SPARGANIACEAE[1] (C. A. Backer, Heemstede)

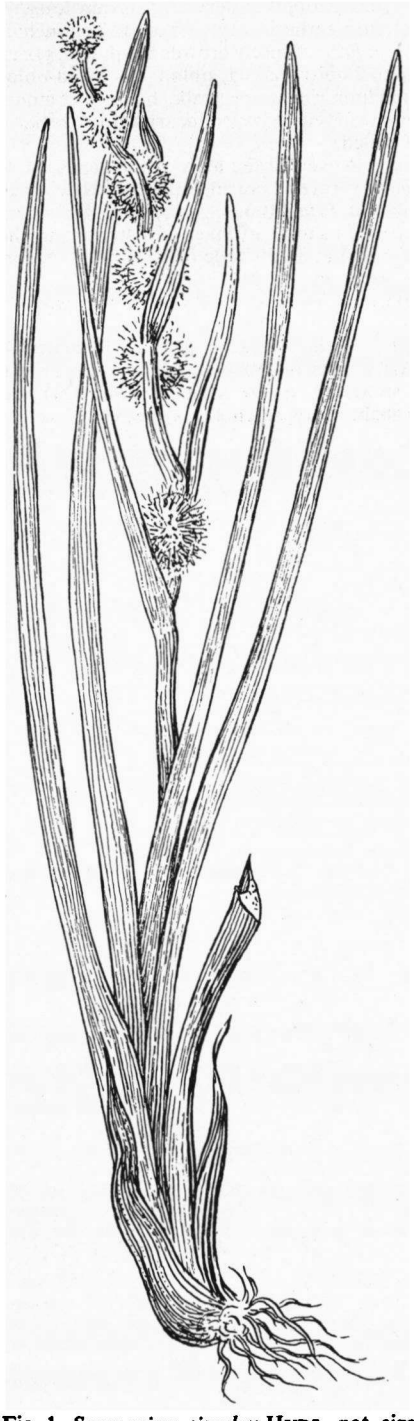

Fig. 1. *Sparganium simplex* HUDS., nat. size.

1. SPARGANIUM

LINNÉ, Sp.Pl. (1753) 971; Gen. Pl. ed. 2 (1754) *no* 925.

Aquatic often rather large perennial herbs with creeping, subterranean stolons. Stem simple or branched, leafy at the base, stiff or flaccid, erect or floating, bearing a terminal spike or panicle. *Leaves* long, linear from a sheathing base. *Flowers* (♂♀), crowded in separate globose clusters; lower clusters ♀, in or above the axil of a leafy bract, stalked or sessile; higher clusters ♂, bractless or with a small bract. ♂: *Perianth* actinomorphic, choriphyllous. Tepals 3(–6), spathulate. Stamens 3(–6); filaments free or connate at the base; anthers basifixed, oblong; pollen globose. ♀: *Tepals* as in ♂ but larger. Ovary 1, exceptionally 2, sessile with a narrow base, unilocular; ovule 1, pendulous; style 1, usually simple, rarely forked; stigma unilateral, short. *Fruits* densely crowded, sessile with a narrow base, crowned by the style, indehiscent; exocarp spongy, endocarp hard; testa thin; embryo in the middle of the mealy endosperm.

Distr. Temperate and colder regions of the N. hemisphere, crossing the tropics in Malaysia over the mountains towards Australia and New Zealand. About 15 species have been distinguished, in *Malaysia* only one *sp.* occurs.

Ecol. Usually in shallow stagnant or slowly moving fresh water. Flowers anemophilous.

1. Sparganium simplex HUDS. Fl. Angl. ed. 2 (1778) 401; KOCH, Syn. ed. 2 (1843/45) 1786; HOOK. *f.* Fl. Br. Ind. 6 (1893) 490; GRAEBN. Pfl. R. 4 (1900) 16; ASCH. & GR. Syn. Mitt.-Eur. Fl. ed. 2, 1 (1912) 433; STEEN. Bull. J.B.B. III, 13 (1936) 254.

f. **simplex.**—*f. typica* ASCH. & GR. Syn. Mitt.-Eur. Fl. ed. 1, 1 (1897) 434.

Perennial, erect, glabrous, aquatic herb, 40–80 cm high. Basal *leaves* distichous, erect, above the wide basal sheathing part more or less contracted (sometimes stalk-like), above the more or less trigonous contraction broadened, narrowly linear

(1) The family consists of one genus only.

with a tapering rather obtuse apex, smooth-margined, rather thick and hard, in a living state distinctly keeled below, up to 80 cm long (basal sheath included), 3/4–1 1/2 cm wide, rather densely and finely longitudinally nerved, between the nerves rather closely horizontally cross-veined; higher cauline leaves and bracts linear from a stem-clasping base. Inflorescence erect, long-stalked, up to 70 cm long (stalk included), not surpassing the leaves. ♂ *Flower-clusters* (upper part of inflorescence) 4–8, bractless or with a small bract, rather close together, many-flowered. Tepals often 3, thin with a thickened midrib, ± 2 1/4 mm long. Stamens 3 or more, greatly exceeding the perianth; filaments very thin, 4–5 mm long; anthers oblong, 1 1/4–1 1/2 mm. ♂ Flowers falling off after anthesis, leaving the rachis bare. ♀ *Clusters* 2–6, remote, usually inserted far above the axil of the leaf-like, linear, 6–25 cm long bract, very many-flowered, very dense, during anthesis 1–1 1/4 cm diam., in fruit up to 2 1/2 cm diam. Tepals 3 or more, spathulate with a subrhomboid apex, strongly 1-nerved, 5–6 mm long, persistent after anthesis. Style (short stigma included) ± 4 mm. *Fruits* densely crowded, squarrose, shortly (up to 2 mm) stalked, oblong or ovoid-oblong, 5–6 mm long (including stalk, but not computing the often curved style); endocarp rather thick, usually 1-celled.

Distr. Covering the area of the genus, in *Malaysia* very rare: Central Sumatra, New Guinea (Arfak and Tafa Mts).

Ecol. On shores of lakes and streams in shadowy forests, at an altitude of 1500–2400 m, sometimes gregarious.

Vern. *Kleine egelskop*, D, *simple burreed*, E.

Note. Rather variable species. The material of the Arfak Mts in W. New Guinea is sterile (*cf.* HATUSIMA, Tokyo Bot. Mag. 56, 1942, 421) but in all probability represents this species.