

## American Mastodon (*Mammut americanum*) in the Rancho La Brea Collection of the University of California Museum of Paleontology

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While *Mammut americanum* occurs at over 100 Rancho La Brea localities in California (Jefferson 1991), most sites record single individuals. Even Rancho

La Brea preserves few specimens, Stock and Harris (1992) reporting a minimum of 14 individuals in the Page Museum collection. Miller (1987) and Harris (2001) remarked that Rancho La Brea mastodons are smaller than those found elsewhere in the United States, although neither author provided measurements. To increase sample size for comparison and further evaluate the tar seep versus other North American specimens, we examined mastodons in the Rancho La Brea collection of the University of California Museum of Paleontology (UCMP).

Like the Page Museum, mastodon material in the UCMP collection has not been published. Previously, only four UCMP Rancho La Brea mastodon specimens were catalogued, all from locality 3874 (Rancho La Brea general): UCMP 22995 (tooth fragment), UCMP 27114 (femur), UCMP 27115 (tibia), and UCMP 158258 (molar). These specimens are missing from the UCMP. However, we identified and catalogued 10 other locality 3874 specimens, which are reported here.

Two partial right dentaries are UCMP 198852 and UCMP 198861. UCMP 198852 has a single tooth, an  $M_3$  with four lophids and a posterior tubercle.  $M_3$  maximum width is 83.0 mm at the tritolophid, and length is 199.7 mm. UCMP 198861 has an  $M_1$  and  $M_2$ .  $M_1$  maximum width at the metalophid is 66.5 mm, and maximum length is 108.5 mm.  $M_2$  maximum width at the metalophid is 79.1 mm, and maximum length is 110.5 mm. Stage of tooth wear indicates that these individuals were approximately 34–39 years and 20 years in age respectively, based on Saunders's (1977) use of African elephant years.

Two partial left dentaries are UCMP 198853 and UCMP 198858. UCMP 198853 has an  $M_3$  with five lophids, although the pentalophid is not fully developed.  $M_3$  maximum width is 83.1 mm at the tritolophid, and maximum length is 190.0 mm. UCMP 198858 has a broken  $M_2$  that prevents taking standard measurements. Tooth wear suggests UCMP 198853 was about 34 years old, while the presence of the  $M_2$  and an  $M_1$  alveolus in UCMP 198858 indicates an individual greater than 18 years in age, based on Saunders's (1977) age model.

UCMP 198859 is a partial cranium, including the left maxilla with  $M^1$  and  $M^2$  and the left and right tusk alveoli. The  $M^1$  and  $M^2$  are broken, precluding useful measurements. The tusk alveoli are subrounded to oval; the left alveolus has a dorsoventral diameter of 86.5 mm and a mediolateral diameter of 78.2 mm, and the right alveolus has a dorsoventral diameter of 85.6 mm and a mediolateral diameter of 79.4 mm.

UCMP 198860 is a partial cranium, consisting mostly of the palate. The left  $M^1$  and  $M^2$  are broken but present. The right  $M^1$  and  $M^2$  are intact. The right  $M^1$  has a maximum width at the metaloph of 69.9 mm and a maximum length of 97.1 mm.  $M^2$  has a maximum width at the metaloph of 74.9 mm and a maximum length of 97.2 mm. An unerupted  $M^3$  occurs on the right side. The right  $M^1$  protoloph and metaloph are worn. The  $M^2$  is unworn. This individual is estimated to be a young adult, about 20 years in age based on Saunders's (1977) model.

Three isolated premolars (UCMP 198854, 198855, 198856) and a right femur (UCMP 198857) were also identified. Femur length is 845.1 mm, minus the proximal epiphysis, which is missing.

In relation to Trolinger Spring and Boney Spring mastodons of Missouri (Saunders 1977) and specimens from Utah (Miller 1987), the UCMP Rancho La Brea specimens have long, narrow teeth, particularly the  $M_3$  of UCMP 198852 and UCMP 198853. The  $M_1$  and  $M_2$  of UCMP 198861 are small compared with Trolinger Spring and Boney Spring specimens, as are the  $M^1$  and  $M^2$  of UCMP 198860. While the  $M_3$  of UCMP 198853 and UCMP 198852 are approximately the same width as the Utah mastodons, they are 22 to 32 mm longer, respectively. The  $M_2$  of UCMP 198861 is larger than Brigham Young University specimen BYUVP 4379, while the  $M^2$  of UCMP 198860 is about the same length but 5 mm narrower than the aforementioned male specimen from Utah. While Miller (1987) stated that Page Museum specimens are smaller than Utah mastodons, which are smaller than Missouri and Michigan mastodons, UCMP specimens overlap in size with those from Utah. Sexual dimorphism may account for some Page Museum and Utah specimen size differences. Further study of Rancho La Brea mastodons and comparison with other North American populations is warranted.

### References Cited

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