



SABER TOOTHED CAT

(*Smilodon californicus*)

California's Official State Fossil

The carnivorous saber toothed cat, an extinct member of the cat family (Felidae), flourished throughout the northern continents as early as late Eocene and early Oligocene times (approximately 40 to 35 million years ago). In Pleistocene time (1.8 million to 11,000 years ago), the saber toothed cat successfully "raided" South America where large-hoofed animals were easy prey. In California, the cat's fossilized remains are found most abundantly at the Rancho La Brea pits in Los Angeles. Here the saber toothed cat, attracted by the struggling cries of other unfortunate creatures caught within the sticky pools of tar, sought its prey and also fell into the efficient trap.

In contrast with typical living cats, the saber toothed had exceedingly long, dagger-like upper canines used for stabbing and slicing. The lower canine teeth of the saber toothed cat were correspondingly reduced in size. At the front end of the lower jaw, there often was a flange that served as a guard for the large upper canines. As a result of the development of the large canines, the skull of the saber toothed cat is quite different from that of today's cats. Nasal openings were receded from the position seen in typical cat skulls and prominent bony ridges ran along the entire length of the hard palate. In the ear region, the mastoid process was powerfully developed for the attachment of muscles which pulled the head downward. The lower jaw of the saber toothed cat could swing to almost a right angle when the mouth was opened to attack. However, the biting strength of the lower jaw was not as great as it is in the modern cat.

The body and limbs of the saber toothed cat, though approximately the same size as the present-day African lion, were slightly different. In *Smilodon californicus*, the hind limbs were relatively light while the front limbs, rib basket, and breastbone were strong and powerful. The short lower segments of the limbs indicate that the saber toothed cat was not a fleet-footed carnivore like the lion or tiger, but rather a predator of large slow-moving animals such as the mammoth, mastodon, or ground sloth. The saber toothed cat probably gripped its prey with its powerful front limbs and, with its upper canines and strong head and neck muscles, repeatedly stabbed a vulnerable spot on the victim's body. Presumably, the backward position of the nasal openings allowed the saber toothed cat to continue breathing while its

head was buried inside its victim. A strongly grooved gum covering the ridges of the hard palate may have aided in sucking blood.

The extinction of the saber toothed cat may have been related to the decrease in larger animals upon which it preyed. There is some evidence that the mastodon was the favorite victim of some later-day species of saber toothed cat because both persisted in North America only until the end of the Pleistocene. In Europe, however, both disappeared in the early Pleistocene.

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[Ted Smith <tsmith@consrv.ca.gov>](mailto:tsmith@consrv.ca.gov).

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