

Hello Everyone,

Termites. Termites are not normally mentioned in this group but the discovery of a large nest of whiteants under two rooms in my house created chaos and in the subsequent upheaval, work on the newsletter was very delayed for which I apologise. The positive side of the outcome has been that an overdue review of records and hakea specimens is well underway. However, throwing out the excess can be a real heartache!

Study Groups are formed to study a particular genus of plants with the aim of assessing their horticultural possibilities above all. When reading the newsletters of other study groups I am impressed with the effort needed in many cases to collect seed, make sure the growing conditions and the soils are right and the difficulties experienced in keeping plants alive. Many of their problems do not apply to Hakea. Hakea seeds remain fertile for many years, are generally easy to collect (except for those in high trees that need to be climbed or those that require the donning of leather gloves) and hakeas will grow in all sorts of poor soils or good. The only area where a specific species does not survive is Burrendong Arboretum where Peter Althofer reported that *H. elliptica* always suffered from severe insect attack on the leaves. AM I CORRECT ?

I do not expect that we can come to conclusions about the northern Australian species because the seed is almost impossible to collect or buy, but please check your records and let me know if some species refuse to grow or thrive in your garden or district and we should obtain in time a much clearer picture.

Thanks to the generosity of Regions and the support of several Groups, we can now afford to explore suggestions put forward by members. Ideas can come from anyone, so please send your letters in. One suggestion I would like to make is that I put a list of members in the newsletter each year. We are a very scattered lot but in this way members travelling around may like to call on one another.

In N/L 15 I mentioned seeing a slide of *H. trineura* with an attractive red and yellow flower. In the current Birds and Native Plants Study Group Newsletter, the leader Barbara features hakeas and reports the following: In 1974 Colin Cornford noticed a hakea with golden new growth while travelling through the Canoona area, between Marlborough and Rockhampton. It was identified by David Hockings as *H. trineura*, which was thought to be extinct as it had not been sighted since 1890. This plant is restricted to a fairly small area at Canoona, and has also been found in a small area near the Manning River in northern N.S.W. At Canoona (about 45 km N of Rockhampton on the Bruce Highway) it grows on the lower slopes of steep stony ridges. It has proved to be adaptable as a garden plant. *H. trineura* is an erect, open shrub which can grow up to 5 m. but is generally around 2-3 m. with a spread of 1-2m. It has thick lanceolate leaves which are smooth and lime-green in colour, 7-12cm. long with three prominent veins. New growth is golden. Flowers are green to greenish-yellow and borne in axillary racemes in late winter and spring. Flowers produce copious amounts of nectar.

I was able to buy a young plant last year and it looks very healthy despite a very cold and wet winter this year.

TAPE. I have made up a collection of 50 slides with a taped commentary which will be available for borrowing from mid October. I intend making up another tape with slides for the same purpose but I need more spare time. I have envisaged country groups or individual members using these.

NEW SPECIES

Two new taxa within the *H. obliqua* R. Br. complex

Within what has previously been known as *H. obliqua* in Western Australia there are two distinct species, one from the sand plain heaths of the Esperance region and the other from the heaths north of Perth. As the name *H. obliqua* (also known as *H. brooksiana* [brookeana] F. Muell., see Blackall & Grieve 1988) applies to the species from the Esperance region, the northern species is here described as new. This species, *H. psilorrhyncha*, has a longer pistil, longer anthers and longer pedicel and perianth than *H. obliqua* (Table 1). In fresh material it also has a very distinctive pollen presenter (Fig. 1), being very swollen behind the face which contains the stigma and presents the pollen; in dried specimens this pollen presenter collapses but it can still be distinguished from that of *H. obliqua* by its different point of attachment to the style (Fig. 2), and its length (Table 1). There is also a difference between the two species in fruit and seed characters. The fruit of *H. obliqua* (Fig. 2) has a small apical beak with corky outgrowths over most of the fruit body while that of *H. psilorrhyncha* has a longer, smooth and tapering beak in contrast to the corky outgrowths



Fig. 1. Flowering specimen of *H. psilorrhyncha* R.M. Barker showing the distinctive pollen presenter.

