

## Growth differences in the saber teeth of three felid species

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Keywords: enamel, *Homotherium*,  $^{18}\text{O}$ , *Smilodon*, stable isotope

### ABSTRACT

Analysis of the saber-tooth morphology within the Felidae indicates that canines of various saber-toothed species grow differently. Stable oxygen isotopes analyzed from tooth enamel reveal that the scimitar-toothed *Homotherium serum*, which possessed short, broad sabers, had tooth crown growth rates similar to modern lions. This contrasts with the longer and thinner, dirk-toothed saber species in the genus *Smilodon*, *S. gracilis* and *S. fatalis*, which had much faster growth rates. With a more rapid growth rate, *Smilodon* reduced the total duration of crown growth to a period of time similar to that observed in modern lions, even though its tooth crown was twice as large. While comparable in overall morphology, developmental differences may reflect ecological differences among taxa bearing saber-toothed canines.