

has recently been appointed professor of mathematics at Hanover College, Indiana.

DR. ROBERT B. BRODE, National Research Fellow at Princeton University, has been appointed assistant professor in the department of physics at the University of California.

DR. CHARLES S. GWYNNE, formerly instructor in the department of geology at Cornell University, has been appointed assistant professor of geology at Iowa State College.

## DISCUSSION AND CORRESPONDENCE

### THE WHALE SHARK, RHINEODON TYPUS, AT THE GALAPAGOS ISLANDS—A NEW FAUNAL RECORD

WILLIAM BEEBE in the log of the *Arcturus*<sup>1</sup> has put on record the finding of a huge shark on the north side of Narborough Island in the Galapagos group on June 9, 1925. It was seen by six members of the staff of the expedition and I have talked with Dr. W. K. Gregory and Mr. John Tee-Van, both of whom saw the shark at close range, and from them have gotten first-hand accounts of its appearance.

Compared with any other sharks seen on the expedition it was enormous, measuring from thirty to forty feet in length. It had a broad blunt head with large and heavy fore parts, but tapered rapidly to a very narrow hinder region and thin tail. It came nearly to the surface of the water in a quartering position under the stern of the *Arcturus*. At first there seemed to be a school of fish some distance below the surface with their sides shining through the rippling water, as they swam in a flock turning from side to side. But as this supposed school approached nearer the surface this illusion disappeared and the "school" took the form of this gigantic shark with its back and sides covered with whitish spots. Unfortunately, the huge fish did not come nearer the surface than two or three feet, and equally unfortunately it quickly sank and disappeared from the sight of the excited watchers.

This huge fish could only have been one of the two great sharks found on the west coast of South America—the basking or bone shark, *Cetorhinus maximus*; or the whale shark, *Rhineodon typus*. That the former fish is found not merely in the southern hemisphere but in the waters along the western shores of South America is shown in a paper which I published some years ago.<sup>2</sup> My chief authority for the occurrence of *Cetorhinus* on the coasts

<sup>1</sup> Beebe, William, "The Arcturus Adventure." New York, 1926, p. 414.

<sup>2</sup> Gudger, E. W., "On the Occurrence in the Southern Hemisphere of the Basking or Bone Shark, *Cetorhinus maximus*." SCIENCE, 1915, Vol. 42, pp. 653-656.

of Ecuador and Peru was Charles H. Stevenson,<sup>3</sup> who quotes a Captain Baker that he was formerly engaged in fishing for bone sharks in these localities for the sake of the oil from their livers. However, Dr. Robert Cushman Murphy very kindly informs me that Captain Benjamin D. Cleveland, master of the brig *Daisy*, told him in 1912 that he had formerly fished for bone sharks for liver oil off the west coast of South America, and indeed not far from the Galapagos.

Clearly the bone shark is found in those waters, and it might be thought that the huge shark at Narborough was *Cetorhinus*, but for two things—*Cetorhinus* is black or at least dark and has a pointed, bullet-shaped head and nose, while *Rhineodon* had a blunt fairly truncate snout and has the body covered with large spots arranged in rows both vertically and horizontally. Undoubtedly the huge Narborough fish was *Rhineodon*.

Furthermore, this occurrence of the whale shark in the Galapagos ties up with other faunal records of its occurrence on the west coast of South America. Günther<sup>4</sup> records that W. Nation in 1878 examined a specimen at Callao, Peru, and sent to the British Museum part of its jaws. In this same little article Günther quotes a letter from Signor G. Chierchia, commander of the *Vettor Pisani*, describing the capture near Taboga Island, in Panama Bay, of a whale shark about twenty-nine feet long.

I sought for years for Chierchia's account of his voyage but vainly, until about a year ago when I found his book in the U. S. National Museum.<sup>5</sup>

Careful translation of Chierchia's Italian text brings forward little data not contained in the account printed in *Nature*. In fact, the two accounts are practically identical. Chierchia sent to Günther among other desiderata a photograph of his specimen, but this was never published, and inquiries of the department of ichthyology of the British Museum (Natural History) bring only the information that in the intervening forty-two years it has disappeared.

However, the discovery of *Rhineodon* at the Galapagos gives us a new faunal record for this great shark, and leads to the belief that it may be found all the way from Callao to Panama.

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<sup>3</sup> Stevenson, Charles H., "Aquatic Products in the Arts and Industries." Report U. S. Fish Commissioner for 1902, 1904, Vol. 28, pp. 227-228.

<sup>4</sup> Günther, A. C. L., "The Voyage of the *Vettor Pisani*." *Nature*, 1884, Vol. 30, p. 365.

<sup>5</sup> Chierchia, G., *Collezioni per Studi di Scienze Naturali fatte nel Viaggi intorno al Mondo della R. Corvetta Vettor Pisani. . . . Anni 1882-83-84-85.* Roma, 1885, pp. 66-68.—Pesca di un enorme squalo (*Rhineodon*).