THE RESULTS OF DEEP-SEA INVESTIGATION IN THE TASMAN SEA.

3.—MOLLUSCA FROM EIGHTY FATHOMS OFF NARRABEEN.

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(Plates liv.-lvi.)

The fourth collection from the continental shelf of this coast I have been privileged to examine was discussed in the last issue of this serial. The fifth forms the subject of the present article. It was obtained under the circumstances above related, on 7th June, 1906, in a single haul of the bucket dredge in eighty fathoms, twenty-two miles east of Narrabeen, New South Wales.

Probably the alluvial of the Hawkesbury River is here spread by the prevailing current, for at this point the continental shelf extends in an unusually broad terrace. A depth of two hundred and fifty fathoms is attained at the same distance east of Botany Heads, while six hundred fathoms are reached south of Ulladulla at no greater distance off the land.

According to the "Challenger" observations, long continued west winds push the great warm current beyond this station, but usually its stream sweeps over the position. A rich fauna inhabits this spot. In all I have separated two hundred and forty species of shells, a total far greater than was realised by the best haul of the voyage of the "Challenger." This result is partly due to the productive nature of the ground, and partly to the efficiency of the bucket dredge as a collecting tool.

Assuming that we have here the entire molluscan fauna of three square feet of the sea floor, it is interesting to speculate what proportion of a fauna extending over thousands of square miles of continental shelf, subsists on three square feet. If we counted the plants of three square feet on a river bank, what proportion would they represent of the total flora of the valley? I am inclined to suppose that the cases are not parallel, that a square foot of the sea floor contains a larger proportion of the fauna of a square mile than happens on land. This is supported by the continuity of fossil zones elaborated by modern palaeontologists, and is deducible from the uniformity of conditions in