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RESEARCH ARTICLE

NOMENCLATURAL STATUS OF ELAEOCARPUS SERRATUS VAR. WEIBELII ZMARZTY (ELAEOCARPACEAE)

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Abstract

The paper proposes to elevate the status of *Elaeocarpus serratus* var. *weibelii* described by Sue Zmarzty from the southern Western Ghats of the Peninsular India.

Introduction:-

The concept of biological species has always been debatable even among biologists, however, the understanding on the same is very essential, since species diversity considered as one of the basic units for biodiversity. Scientifically, the biological species referred to a 'gene pool; agreeable for recombination through sexual reproduction and exclusively has no intermixing and recombination with other 'gene pools'. According to Mayr (1969), 'species are a group of interbreeding or potentially interbreeding natural populations that are reproductively isolated from other such groups'. Indeed, the systematic treatment of a taxon at different rank is certainly at the discretion of the taxonomist, who is carrying out studies on that particular plant or animal. Taxonomic circumscription of a taxon, especially at subspecific and varietal level in plant kingdom, is rather controversial among plant taxonomists themselves. While describing a new taxon based on morphological characters, criteria like constancy of characters and qualitative assessments amongwhich compatibility, crossing, etc. are to be considered seriously for the rank of taxa. Even a single, but constant qualitative character can differentiate a taxon from its allied one. In this juncture, for a plant taxonomist, Harison's (1960) definition of the species seems more relevant and logical as 'one of the categories of taxa recognized in the International Code of Botanical Nomenclature that to which a binomial is given'.

Elaeocarpus L. (Elaeocarpaceae) is a well-known genus comprising about 200 species distributed in tropical and subtropical in Asia, Australia and Pacific Islands (Murti, 1993). In India, the genus represents 29 species and is distributed mostly in north eastern and southern India and a few in Andaman and Nicobar Islands. The fruits of most of the species coming under the genus are edible and their seeds are used as beads for rosaries and bracelets. The Western Ghats of peninsular India harbours 12 species, in which 6 are endemics.

While revising the taxa of *Elaeocarpus* L. under Section *Elaeocarpus* in south India and Sri Lanka, Zmarzty (2001), proposed a new variety of *E. serratus* L. form south India, designated as *Elaeocarpus serratus* var. *weibelii* Zmarzty. Subsequent detailed morphological studies on this new taxon, has revealed that there are significant differences with its type variety and the taxon described certainly deserves a higher status equivalent to a species. Sue Zmarzty, while circumscribing the new variety, has clearly pointed out that the identification of the new taxon is

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rather tentative and the author has strongly recommended for more detailed field studies and characterization. A detailed taxonomic study on fresh materials collected from Bonaccord, Agsthyamala Biosphere Reserve undoubtedly indicates that the taxon deserves the rank of species. From morphological point of view, *Elaeocarpus serratus* var. *weibelii* is well demarcated from its allied variety in definite qualitative characters like fruit shape, stone shape and architecture, etc. (Morphological differences are given in Table 1). For a taxonomist concerned, these characters are strong enough to attribute higher status to this taxon equivalent to a species. Hence, here elevate the status of *Elaeocarpus serratus* var. *weibelii* to a specific level and citation of the taxon is as follows.

Elaeocarpus weibelii (Zmarzty) Shareef, S.P.Mathew & Shaju status et **comb.nov. (Figure1)**
Elaeocarpus serratus var. *weibelii* Zmarzty, Kew Bull.56:437.2001