The new species is known to be non-lignotuberous as it is killed by fire (George 1984) but *H. obliqua* has still to be investigated for this character.

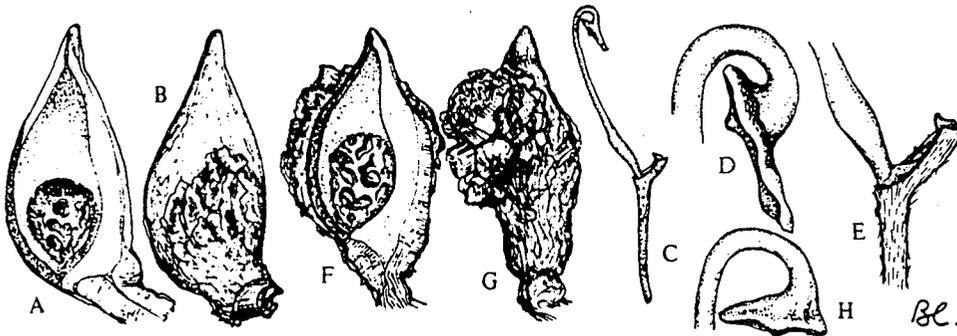


Fig. 2. Comparison of *H. obliqua* R. Br. and *H. psilorrhyncha* R.M. Barker. A-E, *H. psilorrhyncha*. A and B, inside and outside of fruit, $\times 1$; C, flower, tepals removed, $\times 2$; D, pollen presenter, $\times 12$; E, gland, $\times 5$; (all Wilson 3878). F-H, *H. obliqua*. F and G, inside and outside of fruit, $\times 1$ (cult. Adelaide Bot. Garden); H, pollen presenter, $\times 12$ (Aplin 4217).

at the base of the fruit body. While it is not known for certain, the two species may also differ in the presence and absence of a lignotuber.

Overlapping in distribution with both of these species (Fig. 3) is a new taxon which is here treated as a new subspecies of *H. obliqua*, although it is possible that field work may reveal further characters to justify distinguishing it as a new species. For the present only floral characters can be used to separate it from typical *H. obliqua* ssp. *obliqua*. A comparison of these characters, which include pedicel and perianth length, is given in Table 1. The new subspecies has been named ssp. *parviflora* because of the smaller flower size than the typical subspecies.

It may be that the taxon occupies a different ecological niche to that of *H. obliqua* and *H. psilorrhyncha*, both of which occur in sand heaths in their respective areas. Ecological annotations on specimens refer to it as being occasional in heath to 1 m together with *Petrophile ericifolia*, *Melaleuca pungens* and *Calytrix leschenaultii*, in yellow sand over laterite, to *Banksia* woodland, to sand with *Actinostrobilus arenarius*, to *Melaleuca acuminata* and *Thryptomene prolifera* heaths in yellow sandy loam and to open dwarf scrub with low heath and sedges on white sand.

Another species within the *H. obliqua* complex, *H. polyanthema* Diels, occurs in the same area as *H. psilorrhyncha* and *H. obliqua* ssp. *parviflora* but it has much smaller flowers (Table 1) and is easily distinguished by the contrasting white hairs on the claw and rust-brown hairs

