Witkowski (1896), are $C_p = 0.3467$ and $C_v = 0.2467$ cubic-foot atmospheres.

Harvey N. Davis

Cambridge, Mass.

Occurrence of three species of beaked whales of the genus Mesoplodon on the Atlantic coast of the United States

To the Editor of Science: The few specimens of beaked whales of the genus *Mesoplodon* which have hitherto been obtained on the Atlantic coast of the United States have been tacitly assigned to a single species, *M. bidens* (Sowerby). After a detailed study of the material available, I am convinced that three species are represented. These are: (1) *M. bidens,* the species most commonly found in the North Atlantic; (2) *M. europæus,* a species known hitherto only from a single specimen found floating in the English Channel about seventy years ago; and (3) a species which is apparently *M. densirostris,* of which only a few specimens from the Indian Ocean are known.

The name *M. europæus* (Gervais) will probably have to be replaced by *M. gervaisi* (Deslongchamps). The former specific name was originally published in the first edition of Gervais's "Zoologie et Paléontologie françaises" (1846–52) under the genus *Dioplodon.* I have not seen the first edition of this work, but in the second edition (1859) the name is a *nomen nudum.* The species was apparently first described by Deslongchamps in 1866, who renamed it *gervaisi* (*Dioplodon gervaisi*).

An account of the American specimens of this and other genera of ziphioid whales in the National Museum is in preparation, and will probably be published in a few months.

F. W. True

National Museum,
November 5, 1907

Special Articles

Some recent advances in South African paleontology

During the past year a considerable number of new fossil reptiles have been discovered in the Permian and Triassic deposits which are included in the Karroo formation. Three new Therocephalian genera have been discovered in beds which are probably Middle Permian. These are all more or less closely allied to others previously known, and do not reveal much that is new in the general anatomy of the group. In beds which are probably Lower Triassic a new type of Therocephalian has been discovered and named *Arnognathus.* Unfortunately, it is only represented by a dentary bone. The discovery is chiefly interesting from the fact that no Therocephalian has hitherto been got in beds more recent than Upper Permian. It is rather a degenerate form than one leading on to the specialized Cynodonts.

Very much more important than these is the discovery in Lower Triassic beds of the nearly complete skeleton of a small reptile which must be placed in a new suborder. Hitherto we have had no evidence throwing any light on the origin of the Therocephalian reptiles. *Pareiasaurus* and some other of the Cotylosauroid forms seemed to suggest a possible origin among these early types, while one or two points in Mammalian morphology and embryology such as the mammal-like type of the organ of Jacobson in *Sphenodon* seemed rather to favor an affinity with the Rhynchocephalians. The discovery of this new fossil reptile, which is called *Galechirus,* strongly favors the descent of the Therocephalians from an early Rhynchocephaloid ancestor. This new type is about the size of a rat and the following are its most important characters: the dentition is thecodont and homodont, there being no enlarged canine; the lower jaw is very similar to that of the Therocephalians, but there is no enlarged coronoid process; the shoulder girdle is typically Therocephalian, the precoracoid being well developed; the digital formula is 2, 3, 3, 3, 3; the pelvis is plate-like with the ilium directed somewhat backwards; and well-developed abdominal ribs are present. Unfortunately, the temporal region and palate are unknown. The affinities are undoubtedly mainly with the Therocephalians, but in none