

CORRESPONDENCE.**The Fiji Mud-rocks.**

Editor of 'The Auk':

I have read with interest the article entitled "A Fossil Bird's Egg from the Post-Tertiary Mud-rocks of Fiji" by Dr. Casey A. Wood, published in volume XLII, No. 3, of your journal last July. I desire, however, respectfully to differ with the author regarding his interpretation of the origin of the rocks from which the egg was obtained.

Dr. Wood evidently believes that the "soapstone" in which the egg was discovered was formed directly by volcanic agencies. He speaks of ". . . a rivulet of partially cooled mud slowly finding its way into the Tertiary ocean upon whose shore a waterfowl had made her nest. An egg is soon buried in the mobile mass and (it may be) covered by successive waves of hot, semi-fluid detritus." Later, referring to other fossils found with the egg, he mentions a ". . . fresh volcanic stream of soft mud, beneath which they sank, perhaps to be still more deeply buried by further waves of hot, semi-liquid material."

The "soapstone" mentioned by Dr. Wood was certainly not formed in the above fashion. In the first place it is not a true soapstone (a name generally applied to a metamorphic rock made up largely of talc) but in many places at least is a marl, or calcareous clay. The name "soapstone" is a local designation given because of its slippery character when wet, as pointed out by Dr. Wood. There are two series of these marls on the island of Viti Levu, one series being much older than the other. The bird's egg came from the younger series.

I am familiar with the younger formation as developed at a number of points in the southeastern quarter of the island. Here it varies in texture, bedding, and possibly in mode of origin but there is no evidence in any case to indicate that it was a hot semi-liquid mass. Generally it is a well bedded sedimentary rock of fine texture and probably was laid down close to shore as a fine mud or silt. The land at this time must have been considerably lower than now. Marine fossils of various sorts are common at certain localities. Locally, as at Walu Bay on the outskirts of Suva, it contains lenses of reef limestone showing coral heads growing in place above a basal conglomerate. Elsewhere layers of pure river sand interbedded with the marls have been reported.

In other places the "soapstone" is coarser and less regularly bedded and may be looked upon as a volcanic tuff or breccia formed by the accumulation of fragmental ejections thrown out by volcanoes in explosive eruption. These and other beds of volcanic rock were eroded, carried by rivers and deposited near shore to form the typical fine-grained marl of the area around Suva. It is possible also that much of the fragmental material from the coastal volcanoes fell directly into the sea, being sorted by wave action before coming to final rest.

A number of geologists have studied this rock formation in Fiji and the writings of all are in general agreement with the statements made above. It would seem, therefore, that, instead of being engulfed in a stream of hot, lava-like mud, the egg in question was buried near shore by fine sediments brought down by streams or worn from the coast by waves. How the egg reached the sea is another question. The chances of its being washed into a river unbroken are slight—which may account for the rarity of fossil eggs.

In his title Dr. Wood states that the rocks are post-Tertiary in age, later he mentions the existence of the Tertiary ocean at the time the rocks were formed; at still another point he states that the “. . . age of the fossil . . . is quite speculative.” The last statement seems best to fit the known facts as recent workers are not in agreement regarding the age of the Suva “soapstone.” Certainly the beds are no older than late Tertiary and they may be referable to the Pleistocene or Recent periods. At the present time the writer is studying fossils collected from the formation with the hope of settling the question.

Very sincerely yours,

HARRY S. LADD.

Suva, Fiji,

February 15, 1926.

Nature-wasters and Sentimentalists.

Editor of 'The Auk':

Mr. Carey's letter in your last number (pp. 275-276), relating the wholesale killing of Hawks in Delaware and New Jersey, is of peculiar interest. Unfortunately, the slaughter of birds of prey is not confined to those states, nor is its encouragement limited to sportsmen's magazines. In my own state, Alabama, the very agency that should protect these birds is operating for their destruction. Three years ago, the new Commissioner of Conservation promulgated a state-wide "Hawk-killing week." Protests availed nothing. This year he inaugurated another and more sweeping "anti-vermin campaign," beginning February 22 and continuing through March, and made these statements in the press:

"Any campaign against vermin which prey upon our protected game birds and animals in this state must necessarily be a voluntary activity on the part of the friends of wild life of Alabama. There is no bounty provided by statute and therefore the state can make no awards. It is expected, however, that sporting goods houses, game protective associations, conservation clubs and individuals will put up prizes or awards to be given to individuals and clubs for work accomplished in the destruction of vermin."

Such organized slaughter demands an immediate and vigorous counter campaign of education if we are to save many of our raptorial species from extinction. But deplorable as is this state of affairs, we should not