

Figure S1. Range diagram of flora and fauna identified within the Fenghuoshan, Tuotuohe, Yaxicuo, and Wudaoliang Groups.

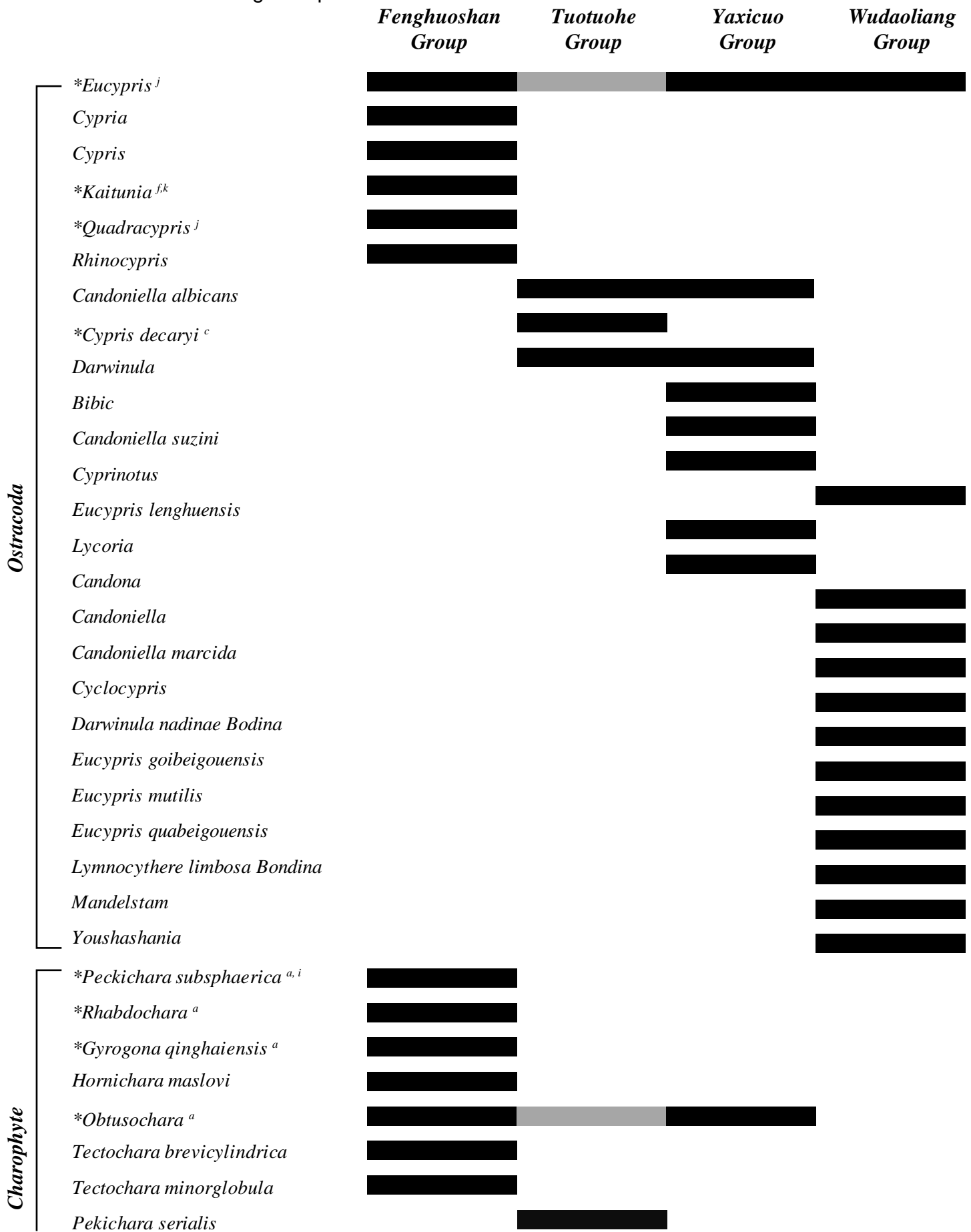


Figure S1 continued

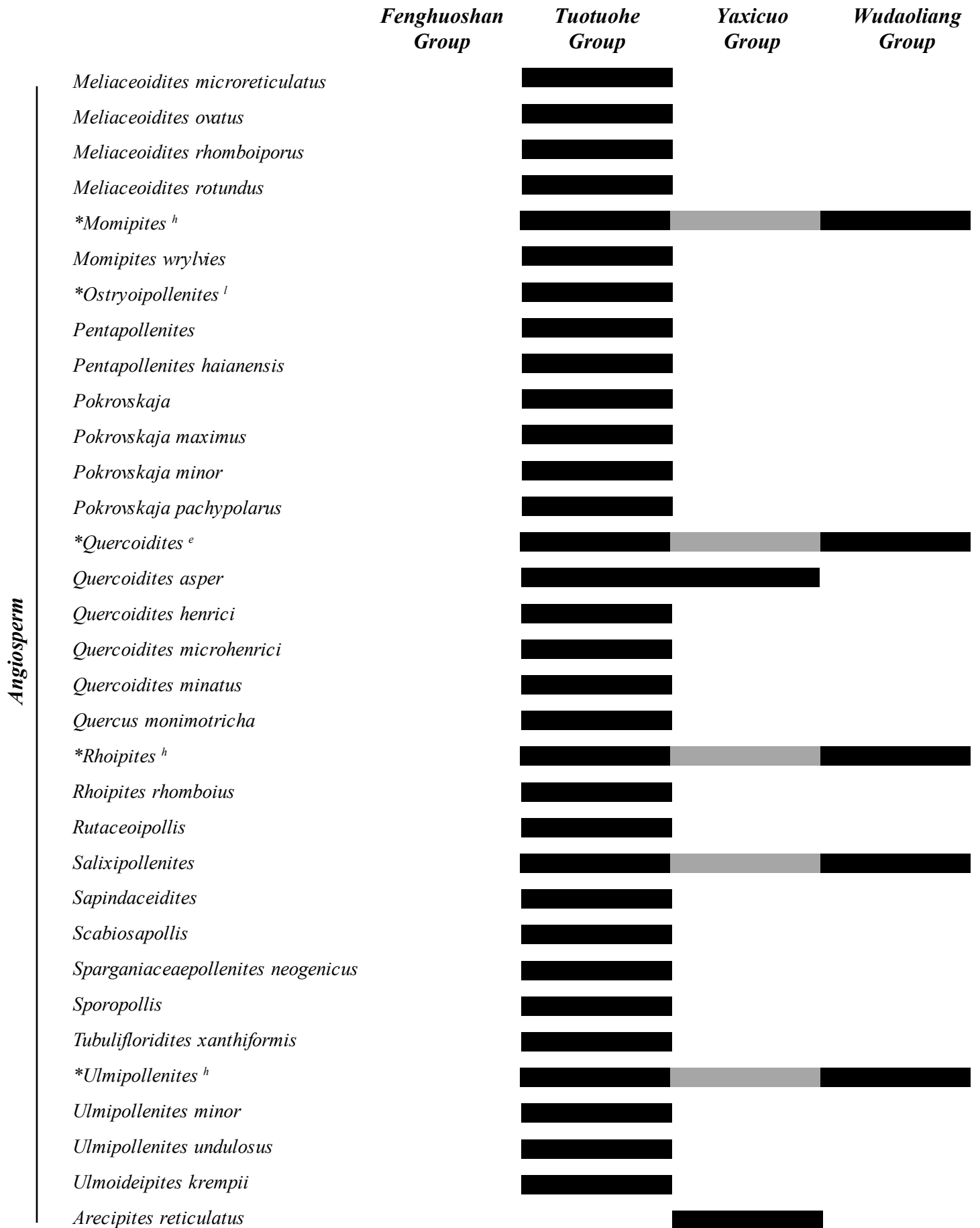


Figure S1 continued

	<i>Fenghuoshan Group</i>	<i>Tuotuohe Group</i>	<i>Yaxicuo Group</i>	<i>Wudaoliang Group</i>
<i>Angiosperm</i>	<i>Araliaceoipollenites euphorii</i>		██████████	
	<i>Brevitricolpites</i>		██████████	
	<i>Celtispollenites minor</i>		██████████	
	<i>Chenopodipollis cf. multiplex</i>		██████████	
	<i>Cruciferaeipites minor</i>		██████████	
	<i>Cupuliferoipollenites fusus</i>		██████████	
	<i>Fraxinoipollenites genuinus</i>		██████████	
	<i>Ilexpollenites margaritus</i>		██████████	
	<i>Interulobites exuperans</i>		██████████	
	<i>Leptolepidites major</i>		██████████	
	<i>Lonicerapollis echinatus</i>		██████████	
	<i>Lonicerapollis granulatus</i>		██████████	
	<i>Lonicerapollis interspinosus</i>		██████████	
	<i>Lonicerapollis intrabaculus</i>		██████████	
	<i>Lonicerapollis lenghuensis</i>		██████████	
	<i>Lonicerapollis parvina</i>		██████████	
	<i>Lonicerapollis simplex</i>		██████████	
	<i>Lonicerapollis tenuipolaris</i>		██████████	
	<i>Lonicerapollis xiangxiangensis</i>		██████████	
	<i>Magnolipollis magnolioides</i>		██████████	
	<i>Magnolipollis micropunctatus</i>		██████████	
	<i>Momipites coryloides</i>		██████████	
	<i>Nymphaeacidites echinatus</i>		██████████	
	<i>Nyssapollenites pseudolaesus</i>		██████████	
	<i>Populus</i>		██████████	
	<i>Nyssapollenites rodderensis</i>		██████████	
	<i>Potamogetonacidites minor</i>		██████████	
	<i>Potamogetonacidites natanoides</i>		██████████	
	<i>Quercoidites robusteus</i>		██████████	
	<i>Ranunculacidites comunenloides</i>		██████████	
<i>Retitricolpites matauraensis</i>		██████████		

