Cove; 3 sites from Crawford Bay to stream pond foliar sprayed by ARC

Cultivated only (10)	
*Aloe ? arborescens***	c.0.5m tall, on bank, Crawford house site, sprayed by Trust
Erythrina ? x *sykesii***	x1 tree, (ring-barked), near Top House
*Eucalyptus macarthurii***	l small row below Top House (Mike Wilcox pers. comm.)
*Eucalyptus viminalis***	1 small row below Top House (Mike Wilcox pers. comm.)
*Ficus carica***	l, Bradshaw Cove, resprouting after being cut back
*Nerium oleander***	x1, Bradshaw Cove, resprouting after being cut back
*Prunus persica***	x2 trees by Top House
*Pyrus communis***	x1 tree by Top House (Mike Wilcox pers. comm.)
*Santolina chamaecyprus***	single clump by Top House (not known to naturalise in NZ)
*Syzygium smithii***	x1 tree by Top House, recently cut down

Excluded doubtful previous records (4+4)	
Carex ? *ochrosaccus*	by NW point (BS & JB), unconfirmed by current survey
*Conyza bilbaoana**	in error for *C. sumatrensis*?
*Geranium robertianum**	in error for *G. purpureum*?
Isolepis ? *prolifer*	in error for *I. inundata*?
Nasturtium sp.*	on website, not seen by us
Parsonsia heterophylla	in error for *P. capsularis*?
Schizaea fistulosa	in error for *S. bifida*?
Sonchus ? *asper**	by NW point (BS & JB), in error for *S. oleraceus*?

Kohekohe (*Dysoxylum spectabile*, Meliaceae) in flower and fruit

Rhys Gardner

Introduction

Kohekohe's (*Dysoxylum spectabile*, Meliaceae) sexual dimorphism has only recently been discovered (Braggins, *et al*. 1999). These authors found that some trees are female while others are male (or rarely, hermaphrodite). Here I report observations made in the last couple of years on trees around Auckland, particularly from Sylvan Park at Lake Pupuke, Outhwaite Park at Grafton, and Cornwall Park.

Observations

Flowering takes place in early winter, starting in late May and lasting a month or so. The previous years' fruit-capsules, which had begun to open in mid-April, are not particularly robust, and they and their orange-arillate seeds have mostly gone by flowering-time. Both kinds of flower produce nectar and give off a pleasant, not especially strong, scent of honey. They can hardly be told apart morphologically other than by their anthers, which in the females lack pollen and do not dehisce.

Braggins et al. (1999) note that flowering may be heavy in some years and light in others. The June 2006 flowering for the Sylvan Park trees was a heavy one. There are perhaps a hundred or more large trees here (Gardner 1986), and they were easily sampled, since nearly all had inflorescences on burrs low on the trunk (Sampling was also done from accessible parts of the crown — in no case were both sexes found on one individual).

In the Sylvan Park sample 17 trees were female, and 58 were pollen-bearing. All the latter kind were fully ovuliferous too, but I was not able to detect whether or not the trees they came from bore any fruit.

However, examination of the seven kohekohe at Outhwaite Park, and of two trees at Cornwall Park, indicate that pollen-bearing trees are not only regularly ovuliferous but (also regularly) set a low but not inconsequential number of fruit. Braggins et al. (1999) who investigated kohekohe throughout its geographical range, have noted this "hermaphrodite" fruit set, but say that ovules in the pollen-bearing flowers are "usually absent". This is wrong for the trees I examined, but perhaps there is a geographical gradient here to be investigated.

References

Braggins, J.E.; Large, M.F.; Mabberley, D.J. 1999: Sexual arrangements in kohekohe (*Dysoxylum spectabile*, Meliaceae). *Telopea 8*: 315-324.
Gardner, R.O. 1986: Native bush at Sylvan Park, North Shore, Auckland. *Auckland Botanical Society Newsletter 41*: 36-42.

