

Rate of Growth in Cultivated Specimen of *Raoulia Buchanani* T. Kirk

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Raoulia Buchanani belongs to that remarkable group of compositaceous cushion-plants now widely known as "vegetable sheep." It occurs as a rock-plant in the Fiord Botanical District—a district characterized by having the maximum rainfall and the greatest number of rainy days in the New Zealand Region—and extends a short distance into the western parts of the South Otago District. Its general altitudinal range is from 1200 to 1800 m., and a well-developed plant (Fig. 1) attains a diameter of about 200 cm. and a height of 40 cm. The seedling stage and the life-history are unknown. Indeed, despite the interest that the peculiar life-form of the "vegetable sheep" has aroused both in local and overseas botanical circles, surprisingly little detailed autecological work has been published on any of the species. We have not been able to find any record of growth-rates, so that it seems worth while publishing this short statement concerning an individual plant.

A portion taken from a large cushion of *R. Buchanani* growing at about 1800 m. altitude in the Humboldt Mountains was planted in one of the authors' gardens in Dunedin in March, 1925. The plant remained practically stationary in size for two years after transplanting, measuring in March, 1927, approximately 13.5 cm. in length, 12.5 cm. in breadth, and 5.5 cm. in height. From then onwards the cushion maintained an ever-increasing rate of growth, flowering every year (Fig. 2), and in March, 1934, it measured 24.5 cm. by 23.2 cm. by 8 cm. By March, 1935, it had increased to 26.5 by 24 cm. by 9.5 cm., so that in eight years the length and breadth had been practically doubled and the area quadrupled. Shortly after the last measurements were taken the plant unfortunately was seriously damaged and eventually died, thus bringing to a premature conclusion an interesting experiment.

Anatomical investigation of the stems of plants of various sizes should reveal much concerning the rate of growth of the different species and the age to which they attain. It would appear likely from the above figures that growth is more rapid in the field than has been suspected.