Medium sized trees, to 15m tall; bark rough, blackish brown; blaze orange red; branch tips indumentum adpressed or semi-spreading later become glabrous when mature, with scars of fallen leaves. Leaves simple, alternate, spiral, clustered at twig ends, subcoriaceous, dark green, elliptic, oblong-elliptic or occasionally slightly obovate, 7–14.8×3.6–8cm, obtuse or obtusely acuminate or contracting abruptly into a point, pustulate when dry, glabrous or with sparse semi-spreading indumentum on mid and main veins beneath; main veins raised above; lateral nerves 6-9 pairs branched with domatia at axils beneath; leaf teeth 5–15mm apart. Petiole 16–45mm long with adpressed or semi-spreading indumentum. Inflorescence axillary or lateral, to 9cm long. Flowers 14–22 per inflorescence, peduncle with adpressed or semi-spreading indumentum. Flower bud ovate. Flowers white, c.1.5cm across at anthesis; pedicel 5–8mm long, adpressed or semi-spreading indumentum. Sepals 5, green, 5.5-6.5mm long, acuminate at apex, outer surface usually densely sericeous, inner sparsely so. Petals 5, white, broadly obovate to obovate, 7–8×2.1–3mm with 30–36 apical divisions, sparsely hairy near margin, glabrous inner surface. Stamens 22-28; filaments 0.8-1mm long, puberulous; anther lobes 1.6-2mm long, oblong, puberulous; outer anther-teeth tipped with setae. Ovary c. 2×1.5mm, ovate, silky tomentose, 1-3 loculed, partially surrounded at base by disk. Style 2.8–4mm long, base silky tomentose. Fruit broadly ellipsoid to globose, 1.7–2.5×1.5–2.2cm, smooth, green, glabrous, both ends depressed (as in apple) or rarely obtuse or rounded at apex; not edible, highly bitter; fruit pedicel to 1cm long; stone broadly ellipsoid to globose, 1.3–1.6×1.2–1.8cm, rounded to broadly cuneate at base, rounded or obtuse at apex, surface finely and irregularly channelled to shallowly rugose; fertile locules 1–3.

Table 1:- Morphological differences of *Elaeocarpus weibelii* with *E. serratus*

Characters	**Elaeocarpus serratus**	**E.weibelii**
Habit	Large trees, to 25m tall	Medium trees, to 15m tall.
branch tip	Sparse, short, straight adpressed hairs	Indumentum adpressed or semi-spreading
Petiole	9–25mm, glabrous or with sparse, short, straight adpressed or semi-spreading hairs	16–45mm long; indumentum adpressed or semi-spreading
Leaves	Narrowly or broadly elliptic or obovate, 4.3–9.5×2.3–5cm; blade with sparse, short straight adpressed hairs beneath, at least on midvein towards base, verrucose or not; leaf teeth 2–10mm apart	Elliptic, oblong-elliptic or occasionally, slightly obovate, 7–14.8×3.6–8cm, glabrous or with sparse semi-spreading indumentum on mid and main veins beneath; leaf teeth 5–15mm apart
Main veins	4–7 pairs	6–9 pairs
Inflorescence	Axillary	Axillary or lateral
Pedicel	5mmlong	5-8mm long
Flowers	6–25 per inflorescence	14–22 per inflorescence
Sepals	5.5–8.8mm long, outer surface with sparse, short, straight adpressed hairs	5.5–6.5mm long, outer surface usually densely sericeous, inner surface sparsely so
Petals	Obovate, 5–9.5×1.2–3.2mm, with 24–32 apical divisions	Broadly obovate to obovate, 7–8×2.1–3mm with 30–36 apical divisions
Ovary	Oblong or obovoid,	Ovate
Fruit	Oblong, ellipsoid or oblong-ellipsoid or strongly obovoid, 2.1–3.9cm, base cuneate to narrowly rounded, apex obtuse, rounded or pointed, edible, slightly acidic	Broadly ellipsoid to globose, 1.7–2.5×1.5–2.2cm, glabrous, both ends depressed (as in apple) or rarely obtuse or rounded at apex; not edible, highly bitter
Stone	Oblong, ellipsoid, or obovoid, 1.6–3.2cm long,	Broadly ellipsoid to globose, 1.3–1.6×1.2–

	narrowly cuneate base, surface shallowly channelled and pitted to deeply concave sculptured with irregular blunt projections, sutures weakly to obviously defined; fertile locules 1–3	1.8cm, rounded to broadly cuneate at base, rounded or obtuse at apex, surface finely and irregularly channelled to shallowly rugose; fertile locules 1–3