Figure S1 continued

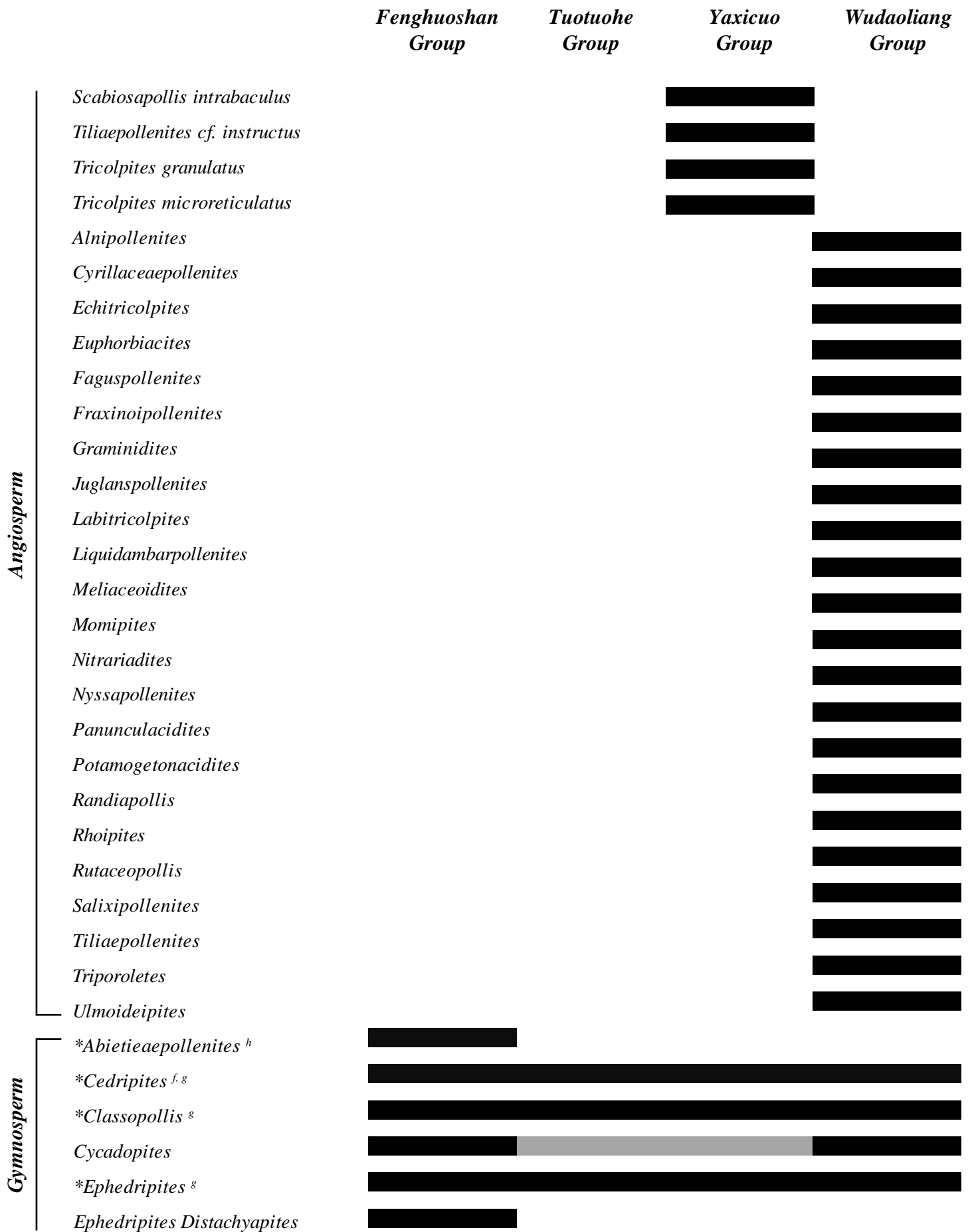
