

CONTRIBUTIONS FROM LOS ANGELES COUNTY  
MUSEUM—CHANNEL ISLANDS BIOLOGICAL  
SURVEY

No. 35. OCCURRENCE OF THE FALSE KILLER WHALE,  
*PSEUDORCA*, ON THE CALIFORNIA COAST

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Although the false killer whale, *Pseudorca crassidens* (Owen) has at times come ashore in rather large numbers at scattered localities throughout the world, records of its occurrence along the west coast of North and South America are few. The most northerly record on this coast is a skull (Wash. State Mus. No. 12515), obtained from a fresh carcass in Puget Sound, Washington, on May 15, 1937 (Scheffer, 1948). The specimen previously establishing *Pseudorca* as a resident of west coast waters was a weathered skull and incomplete skeleton taken by the U. S. Fish Commission steamer *Albatross* at Pichilique Bay, near La Paz, Lower California, on April 29, 1888 (U.S.N.M. No. 23282).

Garrod (1924), records the number of specimens in museums as being under thirty. Therefore, in view of the rarity of its occurrence, it is with considerable interest that we are able to record a definite record of the species from the coast of southern California. On July 10, 1949, while the writers were engaged in field activities on San Nicolas Island, Mr. Stute, a sailor from the naval base, called our attention to a small cetacean skull he had discovered on the south side of the island while on a fishing excursion to that area. Seeing our interest in the specimen, Mr. Stute presented us with the skull, which, although evidencing considerable weathering, was in excellent shape except for the absence of the teeth and lower mandibles.

The skull was identified as that of *Pseudorca crassidens*. Subsequent search through some heretofore unworked material collected for the Los Angeles County Museum by Mr. Jack C. Bloeker Jr., on San Nicolas Island during the winter of 1940, revealed two additional skulls belonging to this species. In an effort to turn up still further cetacean records for San Nicolas Island, Mr. Reeder returned to the island on July 23, 1949. A systematic search along the rugged beaches and rocky exposures of the south side of the island resulted in the collection of a fourth skull and a number of ribs and vertebrae.

In order to clarify the picture of the presence of this interesting cetacean on San Nicolas Island, a brief description of the topography of the island and the location of the collection sta-



PLATE 6

Dorsal view of skull of *Pseudorca crassidens*, L.A.M. 8459.

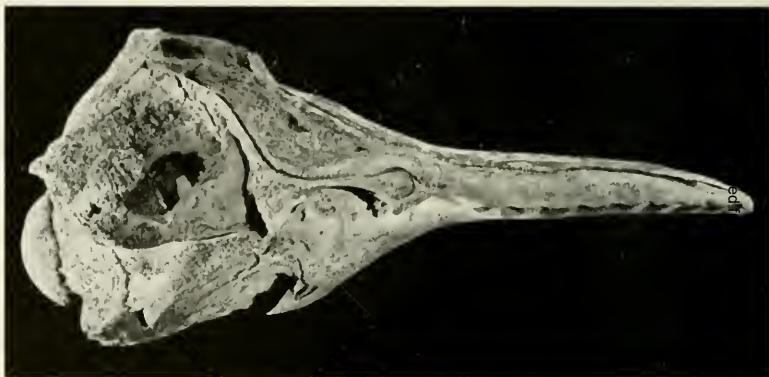


PLATE 7

Lateral view of skull of *Pseudorca crassidens*, L.A.M. 8459.

tions seems warranted. San Nicolas Island constitutes the outermost of the eight channel islands lying off the southern California coast, and is approximately 76 miles southwest of Los Angeles Harbor. Somewhat oval in shape, San Nicolas is  $9\frac{1}{2}$  miles in length and  $3\frac{1}{2}$  miles in width, with its long axis lying in an almost east-west direction. The eastern tip of the island is characterized by a long sand spit which extends seaward for a considerable distance. All stations of occurrence of the skeletal material of *Pseudorca* were along the south side of the island and involve a length of coastline approximately  $3\frac{1}{2}$  miles long.

The south coast of the island consists of a rapidly ascending, highly dissected slope, which rises within a rather short distance



PLATE 8

Lateral view of skull and fused vertebrae of *Pseudorca crassidens*, L.A.M. 1860.



