

At the University of Manchester the following appointments have been made: A. G. Ogilvie, reader in geography; J. MacMurray, lecturer in philosophy; A. Gardner and R. L. Newall, demonstrators in anatomy.

DISCUSSION AND CORRESPONDENCE

A PROPOSAL OF TWO NEW MIOCENE FORMATIONAL NAMES

IN the summer of 1916, I organized, with the help and encouragement of Professor G. D. Harris, a paleontological expedition to Santo Domingo, with the hope of differentiating the Yaqui Valley Tertiary beds. These had been indiscriminately called Miocene by Professor Gabb in 1874, and in recent years referred by Dr. Dall and Dr. Pilsbry to the Oligocene. The members of the exploratory party were Mr. Karl Paterson Schmidt, Mr. Axel Olsson and the writer, the actual collecting being very efficiently done by the two gentlemen. The collections were chiefly made from bluffs along tributary streams flowing northward through the Samba Hills into the Rio Yaqui. Our most important collections and sections were made on the Rio Cana near Caimito, the Rio Gurabo near Los Quemados, and the Rio Mao near Cercado.

While proceeding up the Rio Gurabo, Mr. Schmidt and Mr. Olsson observed a sudden change in the fauna of the bluffs near Los Quemados. They felt confident that this indicated a different formation from that further down the stream.

A careful and detailed study of the mollusca we had collected was made by the writer and the presence of two formations verified, the results being published in 1917.¹ I then designated these two formations by index fossil names, calling them the Lower or *Aphera islacolonis* formation, and the Upper or *Sconsia lævigata* formation.² This was to contrast them with the *Orthaulax inornatus* formation. I referred the *Orthaulax* formation to the

Upper Oligocene of Tampa; the Lower or *Aphera* formation to the Lower Miocene; and the Upper or *Sconsia* formation to the Middle Miocene.

It now, however, seems desirable to apply geographical names, in conformity with modern stratigraphical nomenclature, to these formations. I therefore propose for the Upper or *Sconsia lævigata* formation of my 1917 report, the name Gurabo Formation. This includes primarily our Zones A to F on Rio Gurabo near Los Quemados and our Bluff 1 on Rio Mao near Cercado. For the Lower or *Aphera islacolonis* formation of my 1917 report I now propose the name Cercado Formation. This includes primarily our Bluffs 2 and 3 on Rio Mao near Cercado, our Zones H and I on Rio Cana near Caimito, and our Zone G on Rio Gurabo near Los Quemados. The Cercado formation also includes a set of fossils from Bulla river loaned to me for study by the American Museum of Natural History.

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SNOW DOUGHNUTS

TO THE EDITOR OF SCIENCE: To the descriptions of snow-rollers which have appeared in recent numbers of your journal may the following be added?

During the winter of 1916-17 a heavy snow fell in Monongalia county, West Virginia, which provided for a short period an opportunity for travel in sleighs. The snow drifted to depths of several feet in places and formed along some roadside fences steep-walled drifts which were, here and there, overhanging at their tops. The writer traveled in a sleigh for several miles along the side of Chestnut Ridge, the westernmost of the Allegheny Mountain ridges in this region. The snow was at this time fresh and unpacked.

At the foot of these steep-walled drifts and also lying part way down their slopes were, in many places, numbers of small snow rings resembling doughnuts in appearance. The rings were a little slenderer than the average

¹ Bulletins American Paleontology, Nos. 29 and 30.

² Bull. Amer. Pal., No. 30, p. 40, and Correlation Table facing p. 44.