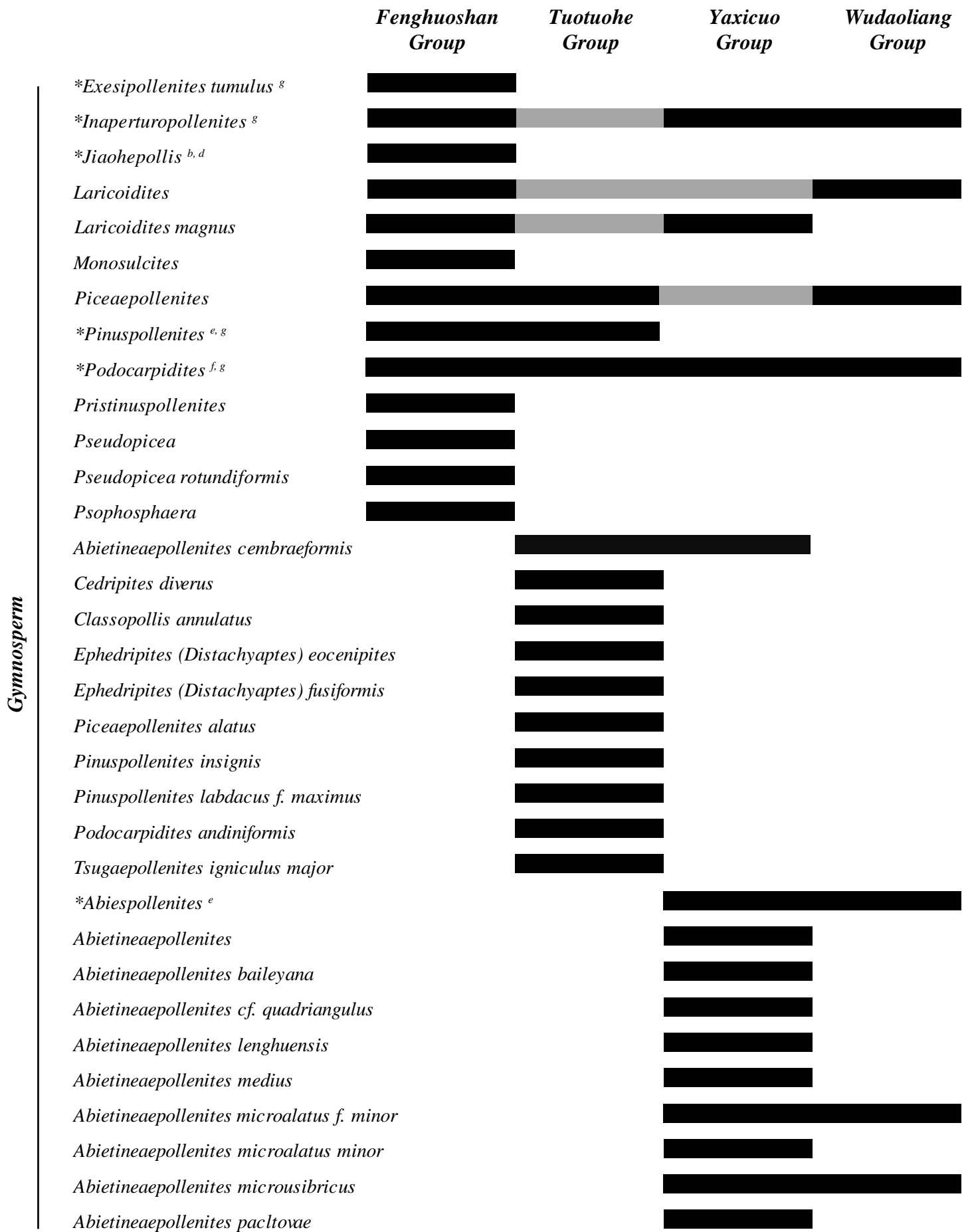


