Summary. *Tephrosia dura* Baker (*Leguminosae*), a little known shrub with a localised disjunct distribution in northern Somalia and southern Yemen, is illustrated and fully described. Data on its history, distribution, ecology and on initial experiences of its cultivation are provided.

The elegant tri-radiate shape of this species’ showy bright red corolla may remind one, at a first glance, of some *Dracula* or *Masdevallia* orchids rather than of a member of the pea family. The surprising shape of the corolla is caused by a few modifications of the typical papilionaceous flower: the flag (vexillum) is unusually long and narrow, the wings (alae) of similar length as the flag are spreading, and the keel (carina), which is commonly longer than the wings, is only half of their length. Among the other c. 400 species of the pantropical genus *Tephrosia*, which has a centre of diversity in Africa (Geesink, 1981), the species is equally unusual with this corolla structure. All the more it seems hard to believe that so spectacular and attractive a plant has neither been illustrated nor gained any attention since it was described as a new species more than a hundred years ago.

The species became known to science between 1893 and 1896. The name *Tephrosia dura* was published by John Gilbert Baker, Keeper of the Herbarium at the Royal Botanic Gardens Kew, with a brief description based on non-flowering material only (Baker, 1894: 331). The material had been collected earlier in the same year, i.e. 1894, by William Lunt (specimen no. 171) on the British expedition of Mr Theodore and Mrs Mable Bent into the Wadi Hadhramout, today in the Republic of Yemen, where they had hoped to find remains of the ancient civilisation of Arabia Felix (Bent & Bent, 1900). Another, flowering, specimen had been collected one year earlier, in 1893, by the German Leo Hirsch, a Berlin physician. He was a serious and ambitious amateur interested in the geography, ancient history and archaeology of southern Arabia, and the first European to reach the equally famous and mysterious Wadi Hadhramout. The plant specimens
he brought back to Berlin were studied at the Berlin Botanic Garden by Georg Schweinfurth, Gustav Lindau and Paul Taubert, and also sent by Schweinfurth to Baker at Kew (Hirsch, 1897: 296). Taubert, who studied *Leguminosae* and thus also Hirsch’s specimen (no. 79) of the *Tephrosia* species, received around the same time another specimen from the German collector and traveller Johann Maria Hildebrandt (specimen. no. 836), gathered on the other side of the Gulf of Aden, in north-eastern Somalia. Taubert, apparently unaware that these two specimens were conspecific with Baker’s *Tephrosia dura*, described them as a new species under the name *Tephrosia decorticans* with a brief but instructive description (Taubert, 1896: 184). The synonymy of *T. decorticans* with *T. dura* was established by Oskar Schwartz (1939: 108) a few years before the two syntypes of Taubert’s binomial were destroyed during the bombing raids on Berlin.

Our *Tephrosia* was one of the first known species with a localised, disjunct distribution on both sides of the Gulf of Aden. Many more such distribution patterns of species and genera have now become known to science (see, e.g. Kürschner, 1986). They all bear witness to the close affinities between the floras on either side of the gulf, which date back to the time before the separation of the Arabian Peninsula from the African continent in the late Tertiary.

Both the ultimate part of the Horn of Africa and south-eastern Yemen were, during most of the twentieth century, accessible to European botanists only with difficulties. Their flora therefore remained poorly known to science until the last quarter of the twentieth century. Since then our knowledge has increased considerably and has resulted in, for example, the *Flora of Somalia* (Thulin, 1993-) and *Flora of the Arabian Peninsula and Socotra* (Miller & Cope, 1996-) projects. Botanical research in the region has focused, however, on the novelties, and the interest of plant lovers has been directed chiefly towards the rich succulent flora. This may explain why *Tephrosia dura* has received little attention so far.

In northern Somalia *Tephrosia dura*, named in Somali ‘boeha’ (Thulin, 1993: 400), is restricted to the arid lowland near the coast of the province Sanaag, between 46° and 49°E, where it grows on gravelly ground at 0–120 m (Thulin, 1993: 400). Across the Gulf of Aden, in southern Yemen, our species is named ‘abweer’ in the Shehr region. It is known so far from scattered occurrences in wadis of the arid coastal plains and hillsides of eastern Shabwa and
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*Tephrosia dura*

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Hadhramout, from near Rodoum at 47°41'E (Kilian, Hein, Bamuile & Hubaisan YP 1330) to Wadi Azid at 50°12'E (Kilian, Hein & Hubaisan NK 6932), as well as from wadis in the similarly arid interior of Hadhramout, e.g. from Wadi Hadhramout and its tributaries (Lunt 171, Wissmann 1036, fide Schwartz 1939: 108). The species grows on gravelly, sandy, or sandy-loamy ground usually at or near the ‘seil’ bed (the bed of the stream after the rare rains) of the wadis.