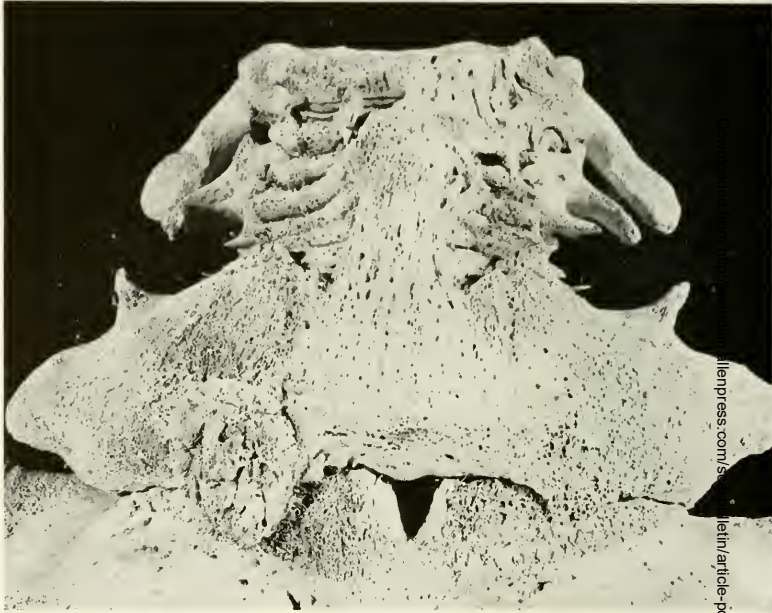
PLATE 9

Ventral view of fused group of first six cervical vertebrae  
of *Pseudorca crassidens*, L.A.M. 8458.

to the main axial ridge and sloping mesa. Three of the skulls were found on this slope, from 75 to 300 yards from high tide line, and at an elevation of 10 to 30 feet above the normal high tide level. The fourth skull was found in the vicinity of an Indian shell mound located at an inlet known as "Dutch Harbor." The mound itself was but 100 feet from the normal high tide line. The skull and partial skeleton (L.A.M. 8458), collected 3 miles west of the sandspit, were found in close proximity to a partial skull and skeleton of the California gray whale, *Rhachianectes glaucus*. Whether the two species were beached at the same time is, of course, unknown. An unusually heavy storm could account for their deposition above the normal high tide mark.

A characteristic of the genus *Pseudorca* is the fusion of the first six or seven cervical vertebrae. An examination of the material at hand shows this condition to exist in the three specimens which include the cervical vertebrae. In two (L.A.M. 8458 and 8459), the first six cervical vertebrae are fused, while the seventh is unattached (Plate 9). The third specimen (L.A.M. 8460), shows anomalous development of these parts (Plates 8 and 10). In this specimen, the entire cervical series is joined; anteriorly, also, the atlas is ankylosed rigidly to the occipital condyles by a necrotic osteous growth, which has nearly obliterated the usual joint region. Both dorsally and ventrally, however, the line of fusion is evident as a more or less definite crack, which pene-





## PLATE 10

Ventral view of occipital region of skull of *Pseudorca crassidens*  
L.A.M. 8460, with first eight vertebral elements fused thereto.

trates not over one-half inch into the normal joint area. Posteriorly, the seventh cervical vertebrae is fused on its ventral surface to the first thoracic vertebra by a continuation of the exostotic growth illustrated in Plate 10. An examination of the ventral surface of the fused vertebral elements shows the development of an extensive osteoma which has affected the greater part of this region, and resulting in an ankylosed condition in which the first eight vertebral elements are fused to, and form an extension of, the cranium. The osteoma is formed of an exceptionally porous type of bone tissue. The variance of the anomalous fused vertebral series from the normal may be seen by comparing Plates 9 and 10. The extent of necrotic growth is easily observed.

Undoubtedly, the movement of the animal, especially during rapid swimming, was hampered to a great extent by this pathologic condition. Also, and of probably greater importance, is the increased difficulty of feeding, as rapid movements of the head would have been impossible. The fact that the animal is

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adult, however, shows that the handicap did not make existence impossible.

Reference to Table I indicates that the cranial measurements of the four specimens here reported are very similar to those given by Miller (1920). Two of our specimens (L.A.M. 8459 and 8460), are larger by small increments than any of the six skulls reported by Miller. However, the disparity is slight, and may be due, in part, to differences in technique of measurement.

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TABLE 1.—CRANIAL MEASUREMENTS OF *PSEUDORCA CRASSIDENS* (OWEN)

	8457		8458		8459		8460	
	L.	R.	L.	R.	L.	R.	L.	R.
Los Angeles County Museum Number.....								
Locality.....			San Nicolas Island, Ventura County, California					
Maximum condylobasal length of skull.....	580 mm.		568 mm.		638 mm.		...	
Maximum length of rostrum.....	283		281		320		318 mm.	
Width of rostrum at base (antorbital notches).....	193		181		202		204	
Width of rostrum 60 mm. anterior to antorbital notches.....	186		175		197		199	
Breadth across preorbital angles of supraorbital processes.....	200		...		212		241	
Breadth across postorbital angles of supraorbital processes.....	212		227		216		246	
Zygomatic breadth.....	364		...		356		355	
Width of braincase across parietals.....	254		245		272		267	
Maximum distance between outside margins of premaxillaries, just anterior to nasal openings.....	120		116		128		141	
Total number of teeth in upper tooth row.....	7	8	8	8	9	8	8	9
Length of upper tooth row.....	197	210	223	224	242	224	245	248
Posterior end of upper tooth row to end of premaxillary.....	...	225	240	239	261	259	...	...
Total number of teeth in lower tooth row.....								8
Length of lower tooth row.....								240
Posterior end of lower tooth row to end of mandible.....								252
Maximum length of mandible.....								520
Maximum height of mandible through coronoid.....								153
Length of mandible through coronoid.....								69