

# SYDNEY PRENTICE (1873–1943): The Art of Drawing Fossil Whale Bones

— Mary Parrish & Julia Coursey

## Abstract

*Sydney Prentice (1873–1943) was a paleontological illustrator and a master of the pen and ink thick/thin (eyelash) technique. A collection of his rough sketches, finished art, drawing equipment, zinc engraved printing blocks, and published drawings in the Department of Paleobiology, National Museum of Natural History, Smithsonian Institution document an historic scientific illustration process and serve as an instructional model for artists working today. The drawings were prepared for Smithsonian cetologist Remington Kellogg (1892–1969). A gallery of images may be seen at [paleobiology.si.edu/paleoArt/prentice/prentice.html](http://paleobiology.si.edu/paleoArt/prentice/prentice.html)*

The Department of Paleobiology in Smithsonian's National Museum of Natural History (NMNH) houses several beautiful collections of historical scientific illustrations representing a wide variety of paleontological subject matter. One of these, the Kellogg Illustration Collection, focuses primarily on fossil whale skeletal anatomy and comprises more than 250 pen and ink line drawings and rough sketches of over sixty species of whales (Fig. 1). Sydney Prentice, a master of the pen and ink line technique, prepared most of the drawings. They appear mainly in publications by the Smithsonian cetologist, Remington Kellogg.



From an artistic standpoint, the primary importance of the collection is its exemplary record of the classic and difficult to master pen and ink thick/thin line (or eyelash) technique. Careful study of Prentice's work, from rough sketch to printing methods, provides valuable insight into the scientific and artistic processes that lead to his exquisite final published drawings.

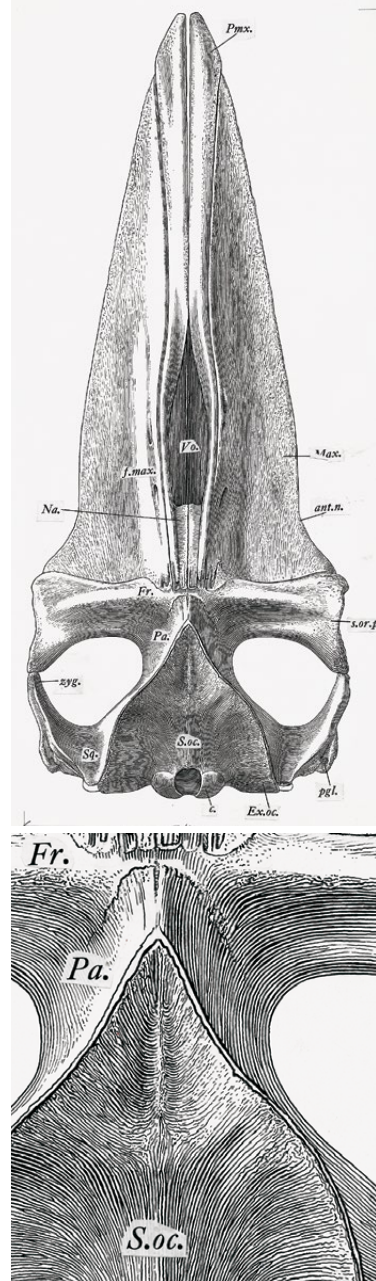
Remington Kellogg (1892 – 1969) was a prolific and influential scientist. He began working as a curator at the United States National Museum (now known as the National Museum of Natural History) in 1928, became its director in 1948, was elected to the National Academy of Science in 1951, and advanced to assistant secretary of the Smithsonian Institution in 1958. He helped found the International Whaling Commission and was an influential leader in its whale conservation efforts for many years. Kellogg retired in 1962, but continued to work prolifically until his death (Whitmore, 1975).