The specific epithet dura (Latin: hard) refers to the wood of the shrub. In fact, in coastal Hadhramout (Shehr region) the scoparious straight branches of our species are cut by the local people for roofing houses as a preferred, durable material to fill the space between the roof or ceiling beams. As is the case with other Tephrosia species, T. dura is not browsed by livestock.

**Cultivation.** The species has been in cultivation in Mukalla, Yemen, for less than one year, so our knowledge of its behaviour in cultivation is still limited. The results so far are, however, encouraging. Seeds planted 1–2 cm deep in sandy soil germinated readily after 5–7 days. The seedlings kept in the shade for the first few months reached a size of c. 30 cm after four months, started branching around 10 cm above the ground and the main stem became woody at the base. After six months the plants all exceeded 0.5 m in height. The cultivated plants tolerate irrigation with somewhat saline water (2.5 mM salinity) and have proved also to be resistant to drought. Drought-resistance and a moderate tolerance of salinity had already been presumed from its natural habitats in dry wadi beds in the arid coastal plains of Hadhramout. In such habitats the plants nevertheless keep their foliage all year round and are obviously even able to flower and fruit throughout most of the year. Combining modest ecological requirements and profuse flowering, the species appears particularly suitable as an ornamental for public places in cities in arid regions. First attempts to grow the species in the glasshouse (with extra lighting, at a minimum temperature of 15°C) at the Botanic Garden Berlin-Dahlem are also promising.


**DESCRIPTION.** Shrub to 2–3 m, for the most part with an inconspicuous though dense indumentum of minute appressed, hyaline, simple hairs; young shoots densely appressed-hairy, older twigs and branches glabrous, with pale to medium brown, rather thin and smooth, longitudinally cracking bark. **Leaves** alternate, imparipinnate, 3–5-foliolate; petiole, rhachis, leaflets and stipules densely appressed-hairy; pulvinus scarcely swollen; stipules bract-like, c. 1 mm long, triangular, acute, brownish; leaflets entire, leathery, narrowly oblanceolate, 15–60 × 2–8 mm, ± acute and mucronulate, pulvinate (pulvinus like that of the leaf), without stipels; with dense secondary venation. **Flowers** axillary, single or, more rarely, two at the same time. **Pedicels** 6–20 mm long, wiry, spreading-erect, densely appressed-hairy; bracts triangular, acute, c. 1 mm long, bracteoles even smaller, both appressed-hairy. **Calyx** bilabiate, densely appressed-hairy, the upper two lobes connate except the distal 0.5–1 mm, the three lower lobes narrowly triangular,

**Tephrosia dura.** A, vexillum; B, one of the pair of alae; C, one of the two elements of the carina; D, androecium; E, gynoecium; F, calyx, the calyx tube opened, showing the two upper lobes almost entirely fused and the three lower lobes. Scale bar = 5 mm. Drawn by Ingo Haas.
3–4 mm long; calyx cup at the sinus between the upper and the lower lobes 4–5 mm long. Corolla papilionaceous, tri-radiate, petals all minutely appressed-hairy abaxially; vexillum narrowly lanceolate, 22–28 × 3 mm, turned straight back and forming with the similarly long alae an almost even Y, distally with adaxially enrolled margin, at base immediately above the claw with a pair of lobes and there 5 mm wide, adaxially bright red with one median and 1–2 lateral longitudinal yellow lines on either side, abaxially yellowish-greenish red; alae narrowly oblanceolate to elliptical, 26–29 × 5–7 mm, bright red adaxially and pale reddish abaxially, v-like spreading and in the distal half twisted longitudinally for almost 90°, thus turning the adaxial surface upwards; alae in the proximal quarter adherent to the carina; carina including the claw 15 mm long, 5–6 mm high in the distal half, connate along the abaxial margin. Stamina 10, diadelphous, the filaments of 9 stamina united to one another for most of their length, forming an adaxially open sheath, the adaxial stamen free to the base; authors uniform, versatile. Nectary intrastaminal, a ring c. 0.6 mm high surrounding the stipe of the ovary. Ovary with up to c. 12 ovules, style glabrous, inwards-curved, minutely appressed-hairy only adaxially at its base, stigma capitate. Pods at maturity 40–90 × 5–7 mm, flattened, ± linear, slightly upcurved towards apex, acute to acuminate, surface dark grey and appressed-hairy, with (1)2–10 developed seeds, dehiscent with two valves. Seeds 5–8 × 4–5 × 3 mm, seed coat pale brown, smooth; embryo with the radicle bent.

**Distribution.** Northern Somalia and southern Yemen.

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**References**