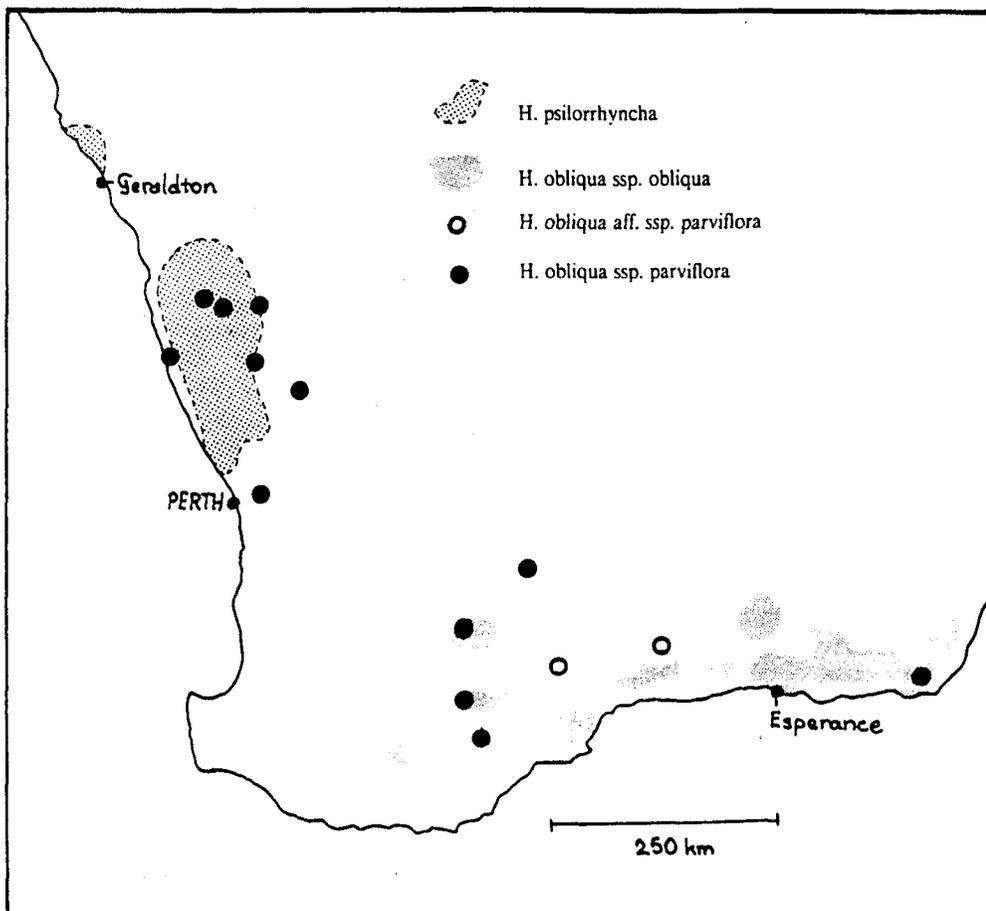


Fig. 3. Distribution of *H. psilorrhyncha* R.M. Barker, *H. obliqua* R. Br. ssp. *obliqua* and *H. obliqua* R. Br. ssp. *parviflora* R.M. Barker.

on the limb, while *H. psilorrhyncha* and *H. obliqua* ssp. *parviflora* have hairs the same colour throughout the perianth. If flowers are lacking then *H. psilorrhyncha* and *H. polyanthema* can be distinguished by the width of their leaves, 1.1-2.5 mm broad in *H. psilorrhyncha* and 0.8-1.2 mm broad in *H. polyanthema*, or if fruits are present, by the lack of a long smooth beak and the lesser development of corky tissue in *H. polyanthema*.

Table 1: Comparative length measurements of the pedicel, perianth, pistil and anthers of the species of the *H. obliqua* complex.

	pedicel length	perianth length	pistil length	anther length
<i>H. obliqua</i> ssp. <i>obliqua</i>	3.5-6 mm	5.5-7.5 mm	6.5-10 mm	0.5-0.6 mm
<i>H. obliqua</i> ssp. <i>parviflora</i>	1.5-2.5 mm	4.5-5.5 mm	6-6.5 mm	0.5 mm
<i>H. polyanthema</i>	1.5-2.5 mm	3.5-4.2 mm	5 mm	0.4 mm
<i>H. psilorrhyncha</i>	6-8 mm	6.5-9 mm	10-11 mm	1 mm

Hakea psilorrhyncha R.M. Barker, sp. nov.

Holotype: P.G. Wilson 3878, 1.xi.1965, c. 25 km NW of Badgingarra (PERTH); isotypes: AD, 1 duplicate to be distributed.

Illustration: A.S. George, *Introd. Proteaceae W. Austral.* 68, pl. 96, 97 (1984).