Sydney Prentice (1873 – 1943)\* (Fig. 2) was one of eleven children. He was born in Washington, D.C. and moved to Lawrence, Kansas, when a young boy. He obtained both a Bachelor of Arts (in 1896) and Master of Arts (in 1900) degrees from the University of Kansas, then attended the Art Institute of Chicago to pursue studies in art. While in Chicago, he

began preparing scientific illustrations for the Field Museum of Natural History. Prentice was soon discovered by the Carnegie Museum of Natural History (CM) in Pittsburgh, Pennsylvania. CM hired him as a staff illustrator in 1902, where he worked until his death. Over the course of his career, Prentice was “lend-leased” to a number of institutions including the American Museum of Natural History and the Smithsonian Institution (*Carnegie Magazine*, 1951). Prentice illustrated a variety of scientific works, mostly of vertebrate paleontology subjects.

Prentice had many interests. For example,

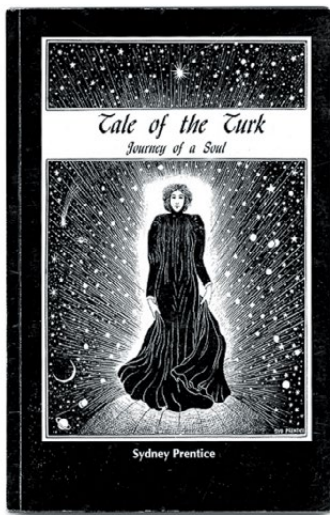
\*(Note: “Sydney” is spelled “Sidney” in some publications, and Allemanno records her father's birthdate as 1871, but in a copy of a handwritten resume by Sydney Prentice, provided to NMNH by archivist Elizabeth Hill at CM, Sydney Prentice spells his name “Sydney” and provides 1873 as his birthdate.)



**Figure 1:** *Parietobalaena palmeri* Kellogg (USNM 10677) dorsal view (with detail). Published in Kellogg, 1968. Original drawing: 70 cm (h) x 36 cm (w); published drawing: 19 cm (h) x 8 cm (w).

**Figure 2:** Sydney Prentice using his pantograph to draw a fossil crocodile skull circa 1925. Photographer unknown.





**Figure 3:** The cover of a novel written and illustrated by Sydney Prentice.

**Figure 4:** A typical sketch made by Sydney Prentice while using the pantograph was simple but precise. Original sketch: 23 cm (h) x 27 cm (w).

**Figure 5:** Mary Parrish using the pantograph to draw the skull of *Parietobalaena palmeri* Kellogg (see Prentice drawing of the skull in Fig. 1). Photo by Skip Lyles.

he lectured about Edgar Allen Poe (*Lawrence Journal World*, 1941) and wrote and illustrated the novel *Tale of the Turk: Journey of a Soul*, published posthumously by his daughter Irene Prentice Allemano (Prentice, 1998) (Fig. 3). Much of the biographical information above comes from the “about the author” section of this book.

Prentice was described as having an “easy and humorous manner” (*The Graduate Magazine of the University of Kansas*, 1921) and at the time of Prentice’s death in 1943, CM writes in its 1943 annual report:

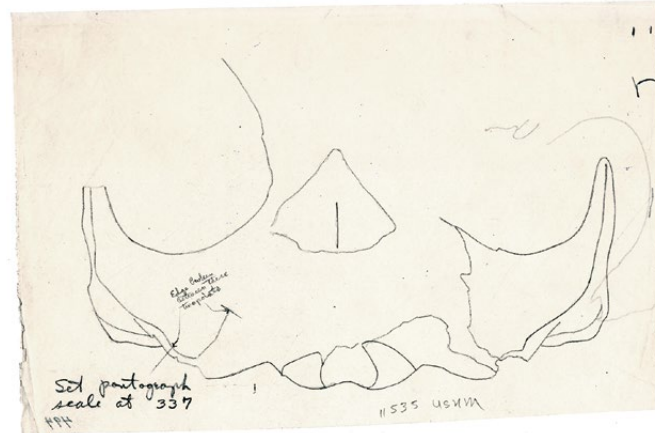
*“The demise of Sydney Prentice on September 15 was a severe blow to this institution and a painful loss for his colleagues. He was respected and admired as an untiring worker in his professional field of scientific illustration, especially in the subjects of paleontology and osteology, in which he had gained a reputation unsurpassed by anyone in this country. He will be greatly missed but affectionately remembered by all his friends who cherish the memory of his geniality, his wide range of cultural interests, and his readiness to be of every assistance.”*

