

Ostinelli attributed the variable success of fruiting to season. He observed that flowers appearing in the hot, dry summer months in Sicily did not produce fruits while those in the cooler, moist autumn did, though only a small number of fruits were formed. It is interesting to note that in New Zealand the peak of flowering is at the end of summer. Too few out-of-season flowering records are available to demonstrate the influence of season on fruit set but it is noteworthy that inflorescences appearing as late as July and as early as November set fruit normally. It may be significant that the failures are least around the time of peak flowering. Fifty-three per cent of December flowers failed to mature, 34% in January, 21% in February, 31% in March and 46% in April.

My impression is that opossums caused most losses but ill-timed appearance of spathes resulted in very appreciable mortality. *Doxophyrtis* took toll of seeds but did not cause total failure of an inflorescence. The efficiency of pollination and influence of climatic factors remain to be determined. It should be noted that the figures presented here are from trees grown in the open. Those grown in the shade of a forest canopy are much less successful in producing fruits.

Notes on Growth of Young Nikau Plants

As in a number of other palms, nikau seedlings have a mechanism by which the growing point is pushed deeper into the soil during the first few years of life. This is illustrated in the accompanying drawing by Mr A. E. Esler. The seed germinates at or near the soil surface, as shown in (a), and initially the seedling grows at this level (b, c), but after a few years the "stem" elongates downward (d) and the growing point is forced down well below the soil surface (e). There the growing point remains for a number of years, with the stem portion shown in (e) dying and rotting away. Eventually the true stem grows upwards to form a trunk, and the growing point is raised above the soil surface.

I collected four young nikau seedlings at about stage (b) from the wild in 1955 and grew them in pots for several years until they had developed slightly beyond stage (e). They were then planted out in a gully in fairly deep shade. Now at least 15 years old, they are bearing six to seven leaves with the largest leaf 6 ft 3 in long (leaf stalk plus midrib), and it will be some years yet before any will be big enough to start forming a trunk. In all four plants each young leaf develops to the right of the preceding one, the angle between the leaves being 120° to 180°, average 150°. Over the last three years the plants have produced slightly more than one leaf a year on the average. The appearance of young leaves is not governed by season, though growth is probably slower in the winter.

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Growth of young nikau palms.