Figure S1 continued



Gymnosperm

Figure S1 continued

	<i>Fenghuoshan Group</i>	<i>Tuotuohe Group</i>	<i>Yaxicuo Group</i>	<i>Wudaoliang Group</i>
<i>Gymnosperm</i>	<i>Abietinaepollenites quadriangulus</i>		██████████	
	<i>Cedripites cornisaccatus</i>		██████████	
	<i>Cedripites microsaccoides</i>		██████████	
	<i>Cedripites pachydermus</i>		██████████	
	<i>Cedripites reniformis</i>		██████████	
	<i>Cedripites trapeziformis</i>		██████████	
	<i>Ephedripites baculatus</i>		██████████	
	<i>Ephedripites dafengshanensis</i>		██████████	
	<i>Ephedripites fushunensis</i>		██████████	
	<i>Ephedripites ganchaigouensis</i>		██████████	
	<i>Ephedripites obsus</i>		██████████	
	<i>Ephedripites strigatus</i>		██████████	
	<i>Ephedripites trinata</i>		██████████	
	<i>Inaperturopollenites dubius</i>		██████████	
	<i>Inaperturopollenites psilosus</i>		██████████	
	<i>Keteleeriaepollenites dubius</i>		██████████	
	<i>Laricoidites araucarites</i>		██████████	
	<i>Peltandripites laurusiformis</i>		██████████	
	<i>Piceapollis</i>		██████████	
	<i>Piceapollis alatus</i>		██████████	
	<i>Piceapollis gigantea</i>		██████████	
	<i>Piceapollis planoides</i>		██████████	
	<i>Piceapollis tobolicus</i>		██████████	
	<i>Pinaceae</i>		██████████	
	<i>Pinuspollenites labdacus f. maximus</i>		██████████	
	<i>Pinuspollenites labdacus f. minor</i>		██████████	
	<i>Pinuspollenites microinsignis</i>		██████████	
	<i>Pinuspollenites rotundocarpus</i>		██████████	
	<i>Pinuspollenites taedaeformis</i>		██████████	
	<i>Podocarapites elongatus</i>		██████████	
	<i>Podocarapites quadracoxpus</i>		██████████	
	<i>Taxodiaceapollenites bockwitzensis</i>		██████████	
	<i>Taxodiaceapollenites hiatus</i>		██████████	

