

Supplementary files

First Record of *Osphyra* (Melandryidae: Osphyinae) from Chinese Mainland Based on Morphological Evidence and Mitochondrial Genome-Based Phylogeny of Tenebrionoidea [†]

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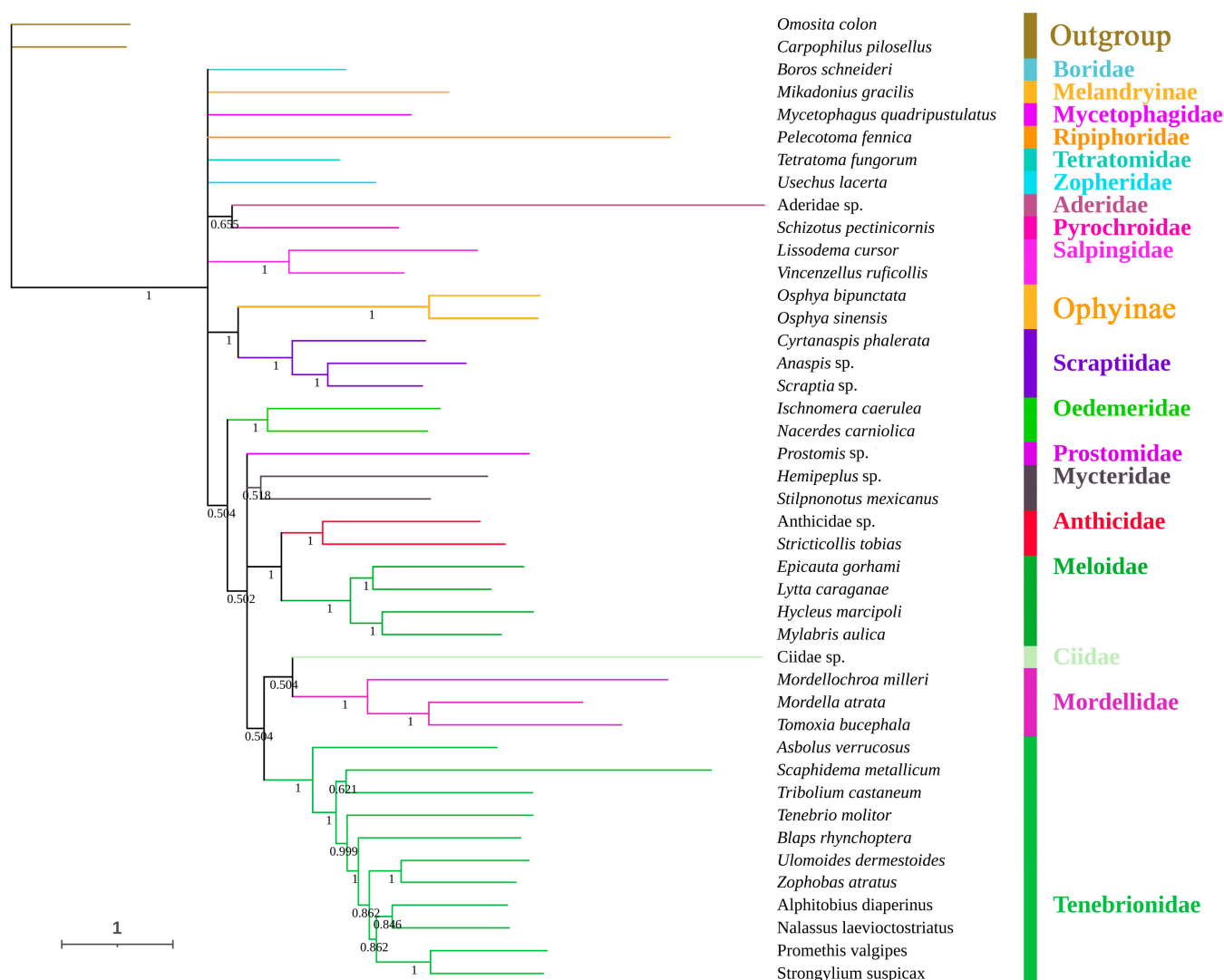


Figure S1 Phylogenetic tree of Tenebrionoidea produced from BI analysis based on 13 PCGs (PP values indicated in each clade)

Table S1 Distribution information of the *Osphya* species in the Oriental and eastern and southern Palaearctic regions.