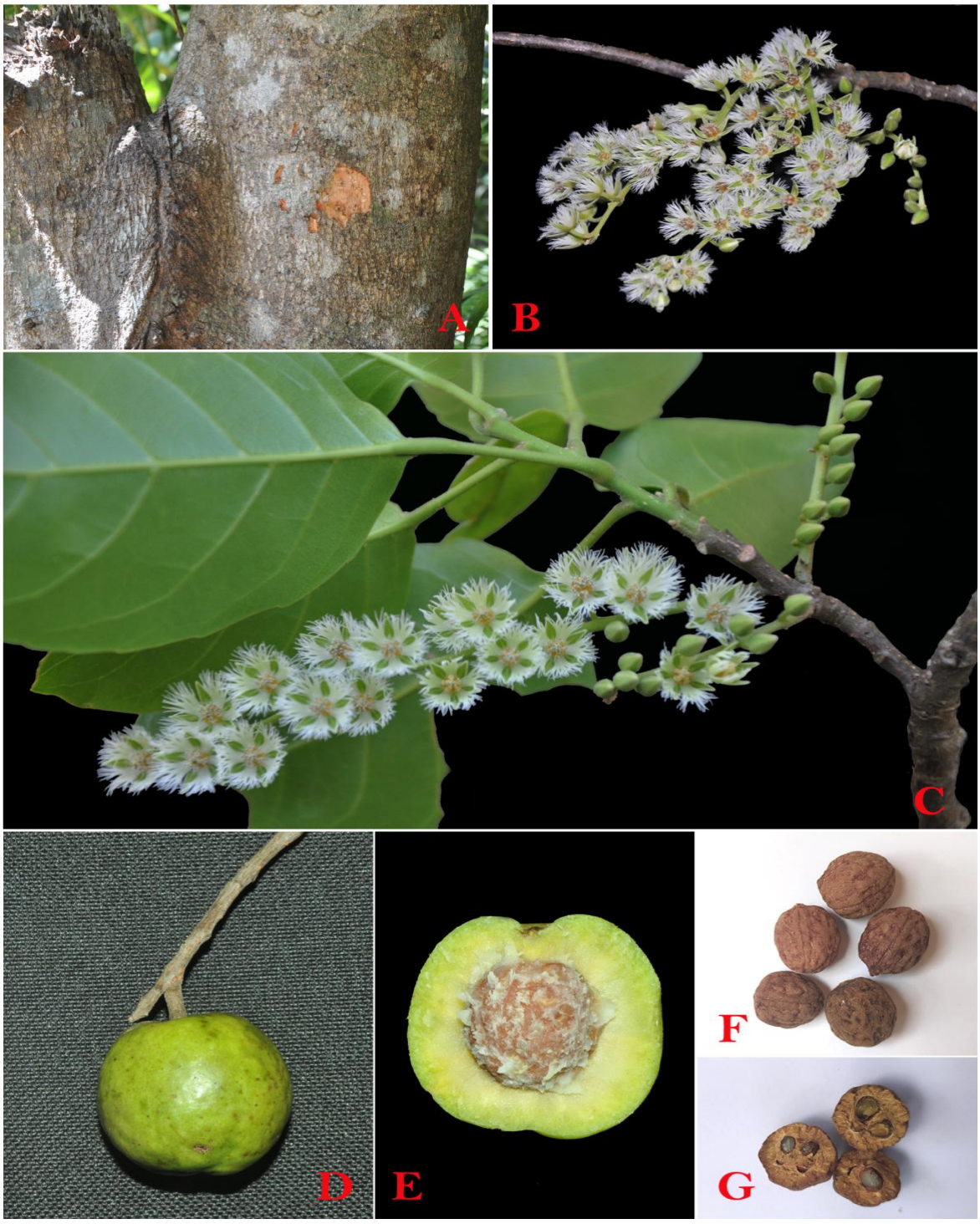

Figure 1: *Elaeocarpus weibelii* (Zmarzty) Shareef, S.P. Mathew & Shaju, *comb.nov*. **A**.Bark showing blaze, **B & C.** Inflorescence**, D.** Fruit, **E.** Fruit showing seed, **F.** Seeds, **G.** Seeds showing fertile locules (transverse section)

Specimens examined:India, Kerala state, Thiruvananthapuram district, Bonaccord, 400m, 31.12.2014, *S.M.Shareef 79270* (TBGT); *ibid*., 10.10.2017, *S.M.Shareef 79274* (TBGT); *ibid*., 400m, 29.05.1989, *N.Mohanan 8418* (TBGT); Attayar, 750m, 01.03.1991, *N.Mohanan 10568* (TBGT); Bonaccord, 650-700m, 05.02.1991, *N.Mohanan 10322* (TBGT); *ibid*., 21.01.1992, *N.Mohanan10323* (TBGT).

Flowering & fruiting: October- May

Distribution:-
The species is seen in the wet evergreen primary and secondary forests and semi-evergreen forests between altitudes of 400-800m from m.s.l. and is distributed in Kerala and Karnataka states of South India. Endemic.

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