#### PRENTICE’S PRELIMINARY SKETCHES: THE PANTOGRAPH

Every scientific illustrator must devise a way to transform a specimen from a three-dimensional object to a two-dimensional surface. Sydney Prentice adapted a pantograph (used to copy and resize drawings, maps, etc.) to copy large specimens such as whale skulls (*Carnegie Magazine*, 1951).

Prentice replaced the pantograph’s short stylus with a long, metal rod to enable it to trace the outlines and major landmarks of the bones of large specimens. In that way he was able to create an isometric drawing of the specimen, drawn without distortion. He could set the pantograph to copy the specimen at a reduced size (1/3 actual size, for example), (Figs. 4 and 5).

We think it is probable that the pantograph housed in NMNH was used by Prentice. While interning at NMNH in the summer of 2010, Julia Coursey assembled this pantograph for what was likely the first time since Prentice used it. Instructions for setting up and using the pantograph could not be found, so Julia experimented until she was able to get it to

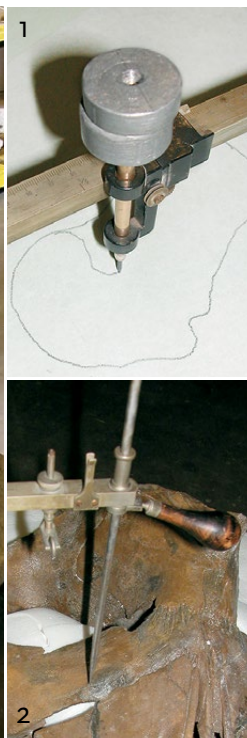


work. Then, she and Mary Parrish tried Prentice’s technique (Figs. 5 and 6). Julia’s instructions can be found on the website listed in the Exhibits sidebar at the end of the article.

#### PRENTICE’S PEN AND INK TECHNIQUE

Pen and ink is arguably the most fundamental of all the traditional scientific illustration media. The high contrast of black ink on white paper and the decisiveness of a well-drawn line provide clarity and detail that is unsurpassed by other techniques. It is a difficult, but beautiful, technique, and is especially well-suited for drawing vertebrate specimens because line naturally replicates the grain in bone. That said, it is very complicated to weave line shading with bone grain in the same drawing (Figs. 1, 7, and 9). Prentice’s drawings are excellent examples of the technique.

To create a thick/thin line, an artist must use a dip pen with a flexible nib loaded with ink. A single line is made which can vary from thick to thin depending on the amount of pressure placed on the pen while drawing the line. Using this technique, it is possible to create a complex system of lines to denote form, structure, texture, light and shade using only pure black and pure white. We showed the Prentice illustrations to Alice Tangerini, scientific illustrator in





the Department of Botany (NMNH), whose specialty is pen and ink line illustration. Alice studied the line quality of the Prentice illustrations and determined that he most likely used a flexible Joseph Gillott's 291 pen nib and holder to do the illustrations (Fig. 8). Many of his lines are long, and vary from quite thin to thick. This requires using a nib long enough to be flexible, and large enough to hold enough ink to render the length of the needed line. Many of Prentice's lines are far longer than those any crow-quill pen, even with an appropriately sized nib, would be able to reproduce. Indeed, the very materials identified by Alice were later found in a drawer of old illustration supplies in Mary's studio at NMNH.