| Species | Distribution | Longitude | Latitude | Source |
|---|--|-----------|----------|------------|
| <i>Osphya formosana</i> Pic, 1927 | China: Taiwan | 121.29578 | 24.99511 | [14] |
| <i>Osphya trilineata</i> Pic, 1910 | China: Taiwan | 121.29578 | 24.99511 | [10] |
| <i>Osphya orientalis</i> (Lewis, 1895) | Japan, Miyanoshta | 139.06054 | 35.23929 | [5] |
| | Japan, Nikko | 139.54738 | 36.79846 | [5] |
| <i>Osphya albofasciata</i> Champion, 1916 | India: Assam, Patkai Mts. | 95.99960 | 27.00004 | [7] |
| <i>Osphya harmandi</i> Pic, 1926 | India: Sikkim | 88.48946 | 27.21889 | [13] |
| | India: Darjeeling District | 88.27189 | 27.02923 | [13] |
| <i>Osphya dissimilis</i> Champion, 1922 | India: Uttarakhand, Uttar pradesh | 79.06097 | 30.14047 | [9] |
| <i>Osphya nigriventris</i> Champion, 1920 | India: Uttarakhand, Uttar pradesh | 79.06097 | 30.14047 | [8] |
| <i>Osphya nigroapicalis</i> Pic, 1921 | India. | 88.27189 | 27.02923 | [11] |
| <i>Osphya nilgirica</i> Champion, 1916 | India: Nilgiri Hills | 76.76198 | 11.37447 | [7] |
| <i>Osphya rufa</i> Pic, 1927b | Vietnam: Chapa | 103.96834 | 22.50462 | [15] |
| <i>Osphya superba</i> Pic, 1927 | Vietnam: Chapa | 103.96834 | 22.50462 | [15] |
| <i>Osphya melina</i> Champion, 1916 | Myanmar: Tenasserim, Victoria Point. | 98.55190 | 9.99258 | [7] |
| <i>Osphya sinensis</i> sp. nov. | China: Hubei, Shennongjia, Dajiuahu, Luoyanghe | 110.13778 | 31.57722 | This study |
| | China: Hubei, Shennongjia, Dajiuahu, Dongxi | 110.12194 | 31.53944 | — |
| | China: Hubei, Shennongjia, Muyu, Yanjiawan | 110.43417 | 31.47722 | — |
| | | | | |

Table S2 The best partitioning schemes and models for the Maximum Likelihood (ML) method

| Partitions | Models | Genes |
|------------|-----------|-----------|
| P1 | GTR+F+I+G | atp6 |
| P2 | TIM+F+I+G | atp8 |
| P3 | GTR+F+I+G | cox1,cox2 |
| P4 | GTR+F+I+G | cox3 |
| P5 | GTR+F+I+G | cytb |
| P6 | GTR+F+I+G | nad1 |
| P7 | TIM+F+I+G | nad2 |
| P8 | TIM+F+I+G | nad3 |
| P9 | GTR+F+I+G | nad4L |
| P10 | GTR+F+I+G | nad4,nad5 |
| P11 | TIM+F+I+G | nad6 |

Table S3 The best partitioning schemes and models for the Bayesian Inference (BI) method

| Partitions | Models | Genes |
|------------|---------|--------------------------------|
| P1 | GTR+I+G | atp6_pos1,cytb_pos1 |
| P2 | GTR+I+G | atp6_pos2 |
| P3 | GTR+G | atp6_pos3,atp8_pos3,nad3_pos3 |
| P4 | GTR+I+G | atp8_pos1,nad6_pos1 |
| P5 | GTR+I+G | atp8_pos2,nad2_pos2,nad3_pos2 |
| P6 | GTR+I+G | cox1_pos1, |
| P7 | GTR+I+G | cox1_pos2 |
| P8 | GTR+I+G | cox1_pos3 |
| P9 | GTR+I+G | cox2_pos1, cox3_pos2 |
| P10 | GTR+I+G | cox2_pos2 |
| P11 | HKY+G | cox2_pos3 |
| P12 | GTR+I+G | cox3_pos2 |
| P13 | GTR+G | cox3_pos3,cybt_pos3 |
| P14 | GTR+I+G | cytb_pos2 |
| P15 | GTR+I+G | nad1_pos1 |
| P16 | GTR+I+G | nad1_pos2 |
| P17 | GTR+G | nad1_pos3 |
| P18 | GTR+I+G | nad2_pos1 |
| P19 | HKY+G | nad2_pos3 |
| P20 | GTR+I+G | nad3_pos1 |
| P21 | GTR+I+G | nad4L_pos1,nad5_pos1 |
| P22 | GTR+G | nad4L_pos2 |
| P23 | GTR+I+G | nad5_pos3,nad4L_pos3,nad4_pos3 |
| P24 | GTR+I+G | nad4_pos1 |
| P25 | GTR+I+G | nad5_pos2,nad4_pos2, |
| P26 | GTR+I+G | nad6_pos2 |
| P27 | HKY+G | nad6_pos3 |