Figure S1 continued

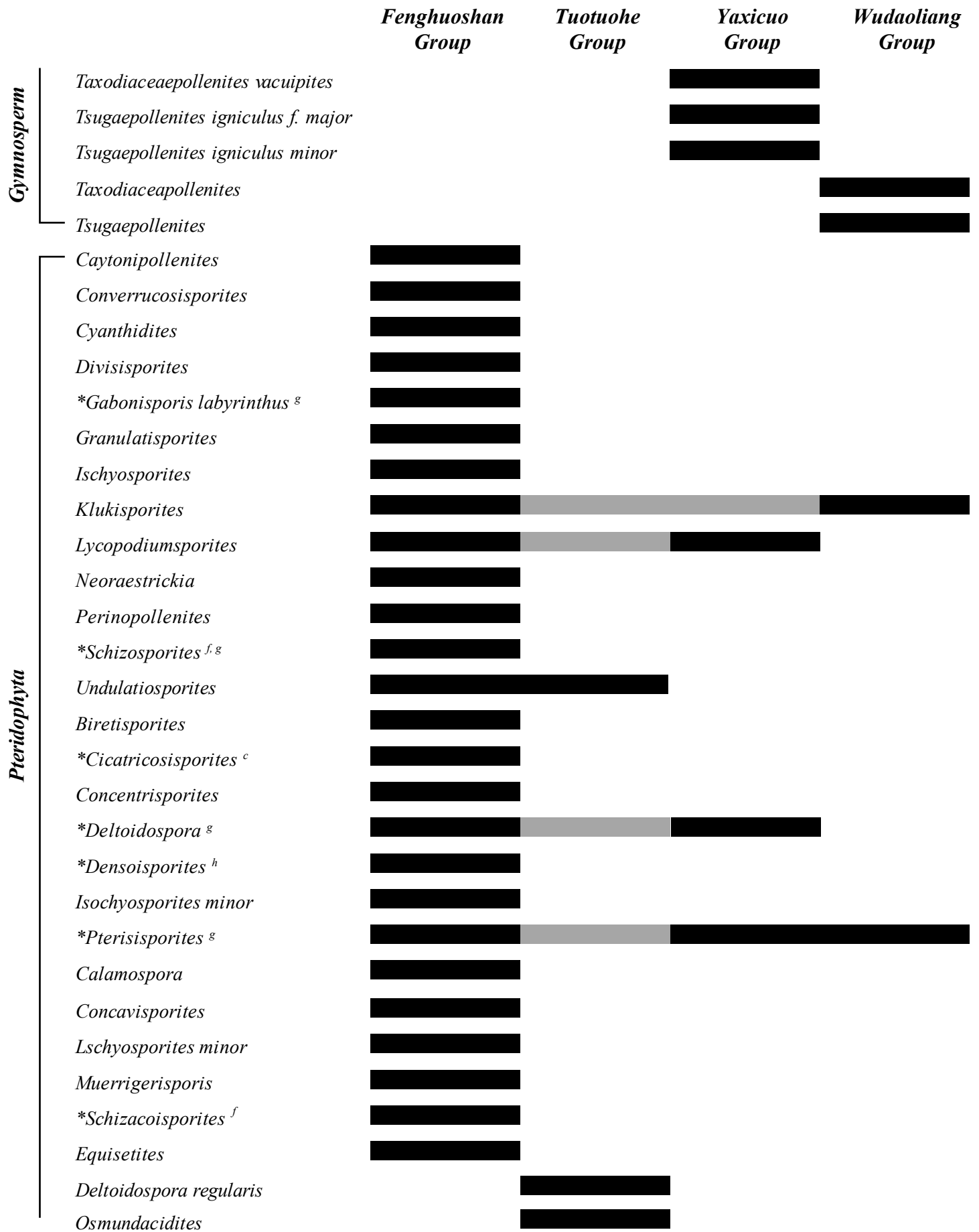


Figure S1 continued

	<i>Fenghuoshan Group</i>	<i>Tuotuohe Group</i>	<i>Yaxicuo Group</i>	<i>Wudaoliang Group</i>
<i>Pteridophyta</i>	<i>Polypodiisporites</i>	██████████		
	<i>Pteris neocretica</i>	██████████		
	<i>Pterisisporites undulatus</i>	██████████		
	<i>Toroisporis planivercosus</i>	██████████		
	<i>Cyathidites minor</i>			██████████
	<i>Deltoidospora brevis</i>			██████████
	<i>Deltoidospora microlepioidites</i>			██████████
	<i>Deltoidospora regularis</i>			██████████
	<i>Deltoidospora seidewitzensis</i>			██████████
	<i>Hymenophyllumsporites gracilis</i>			██████████
	<i>Hymenophyllumsporites pseudoreticulatus</i>			██████████
	<i>Lycopodiumsporites neogenicus</i>			██████████
	<i>Osmundacidites nanus</i>			██████████
	<i>Osmundacidites nicanicus</i>			██████████
	<i>Osmundacidites oligocaenicus</i>			██████████
	<i>Osmundacidites orbiculatus</i>			██████████
	<i>Osmundacidites parusde</i>			██████████
	<i>Osmundacidites semiprimarius</i>			██████████
	<i>Osmundacidites wellmanii</i>			██████████
	<i>Polypodiaceasporites</i>			██████████
	<i>Polypodiaceasporites gracilis</i>			██████████
	<i>Polypodiaceasporites haardti</i>			██████████
	<i>Polypodiaceasporites regularis</i>			██████████
	<i>Polypodiaceasporites seidewitzensis</i>			██████████
	<i>Pterisisporites danyangensis</i>			██████████
	<i>Pterisisporites dayuensis</i>			██████████
	<i>Pterisisporites granulatus</i>			██████████
	<i>Pterisisporites hengyangensis</i>			██████████
	<i>Striatricolporites nanhaiensis</i>			██████████
	<i>Toroisporis longilaesuratus</i>			██████████
	<i>Toroisporis minor</i>			██████████
	<i>Zlvisporis bireticularis</i>			██████████
	<i>Zlvisporis novamexicanum</i>			██████████