Erect shrubs with smooth grey bark, 1-4 m tall, non-lignotuberous; branchlets and young leaves densely appressed-sericeous, hairs ferruginous initially, becoming white, persistent until flowering on branchlets, quickly glabrescent on leaves. *Leaves* simple, terete, rigid, ± straight, obliquely or widely spreading with respect to branch, 2-5 (-9.6) cm long, 1.5-2.5 mm broad, grooved basally on lower side at base or not; mucro 2.5-3.5 mm long, porrect. *Inflorescence* an axillary umbel; involucre 5-5.5 mm long, outer bracts appressed-pubescent in upper half, mid-brown, yellow or paler in lower half. *Flowers* 6 or 8; rachis developing directly from leaf axil, simple, obscure, with white and rust-brown hairs; pedicel 6-8 mm long, densely appressed-sericeous, hairs cream-white or golden, extending onto perianth; torus oblique with gland on upper side; perianth dilated in basal half, recurved apically, 6.5-9 mm long in late bud; anthers 1 mm long, dark-coloured; pollen red-brown; gland large, U-shaped, 1.6-1.7 mm long, 0.2 mm high; pistil 10-11 mm long; style recurved apically and remaining so, red; disc of pollen presenter obliquely inserted on style and not centred, parallel to main axis of style, white, 1.5-1.8 mm long; stigma tiny, impressed in face of pollen presenter, not centred. *Fruit* on branchlets substantially thicker than others of same age, solitary, 3.5-5 cm long, in lateral view obliquely ovate, 1.5-2.3 cm wide, basally with lines of large stout corky projections decurrent on one side with smooth, gradually attenuate beak, dehiscing fully down one side, almost fully down the other; seed scar marginal, oblique. *Seed* obliquely ovate, 24-28 mm long, 12-15 mm broad; seed-body 10-13 mm long, black, with slender dagger-like projections or unevenly dissected, white about margin; wing completely encircling seed-body but body not centred, mid- to dark-brown.

Distribution & ecology

Found in sand or clay in mallee or open heath between Geraldton and Perth, W.A.

R.M. Barker

J. Adelaide Bot. Gard. 13 (1990)

Flowering: September to October.

Note: The name 'psilorrhyncha' is derived from two Greek words *psilos*, smooth, and *rhynchos*, snout, referring to the the beak of the fruit.

H. obliqua ssp. **parviflora** R.M. Barker, ssp. nov.

Subspecies nova prope *H. obliquam* ssp. *obliquam* sed differt parvioribus (4.5-5.5 mm longis) floribus et pedicelis, foliis et fructibus angustioribus et fructibus vix subere tegenti.

Holotype: E.C. Nelson 17237, 28.viii.1973, 20 km west of Coorow (PERTH); isotype: CANB.

Compact shrub, 1-1.5 m tall. *Leaves* 2.5-6 cm long, 1.2-1.5 mm broad; densely appressed-pubescent when young, hairs ferruginous, quickly glabrescent. *Inflorescence* axillary umbel of 2-6 paired flowers, always with developing ferruginous vegetative shoot at base of very short rachis; rachis appressed sericeous, hairs white; pedicel 1.5-2.5 mm long, densely appressed-sericeous, hairs white or cream-yellow, extending onto perianth; perianth 4.5-5.5 mm long; anthers 0.5 mm long; pistil 6-6.5 mm long; style recurved apically so that disc of pollen presenter is parallel with it; stigma impressed in disc, not centred. *Fruit* 2.5-3.5 cm long, smooth with some corky tubercles, in lateral view obliquely ovate, 1.3 cm wide.

Distribution & ecology

Found on the plains between Geraldton and Perth and further to the east in the Lake Grace area. Found in low heaths in sand with such species as *Petrophile ericifolia*, *Melaleuca pungens* and *Calytrix leschenaultii*, with *Melaleuca acuminata* and *Thryptomene proliferata*, with *Actinostrobus arenarius* or within *Banksia* woodland.

Flowering: August to September.

FINANCIAL REPORT to 30th JUNE, 1991

Balance b;fwd	30.6.90	251.37	Less Expenditure	
Subscriptions - Regions		62.00	Printing	30.52
"	Groups	18.00	Postage	26.09
"	Members	91.00	Stationery	8.74
Bank Interest		13.32	2 Tapes	6.50
		<u>435.69</u>	F.I.D.	.09
				<u>71.94</u>

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