

THE
PROCEEDINGS
OF THE
LINNEAN SOCIETY
OF
NEW SOUTH WALES,
VOL. IV.,

[WITH TWENTY-SEVEN PLATES.]

SYDNEY:
PRINTED AND PUBLISHED FOR THE SOCIETY BY
F. W. WHITE, 39 MARKET STREET,
AND SOLD BY THE SOCIETY,
1880.

ON SOME FOSSILS FROM LEVUKA, VITI.

BY THE REV. J. E. TENISON-WOODS, F.G.S., F.L.S., &c., &c.

The Hon. W. Macleay has lately received from Mr. Boyd, of Levuka, a few fossils from the centre of the island, which have been placed in my hands for examination. I am not able to give any information as to the locality in which they are found, so I reserve any details until we are placed in possession of fuller particulars as to the deposit. I will merely note now that they are of great interest, being probably tertiary, and possibly belonging to an early formation of that period. They comprise Corals and Mollusca as follow: Corals.—1. A *Fungia*, small, thin, the base not seen. The specimen is broken, but the whole disk is not more than two inches across. As the matrix has not been cleared away the genus is not quite certain, but I have little doubt that it is a true *Fungia*, and if so it is the only fossil form we know, as the fossils formerly described as *Fungias* by various authors are known to belong to the genera *Microbacia*, *Cyclolites*, &c. The fossil is tropical in character. 2. A *Flabellum*, decidedly

distinct from any described form living or fossil, but resembling some of the spinous species of the China Seas. 3. A cast or the internal septa, with a small portion of the wall of a doubtful coral not unlike one of the genus *Conosmilia*, of Duncan. This Coral may eventually be determined, but it is of so extremely friable a structure that its details can not easily be worked out. 4. A *Conus*, not like any known to me as part of the Pacific fauna. 5. An *Oliva*, like some of the common tropical forms. 6. A *Natica*, very like *N. Wintlei* nobis of the Victorian and Tasmanian Miocene. 7. Two species of *Turritella*, very near to *T. Sturtii*, of the Tasmanian Miocene. 8. A *Trophon* of decidedly Australian affinities. 9. A cast of a *Turbonilla*. 10. Two valves of a *Corbula*, both broken, not unlike *C. scaphoides*, Hinds.

The matrix in which all these shells are embedded is a brown slightly ferruginous sandy clay. The fossils are quite white and much decomposed, so that they become pulverulent on the slightest touch. This does not arise from weathering, as the state is the same even when the clay is freshly broken.

The above list shows a tertiary and, as far as we can judge from the *Fungia* and *Oliva*, a tropical fauna. Any tertiary marine rocks from the Pacific are of high interest because of their bearing upon the coral reef theory. It has already been remarked by Dana and others that in some portions of the Fijee group many marks of upheaval are to be seen, but these were supposed to refer to a very modern physical change. These fossils must claim a much more ancient origin. By many it is supposed that the reef islands in the Pacific mark the site of some former continent. But if we find in the centre of those islands tertiary marine remains, the ancient continent theory will be difficult to maintain. I await further information. and as I hope fresh supplies of fossils, to give full details.