

Brumm A 2021 Oldest cave art found in Sulawesi

The pre-Austronesian rock art is characterized by hand stencils and figurative animal paintings. In most instances, animal images were executed in a single color (typically red or purple/mulberry) using brushwork and/or fingertips. The artists used somewhat simplified forms of outline representation to depict animals in profile.

The animal outlines are typically infilled with irregular patterns of painted lines and dashes rather than recognizable anatomical detail; solid infill is documented, but rare.

Most discernible animal images appear to represent the island's largest endemic land mammals: suids and dwarf bovids (anoas, *Bubalus* sp.). Images of suids are strongly dominant: Thus far, some 73 separate parietal motifs representing suids or suid-like figures (81.1% of animal representations) have been identified in Maros-Pangkep and Bone. Most seem to portray *Sus celebensis* (Sulawesi warty pig), a small (40 to 85 kg), short-legged pig with characteristic facial warts. *S. celebensis* is still extant. Although an old Sulawesi endemic, this species was widely translocated within Indonesia in late prehistory.

In total, five figurative paintings of animals from Maros-Pangkep have previously been dated to the Late Pleistocene using Uranium-series (U-series) isotope analysis of associated calcium carbonate deposits (coralloid speleothems).

The earliest dated images occur on the same rock art panel at the limestone cave of Leang Bulu' Sipong 4. The 4.5-m-wide panel at this site consists of a scene portraying several human-like figures apparently hunting Sulawesi warty pigs and anoas.

U-series isotope analysis was undertaken on four coralloid speleothems from three separate animal images. A Sulawesi warty pig image has a minimum age of 43.9 ka, while two anoa images have minimum ages of 41 and 40.9 ka, respectively.

At another site, Leang Timpuseng, a figurative depiction of a suid was dated to at least 35.4 ka. Moreover, at Leang Barugayya 2, a painting of an unidentified suid-like animal has a minimum age of 35.7 ka. U-series dating of hand stencils from various sites in Maros-Pangkep also yielded minimum ages of between 39.9 and 17.4 ka. Notably, excavations at two rock art sites in the Maros district, Leang Bulu Bettue and Leang Burung 2, have revealed in situ archaeological evidence for Late Pleistocene pigment processing. This includes used ochre fragments at both sites and, at Leang Bulu Bettue, ochre-stained stone artifacts deposited around 40 ka. At the latter site, excavated

examples of figurative and nonrepresentational artworks (“portable art”) also date to ~24 to 16 ka.

Evidence for rock art production of a broadly similar antiquity is found in karst areas in the adjacent island of Borneo: At Lubang Jeriji Saléh, a high-level limestone cave in Kalimantan, U-series dating indicates a minimum age of 40 ka for a figurative painting of a Bornean banteng (*Bos javanicus lowi*).

In the present study, we describe the recent discovery and U-series dating of two Late Pleistocene figurative paintings of Sulawesi warty pigs in Maros-Pangkep. These parietal artworks are from two newly identified cave art sites: Leang Tedongnge and Leang Balangajia. We describe the animal images at these localities and report the U-series dating results on associated speleothems.

We undertook U-series isotope analysis of small coralloid speleothems that had formed on two figurative paintings of suids at Leang Tedongnge and Leang Balangajia 1, as well as a superimposed hand stencil at the latter site. One of the suid images is located at Leang Tedongnge, a limestone cave in a secluded karst valley on the border of the Maros and Pangkep karst districts. The other suid image is from the limestone cave of Leang Balangajia 1 in the southern Maros district of Simbang.

The suid images at Leang Tedongnge and Leang Balangajia 1 were both executed in red or dark red/purplish (mulberry) mineral pigments (ochre). In each instance, the animal depiction consists of a complete body outline of a suid shown in profile view. Both suid figures are represented in immobile or static positions. The pictorial outlines are infilled with irregular patterns of painted lines and dashes. The prehistoric artists did not clearly portray any primary sexual characteristics (e.g., genitalia and mammary glands) in the outline representations of the suids; however, secondary sexual characteristics may have been depicted.

At Leang Tedongnge, the dated suid figure is positioned on the rear wall of the cave. Measuring 136 cm by 54 cm, this motif is associated with two hand stencils situated above and close to the hindquarters of the suid representation. At least two or three other suid figures are located on the same panel. In contrast to pig 1, which is relatively complete, the latter images are only partially preserved owing to exfoliation of the cave wall “canvas” on which they were painted. Clearly visible, however, are the heads of two of the suids. The animal figures seem to have been depicted confronting each other. The dated pig figure is positioned to the left of pigs 2 and 3 and faces toward them. A fourth animal image, almost completely obliterated by exfoliation of the rock surface, is located on the same panel above pigs 2 and 3.

The arrangement of the figures is suggestive, in our view, of a narrative composition or scene in the modern Western sense. We infer that this rock art panel may have been intended to portray an episode of social interaction between at least three, and possibly four, individual suids.

At Leang Balangajia 1, the large red pig figure was painted on the ceiling of a small side chamber. This suid motif measures 187 cm in length and 110 cm in height. There are possibly at least two other figurative animal motifs on the wall and ceiling of the chamber. They are very poorly preserved, however, and largely indistinct; hence, we do not consider them further here. Four hand stencils are superimposed on top of the large red pig figure.

In sum, U-series dating results provide respective minimum ages of 45.5 and 32 ka for the *S. celebensis* images at Leang Tedongnge and Leang Balangajia 1. The image from Leang Tedongnge, with a firmly established minimum age of 45.5 ka, would now appear to be the earliest known dated artwork in Sulawesi.

Furthermore, as far as we have been able to ascertain, the securely dated painting of a Sulawesi warty pig at Leang Tedongnge would now seem to be the world's oldest surviving representational image of an animal. In addition, this dated depiction of an endemic Wallacean suid may also constitute the most ancient figurative artwork known to archaeology.