*Supplementary Data SD1.—* Orientation Patch Count (OPC), Dirichlet’s Normal Surface Energy (DNE), and dental measurements (in mm) for the upper and lower carnassial teeth of fossil carnivoran and creodont specimens used in (Christison et al. 2020). H = height; L = length; W = width. CMN = Canadian Museum of Nature; CIT-LACM = California Institute of Technology at the Los Angeles County Museum of Natural History; F:AM = Frick American Mammals, American Museum of Natural History; F-PM = Field Museum; RSM = Royal Saskatchewan Museum (Clark and Guensburg 1972; Mellett 1981; Bryant 1993).

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Family | Species | Specimen | Code | Upper OPC | Lower OPC | Upper DNE | Lower DNE | Upper H/L | Lower H/L | Upper W/L | Lower W/L |
| Carnivora | *Brachyrhynchocyon dodgei* | RSM P661.1495 | Bd |  | 65 |  | 366.34 |  | 0.791 |  | 0.541 |
|  | *Brachyrhynchocyon dodgei* | CMN 6512 | Bd |  |  |  |  | 0.633 |  | 0.433 |  |
|  | *Daphoenus* sp. | RSM P1585.1487 | Dsp |  | 80 |  | 297.97 |  | 0.949 |  | 0.581 |
|  | *Daphoenus* sp. | RSM P1585.1490 | Dsp | 29 |  | 303.30 |  | 0.488 |  | 0.443 |  |
|  | *Dinictis felina* | CMN 6475 | Df |  |  |  |  | 0.609 | 0.720 | 0.620 | 0.382 |
|  | *Hesperocyon gregarius* | RSM P661.1555 | Hgreg |  | 51 |  | 372.09 |  | 0.766 |  | 0.529 |
|  | *Hesperocyon gregarius* | RSM P661.1502 | Hgreg | 120 |  | 738.01 |  | 0.864 |  | 0.501 |  |
|  | *Hesperocyon gregarius* | RSM P661.1546 | Hgreg |  | 91 |  | 457.42 |  | 0.821 |  | 0.471 |
|  | *Hoplophoneus mentalis* | F:AM 32668 | Hm |  |  |  |  |  | 0.714 |  | 0.450 |
|  | *Hoplophoneus mentalis* (*H. robustus*) | CMN 8750 | Hm |  |  |  |  | 0.662 |  | 0.468 |  |
|  | *Parictis* cf. *P. gilpini* | RSM P661.1700 | Pg |  | 79 |  | 497.79 |  | 0.859 |  | 0.538 |
|  | *Partictis gilpini* | F-PM 22405 | Pg |  |  |  |  | 0.671 |  | 0.673 |  |
|  | *Parictis* cf. *P. personi* | RSM P661.1512 | Pper | 53 |  | 238.73 |  |  |  |  |  |
|  | *Parictis personi* | PU 17795 | Pper |  |  |  |  | 0.671 |  | 0.476 |  |
|  | *Partictis parvus* | RSM P661.1701 | Pp |  | 62 |  | 271.61 |  | 0.763 |  | 0.548 |
|  | *Partictis parvus* | RSM P661.1571 | Pp |  | 80 |  | 989.02 |  | 0.776 |  | 0.583 |
|  | *Partictis parvus* | CMN 54037 | Pp |  |  |  |  | 0.585 |  | 0.748 |  |
| Creodonta | *Hemipsalodon grandis* | CMN 8641 | Hgrand |  | 103 |  | 782.69 |  | 0.715 |  | 0.579 |
|  | *Hemipsalodon grandis* | CMN 9906 | Hgrand | 68 |  | 1332.69 |  |  |  |  |  |
|  | *Hemipsalodon grandis* | CMN 6497 | Hgrand |  |  |  |  | 0.648 |  | 0.627 |  |
|  | *Hyaenodon horridus* | CMN 8751 | Hh | 84 |  | 2160.08 |  |  |  |  |  |
|  | *Hyaenodon horridus* | F:AM 75628 | Hh |  | 45 |  | 274.79 |  |  |  |  |
|  | *Hyaenodon horridus* | CMN 6475 | Hh |  |  |  |  |  | 0.481 |  | 0.311 |
|  | *Hyaenodon microdon* (*H. venturae*) | CIT-LACM 928 | Hmicro |  |  |  |  | 0.698 | 0.634 | 0.638 | 0.435 |