Figure S1 continued

	<i>Fenghuoshan Group</i>	<i>Tuotuohe Group</i>	<i>Yaxicuo Group</i>	<i>Wudaoliang Group</i>
<i>Pteridophyta</i>	<i>Contignisporites</i>			██████████
	<i>Polypodiaceasporites</i>			██████████
	<i>Sphagnumsporites</i>			██████████
	<i>Undulatisporites</i>			██████████
	<i>Verrutetraspora verrucosa</i>			██████████
<i>Algae</i>	<i>Campenia</i>			██████████
	<i>Dicellaesporites</i>			██████████
	<i>Inapertisporites</i>			██████████
	<i>Leiosphaeridia</i>			██████████
	<i>Multicellaesporites</i>			██████████
	<i>Ovoidites</i>			██████████
<i>Thallophyta</i>	<i>Staphlosporites</i>			██████████
	<i>Admolia</i>	██████████		
	<i>Pediastrum</i>	██████████		

* taxa denoted with astrisk provide important age restrictive information. Superscript letters following fossil name correlate to the literary references identified below.

- a Chen, L., & Xie, Y. S. (2011). Discussion of Paleocene-Eocene Boundary of SanShui Basin. *Advanced Materials Research*, 236, 2487-2490.
- b Chen, P. J. (1988). Distribution and migration of the Jehol Fauna with reference to non-marine Jurassic-Cretaceous boundary in China. *Acta Palaeontologica Sinica*, 27, 659-683.
- c He, J. D., Van Nieuwenhuise, D. S., & Swain, F. M. (1988). Biostratigraphy of Paleogene non-marine Ostracoda from east China. *Developments in Palaeontology and Stratigraphy*, 11, 1153-1161.
- d Li, W., & Liu, Z. (1994). The Cretaceous palynofloras and their bearing on stratigraphic correlation in China. *Cretaceous Research*, 15(3), 333-365.
- e Li, J., Batten, D. J., & Zhang, Y. (2011). Palynological record from a composite core through Late Cretaceous–early Paleocene deposits in the Songliao Basin, Northeast China and its biostratigraphic implications. *Cretaceous Research*, 32(1), 1-12.
- f Mateer, N. J., & Pei-ji, C. (1992). A review of the nonmarine Cretaceous-Tertiary transition in China. *Cretaceous research*, 13(1), 81-90.
- g Song, Z., & Huang, F. (1997). Comparison of palynomorph assemblages from the Cretaceous/Tertiary boundary interval in Western Europe, northwest Africa and southeast China. *Cretaceous Research*, 18(6), 865-871.
- h Song, Z., Zheng, Y., & Liu, J., (1995). Palynological assemblages across the Cretaceous/Tertiary boundary in northern Jiangsu, eastern China. *Cretaceous Research*, 16(4), 465-482.
- i Van Itterbeeck, J., Missiaen, P., Folie, A., Markevich, V. S., Van Damme, D., Dian-Yong, G., & Smith, T. (2007). Woodland in a fluvio-lacustrine environment on the dry Mongolian Plateau during the late Paleocene: Evidence from the mammal bearing Subeng section (Inner Mongolia, PR China). *Palaeogeography, Palaeoclimatology, Palaeoecology*, 243(1), 55-78.
- j Ye, C. (1994). Succession of Cypridacea (Ostracoda) and nonmarine Cretaceous stratigraphy of China. *Cretaceous Research*, 15(3), 285-303.
- k Zhang, Z., Liu, Z., Wang, B., Xhang, Y., Ye & D. (2007). Ostracod biostratigraphy of the Late Cretaceous Qingshankou formation in the Songliao Basin. *Acta Geologica Sinica-English Edition*, 81(5), 727-738.
- l Crane, P. R., & Stockey, R. A. (1987). *Betula* leaves and reproductive structures from the Middle Eocene of British Columbia, Canada. *Canadian Journal of Botany*, 65(12), 2490-2500.
- m Manchester, S. R. (1987). The fossil history of the Juglandaceae. *Monographs in Systematic Botany, Missouri bot. Gard*, 21, 1-137.