## REPRODUCING PRENTICE'S DRAWINGS

Most of Prentice's original drawings were much larger than the final printed illustration, and he well understood how to obtain the best artistic effect in publication. Prentice may have used the reducing lens in Fig. 7 to see how his drawing would look when published.

After completion, his drawings (such as the one seen in Fig. 9) were sent to a photo-engraver where they were reduced and engraved (in reverse) onto zinc plates. The zinc plates were then mounted on wooden blocks (Fig. 10A) to match the height of the type to be printed (See Hackleman, 1924, pgs. 324 -399). The blocks and text were then most likely printed with a double revolution cylinder press (personal communication, J. Boudreau, 2010). The blocks, wrapped in printers' proofs, (from Kellogg, 1934) are part of the Kellogg Illustration Collection (Fig. 10B). "The way the blocks are wrapped with proofs taken from them is quite typical, and the practice makes it easy to identify each one and keep it ready for another edition, if required" (H. Wright, email 2010).

The published book was the result of a close collaboration between scientist and illustrator. Done



**Figure 6:** Julia Coursey using the pantograph to trace and resize a drawing. Photo by Mary Parrish.

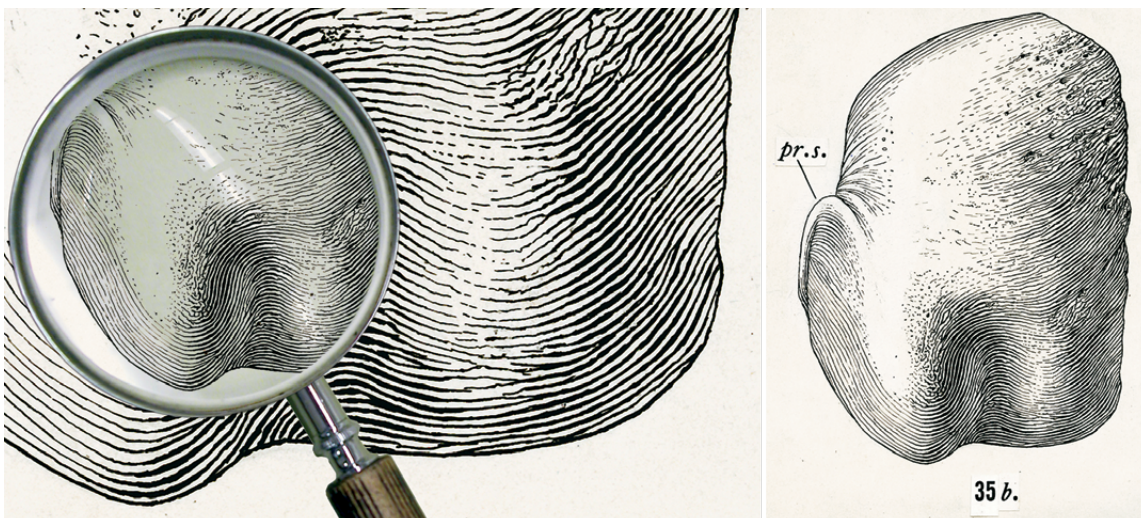
correctly, the book will become a classic, such as Kellogg's *Review of the Archeoceti*, expertly illustrated by Sydney Prentice (Fig. 11).

## ACKNOWLEDGEMENTS

We thank the Guild of Natural Science Illustrators' Education Fund and St. John's College for supporting J. Coursey's work at NMNH; S. Pelot (volunteer, NMNH) for caring for the collection; J. Boudreau and H. Wright (curators, Graphic Arts, National Museum of American History, SI) for advice about printing; M. Rosen (librarian, NMNH) and E. Hill (archivist, CM) for information about Prentice; A. Tangerini (illustrator, NMNH) for analyzing Prentice's line work; and N.D. Pyenson (curator) and D. Bohaska (museum specialist) of fossil marine mammals (NMNH) for their scientific advice.



