. nov.	218
<i>Aleiodes turgidipalpus</i> sp. nov.	218
<i>Aleiodes valinus</i> sp. nov.	219
<i>Aleiodes variifemurus</i> sp. nov.	221
<i>Aleiodes veticinarii</i> sp. nov.	222
<i>Aleiodes vietuput</i> sp. nov.	223
<i>Aleiodes yalaensis</i> sp. nov.	224
<i>Aleiodes zuburiae</i> sp. nov.	226
<i>Aleiodes (Arcaleiodes) dresdeni</i> sp. nov.	227
<i>Aleiodes (Arcaleiodes) siamensis</i> sp. nov.	228
<i>Aleiodes (Arcaleiodes) vanachterbergi</i> sp. nov.	229
Discussion	230
Acknowledgements	230
References	231

Abstract

The *Aleiodes* (*Aleiodes*) and *Aleiodes* (*Arcaleiodes*) species of Thailand are revised based on extensive recent collecting as well as existing museum material, and combining evidence from DNA barcoding (5' end of mitochondrial cytochrome oxidase 1) for sequenced material with species known from morphological data alone. The approach taken (here termed ‘turbo-taxonomy’) has been to rely heavily on colour light microscopy photographic illustration, with brief descriptions contributing principally to characters that are not apparent from the micrographs. All new species are attributed to Quicke & Butcher. Although the very high level of diversity of the Thai fauna means this is necessarily preliminary, in the sense that there are undoubtedly many more species awaiting to be described, it is the first reasonably comprehensive study of a tropical *Aleiodes* fauna. One hundred and seventy six new species of the subgenus *Aleiodes* (viz. *Aleiodes achingae* sp. nov., *Aleiodes aciculodeum* sp. nov., *Aleiodes adorabelleae* sp. nov., *Aleiodes agagg* sp. nov., *Aleiodes alboluteus* sp. nov., *Aleiodes anguuae* sp. nov., *Aleiodes angulodeum* sp. nov., *Aleiodes antescutum* sp. nov., *Aleiodes apiconigrus* sp. nov., *Aleiodes archicolorus* sp. nov., *Aleiodes areelucki* sp. nov., *Aleiodes ascrobi* sp. nov., *Aleiodes asperum* sp. nov., *Aleiodes atuin* sp. nov., *Aleiodes bachmaduplus* sp. nov., *Aleiodes bachmatriplus* sp. nov., *Aleiodes basipunctatus* sp. nov., *Aleiodes basistriatus* sp. nov., *Aleiodes binkyi* sp. nov., *Aleiodes biscutus* sp. nov., *Aleiodes bobwhartoni* sp. nov., *Aleiodes brevimedius* sp. nov., *Aleiodes brunniguttatus* sp. nov., *Aleiodes butcheri* sp. nov., *Aleiodes buzuriduplus* sp. nov., *Aleiodes buzuriquadruplus* sp. nov., *Aleiodes buzuritriplus* sp. nov., *Aleiodes calicis* sp. nov., *Aleiodes calvus* sp. nov., 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An illustrated identification key provided, and some novel and hardly used characters are discussed and illustrated. Morphological and molecular comparison of these species with the better-known Holarctic fauna shows that several previously unrecognised species groups may be distinguished. Based on the Chao 1 diversity estimator, which additionally takes into account the number of specimens represented by precisely one, and the number represented by precisely two individuals, it is estimated that when fully known, the Thai fauna includes at least 438 species of *Aleiodes*.