

**La Vie dans les Océans.** Par Dr. L. Joubin. In Series: Bibliothèque de philosophie scientifique. 334 pp. Ills. Ernest Flammarion, Paris, 1912. Fr. 3.50. 7½ x 4½.

The author uses very few pictures in his book, which is popular but clear and written with real literary skill. He has selected his matter with care and presents it vividly.

All the properties of the ocean that touch nearly on life are described fully enough to show their bearing. Mainly they are motions, temperature, pressure, composition, and lighting. None are allowed to lead us aside from our object.

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This is the more striking as the ocean is the seat of such complexity and variety that treatment of it is always likely to run off into disconnected detail. The parts of the book that deal most with geography are the accounts of corals and the spreading of life into the depths from the sunny continental shelves where it originated, an expansion here dated from the Cretaceous. Depths of 7,000 to 10,000 meters are almost lifeless, yet pressures in the deeps are not so burdensome to life as has been said. Gases are under no extraordinary compression. There is no spouting when the deep water bottle is opened and change of temperature rather than of pressure accounts for the death of the creatures brought to the surface. We have heard of sea phosphorescence, seen a little even, but Joubin gives us an impression of it that is typically novel. We may read Murray's account of the same facts and learn of the same light projectors with lenses and reflectors that the French author describes but it is only the latter who gives a feeling of the radiance of some of these creatures, which suggests to the eyes of the mind occasional regions of submerged splendor. We can almost see some of these fish dart up with all their lateral spots aglow like tiny ocean liners in the night.

The coral chapter is admirable for any one who once learned Darwin's theory of reefs to find it later denied but found the alternatives somewhat unclear. Our author gives seven theories and leaves the impression that all may have application!

MARK JEFFERSON.