**Figure 8:** Pen and ink tools probably used by Sydney Prentice. Photo by Mary Parrish.



**Figure 7:** (left) Detail showing how a reducing lens can be used to see what an illustration will look when reproduced at publication size. This may have been the lens used by Prentice.

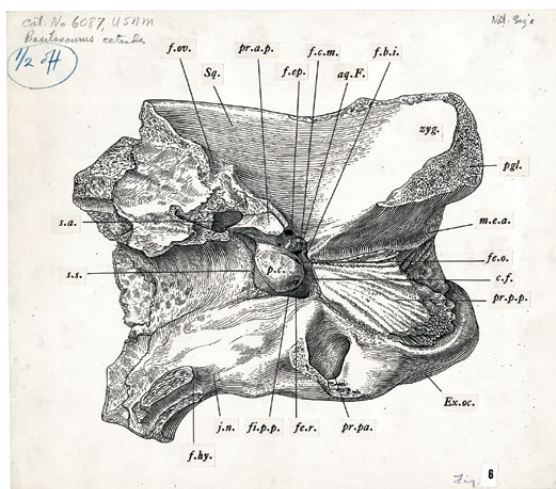
(right) *Zygorhiza kochii* Reichenbach (USNM 11962), right tympanic bulla, ventral view. Published in Kellogg, 1936. Original drawing: 15 cm (h) x 13 cm (w); published drawing: 8 cm (h) x 5.5 cm (w).



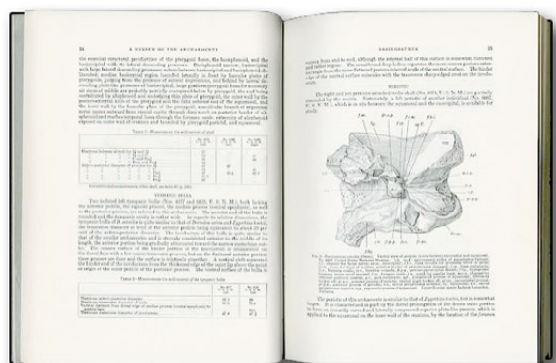
**Figure 9:** (left) *Basilosaurus cetoides* Owen (USNM 6087), partial skull (periodic, squamosal, and exoccipital bones). Published in Kellogg, 1936.

Original drawing 26 cm (h) x 30 cm (w); published drawing: 9 cm (h) x 11 cm (w).

**Figure 10:** (right) A) Photo-engraved printer's block of illustration seen in Fig. 10 (engraved in reverse); B) Photo-engraved blocks used to print Kellogg, 1936, wrapped in brown paper and printer's proofs.



**Figure 11:** Published illustration (seen in Fig. 10B), in Kellogg, 1936.



## About the Authors

Mary Parrish is staff scientific illustrator, Department of Paleobiology, National Museum of Natural History, Smithsonian Institution. She also initiated and cares for a collection of over 3,000 historical scientific illustrations in her department.

Julia Coursey is a 2012 graduate of St. John's College (Santa Fe, New Mexico, campus). She worked on the Kellogg Illustration Collection as an NMNH intern the summers of 2010 and 2011. She also initiated and helped curate the exhibit *Whales: From Bone to Book*.

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## EXHIBITS

### WHALES: FROM BONE TO BOOK

This article complements the exhibit *Whales: From Bone to Book* open at the National Museum of Natural History from May 25, 2013 – May 2014. The exhibit is sponsored by the Smithsonian Institution Libraries and installed in their beautiful Folger cases, Ground Floor, Evans Gallery. A copy of *The Guild Handbook of Natural Science Illustration* is featured in the exhibit.

### THE KELLOGG ILLUSTRATION COLLECTION: WHALE BONES (FOSSIL AND MODERN)

A gallery of images and additional information may be seen on a website launched by Mary Parrish and Julia Coursey in 2012 at this address: [paleobiology.si.edu/paleoArt/prentice/prentice.html](http://paleobiology.si.edu/paleoArt/prentice/prentice.html)