The olives of Mt Richmond, Otahuhu

Mike D.Wilcox

There are three forms of olive (*Olea europaea*) found in the Auckland area. The first is the cultivated olive, represented by various named commercial clones and grown for its fruit, with several orchards on Waiheke Island and at Matakana. The trees are grown as grafted stock. These cultigens all typically have silver-backed leaves and large fruits, and are derived from *Olea europaea* subsp. *europaea*. The second is the wild version of *Olea europaea* subsp. *europaea* or oleaster (sometimes recognised as var. s*ylvestris*), introduced as seed and grown as seedlings in such places as Cornwall Park (the "Olive Grove"), Motuihe Island, and Mt Richmond. These trees have silvery-backed adult leaves, a spinose juvenile stage with small ovate leaves, and fruits that are very variable in size, but mostly small and of no commercial value. The

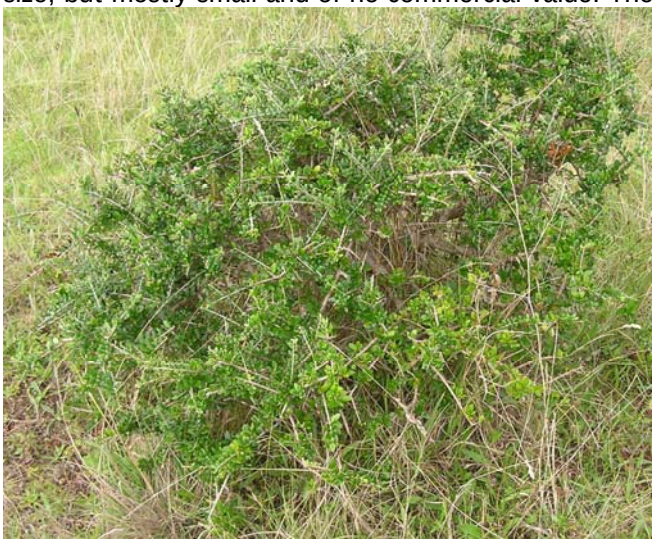

Fig. 1. Spinose bush stage, wild olive, Mt Richmond, 1 April 2000 (Mike Wilcox)

natural range of oleaster is the Mediterranean region and SW Asia. Oleaster olives have gone wild at Motuihe Island, in Cornwall Park, and most abundantly on Mt Richmond, Otahuhu. The third is the African olive (*Olea europaea* subsp. *cuspidata*) with narrow, golden-backed leaves and small globose fruit. It is not spinescent at any stage. Cultivated examples of African olive can be found in the Winfred Huggins Woodland on Mt Wellington, and there are some recent plantings in Cornwall Park. The African olive has become a serious environmental weed in Hawaii, New South Wales in Australia (Cuneo & Leishman 2006), on Norfolk Island (Green 1994), and was also a nuisance on Raoul Island (Sykes 1977). Its natural range extends from southern Africa to eastern Asia.

Mt Richmond Domain in Otahuhu, Auckland, has a varied assortment of exotic and native trees, prominent among which are olives (*Olea europaea* subsp. *europaea*) which are common growing over the grass slopes and on steep volcanic banks.

Fig. 2. *Olea europaea* subsp. *cuspidata*, Winifred Huggins Woodland, April 2007 (Mike Wilcox)

Whilst the original olives were undoubtedly planted on Mt Richmond, the predominant population has the appearance of being wild as there is a ranges of size classes from small bushes < 1 m height to taller shrubs or small trees up to 12 m tall and with trunks 50-60 cm in diameter. Since I first starting observing these olives in 1999 their numbers and density has noticeably increased. The Mt Richmond olives have the silvery-backed adult leaves and the spinose juvenile stage typical of the wild, oleaster form of *Olea europaea* subsp. *europaea*. The fruits are generally small on these trees, and the whole population looks to be of wild olives or oleaster of seedling origin, rather than cultivated olives. Throughout the Mediterranean Basin, oleaster olives differ from the cultivated clones by the presence of spinescent juvenile shoots, smaller fruits characterised by less fleshy mesocarp and lower oil content, as well as by a long juvenile stage that may last for several decades in some individuals.

As pointed out by Heenan et al. (1999), wild olives in Auckland and the Hauraki Gulf islands are the European olive (*Olea europaea* subsp. *europaea*), which corrects the impression given in Webb *et al.* (1988) that wild olives in New Zealand are African olive, *Olea europaea* subsp. *cuspidata*. African olive does not appear to have become naturalised in Auckland, though cultivated trees on Mt Wellington produce abundant crops of fruit.