

PINE SEEDS DISTRIBUTED BY BIRDS

In the National Park, Belair, near the road to the Government Nursery, underneath a tall Eucalypt were three young pines (*Pinus halepensis*), including one with cones, a Native Cherry (*Exocarpos cupressiformis*), and several of the introduced *Chrysanthemoides monilifera* (*Osteospermum*). Further young pines were seen growing below another tall gum-tree. The seeds of these pines were evidently voided by birds sitting on the tops of these trees. I can understand fleshy fruits, like those of the Native Cherry and the *Chrysanthemoides*, being eaten by birds and later voided but I was surprised that the winged seeds of Pines could pass through the intestines of a bird and germinate. I presume that a full-time seed-eater would have such a grinding force in its gizzard that no pine seed could withstand it. The species of bird responsible might therefore be one that only occasionally is a seed-eater and even then it is surprising that the nutriment, for which the seed is

eaten, should not have been extracted in transit. The bird responsible must settle from time to time on tall Eucalypts and must be common in the National Park, Belair. It cannot, therefore, be a pigeon, chough or ground thrush (*Oreocincla*). A magpie is more likely than a crow. Mr. C. Boomsma, of the Forestry Department, and Mr. Gray, of the Government-nursery in the National Park, tell me that several birds eat the fallen seeds, gathering them in February. The species of birds seen eating the seeds should be recorded whenever noticed. Black cockatoos, of course, rip the cones to pieces and it would be interesting to observe how they secure the seeds and reject the debris.

The Aleppo Pine is the only one I have noticed arising spontaneously in scrubs. It may become a nuisance in our National Parks if its spread by birds becomes common. We cannot afford to have our natural scrub vegetation invaded by pines.

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