

# WILEY



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Review

Author(s): B. T.

Review by: B. T.

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photographs illustrate equally well the scenery of the country and the high architectural standard of public buildings in some of the chief towns.

'A Trip into the Interior of Peru.' By the Rev. A. Miles Moss. (Lima : Southwell. 1909. Pp. 42, 120. *Map and Illustrations*.) This volume contains a brief text in English and Spanish, in the form of an amplified diary. But it is chiefly remarkable for its photographs, which fill the whole of the 120 pages in the second counting, and include numerous really beautiful landscapes and a number of interesting studies of Indian types. On p. 21 is a particularly fine example of bowed strata.

### AUSTRALASIA AND PACIFIC ISLANDS.

#### AUSTRALIAN METEOROLOGY.

Solar Physics Committee : 'A Discussion of Australian Meteorology.' By Dr. W. J. S. Lockyer. London : Wyman. 1909. 5s.

Under the above title a valuable contribution to meteorology has been made by Dr. J. S. Lockyer, of the Solar Physics Observatory. In a series of communications to the Royal Society, Dr. Lockyer and Sir Norman Lockyer have pointed out the existence of a barometric see-saw having a period of 3·8 years, and being of world-wide extent. It has also been shown that the pressure changes occurring from year to year in Australia are closely similar to those taking place in India, but that the mean amplitude of the Australian variation, amounting to nearly 35 per cent. of the mean annual variation, is nearly double that of the Indian change. Another pressure variation in operation in Australia takes about nineteen years to complete a cycle, and has an amplitude nearly 25 per cent. of the annual variation. These Australian pressure changes, being of such large amplitude, must play an important part in bringing about changes experienced in the weather from year to year.

Australian weather itself appears to be the product of a series of anticyclones moving west to east at an average rate of about 400 miles a day, and following one another with remarkable regularity. About forty-two pass over the continent in the course of a year, and the average time of transit over any place is given as 8·7 days. From a study of South American and South African records there is evidence that the anticyclones travel completely round the Earth as individual systems, although subject to local modifications. In the Australian summer months (October to March) the mean latitude of the paths of the anticyclones is about 37° to 38° S. During this time Southern Australia is more or less dry, the southern depressions being too far out at sea to bring much rain ; whilst Northern Australia, lying during this season beneath the vertical sun, gets "monsoonal" rains. In the winter months (April to September), on the other hand, the mean latitude of the paths of the anticyclones is lower—about 29° to 32° S., with the result that while Northern Australia is usually dry, the southern portion of the continent coming under the influence of V-shaped depressions gets frequent rain. The low-pressure systems exhibit a tendency to wedge themselves in between the anticyclones both to the north and south. From the curves of twenty well-scattered stations it is found that the pressure changes occurring from year to year are general, and that simultaneous excess of high or low pressure in any one year is a marked feature of the whole of the Australian continent. Years of exceptionally high or low pressure in Australia are due to anomalies in the condition or movement of the anticyclones. Years of high atmospheric pressure are found from a study of curves to be years of low rainfall, and *vice versâ* ; this is a natural, though by no means a necessary, relation. Years of high atmospheric pressure are characterized by an increased frequency of "southerly bursters." Not only does the rainfall