S13
Typha angustifolia swamp
Typhetum angustifoliae Soó 1927

Synonymy
Typha angustifolia reedswamp Pallis 1911; *Typhetum angustifoliae* Tansley 1939; *Typhetum angustifolio-latifoliae* (Eggler 1933) Schmale 1939 *p.p.*; *Scirpeto-Phragmitetum medioeuropaeum* (Koch 1926) R.Tx. 1941 *p.p.*; *Scirpetum lacustris* Chouard 1924 *sensu* Passarge 1964 *p.p.*; *Typha angustifolia* society Wheeler 1978; *Typha angustifolia* emergent stands Meres Survey 1980.

Constant species
Typha angustifolia.

Rare species
Elatine hexandra, *E. hydropiper*.

Physiognomy
The *Typhetum angustifoliae* is almost always dominated by *T. angustifolia* which forms an open or closed canopy of gregarious stout shoots usually about 2 m tall. Although the community has been recorded as a floating marginal mat (e.g. Sinker 1962), the rhizomes seem normally to be buried in the topmost layers of substrate: Lambert (1951) rarely encountered floating stands along the Bure and these seemed to be less vigorous than firmly anchored vegetation and to have perhaps originated by interference. In Broadland, *T. angustifolia* has been shown to attain a maximum shoot density rapidly, within a month of shoot emergence in April, with a subsequent decline due to self-thinning and an increase in size of the survivors. Dead shoots were observed to stand for up to two years, although most had collapsed within a year of death (Mason & Bryant 1975).

Stands are often pure, rarely rich in species and show little consistency in associates. Other reedswamp dominants such as *P. australis*, *T. latifolia* and *Glyceria maxima* may be locally prominent and there are sometimes scattered sprawls of *Solanum dulcamara* and *Calystegia sepium*, clumps of tall herbs such as *Phalaris arundinacea* and *Epilobium hirsutum* and occasionally small emergents such as *Mentha aquatica* and *Alisma plantago-aquatica*. Rooted and free-floating aquatics may gain a hold between the stools or persist along the advancing outer margins of stands. *Lemna minor* and *L. trisulca* may be abundant here with *Polygonum amphibium*, *Potamogeton natans*, *P. pectinatus*, *Elodea canadensis* and *Myriophyllum spicatum*. The rare waterworts, *Elatine hexandra* and *E. hydropiper*, have been recorded in the community as submerged mats or sprawls on damp silt.

Habitat
The community is characteristically found in standing or slow-moving, neutral to basic, lowland waters with silty substrates, around the margins of lakes and ponds and in dykes. This is very much the same habitat type as that of the *Typhetum latifoliae* but the two dominants seem rarely to occur together and *T. angustifolia* is perhaps more tolerant of less eutrophic conditions than is *T. latifolia*. Like the *Typhetum latifoliae*, this community seems to occur in a considerable range of water depths, being found in up to 60 cm, though it may be less frequently exposed than that community. Floating mats, which have not been encountered in the *Typhetum latifoliae*, can rise and fall with changes in water level, although, in winter, the accumulation of stored carbohydrate in the rhizomes of the *T. angustifolia* makes them sink (Sinker 1962).

Zonation and succession
Stands of the community, sometimes patchy or forming but a narrow belt, may abut directly on to open water or be fronted by a narrow zone of the *Scirpetum lacustris*. In small ponds and along dyke margins, the *Typhetum* may give way in shallower water to the *Sparganietum erecti* but in larger and gradual open-water transitions the community may be part of more extensive zonations passing landwards to other types of swamp such as the *Phragmitetum australis*, the *Caricetum paniculatae* or the *Cladietum marisci* which may, in turn, grade to rich-

fen vegetation of the *Peucedano-Phragmitetum* (e.g. Lambert & Jennings 1951, Lambert 1951, Sinker 1962, Wheeler 1978, 1980*a*). Around the Bure broads in Norfolk, detailed stratigraphical evidence has been adduced to show that such zonations represent a variety of successional sequences which share an identical early stage in which the *Typhetum angustifoliae* plays a major role in the colonisation of open water (Lambert & Jennings 1951, Lambert 1951). In this area, *P. australis* was the usual coloniser of the *Typhetum*, building up a fairly stable semi-floating raft into which the cyperaceous dominants then invaded. At Sweat Mere in Shropshire, *C. paniculata* seems to colonise the *Typhetum* directly (Sinker 1962).

It is clear, however, that, in some areas, the extent of the *Typhetum* and presumably therefore its status in successions have been modified since the earlier accounts. First, the aquatic element so prominent in past descriptions of the community and of the fronting *Scirpetum* has been much depleted by disturbance and eutrophication. Second, loss of *Typhetum* itself has been an important component in the general decline of swamp reported from Broadland in recent years (e.g. Boorman & Fuller 1981). *Typha* spp. are eaten by larger wildfowl (Ogilvie 1978) although *P. australis* seems to be preferred against *T. angustifolia* by greylag and preferential grazing of mixed or contiguous stands may, indeed, give the latter a temporary advantage (Fiala & Kvet 1971, Boorman & Fuller 1981). *T. angustifolia* is, however, avidly eaten by coypu which will dig up the roots and rhizomes, a rich source of carbohydrate in winter, and which seem to prefer it to *P. australis* (Gosling 1974). Anon (1978) considered *T. angustifolia* to have been particularly badly hit by coypu and, in their confirmation of the importance of this animal in the general Broadland swamp decline, Boorman & Fuller (1981) showed how, at some sites, the marginal fringe had been pushed back with the virtual elimination of the *Scirpetum* and *Typhetum* zone to leave *P. australis* as the coloniser in shallower water.

Distribution

The community has a scattered distribution throughout the south-east and the Midlands, becoming rare in Wales and to the north.

Affinities

The *Typhetum angustifoliae* shows greater affinities with rich-fen vegetation of mesotrophic conditions than does the *Typhetum angustifoliae* and, in Britain, the two dominants rarely seem to occur together.

Floristic table S13

Typha angustifolia	V (5–10)
Solanum dulcamara	I (1–5)
Mentha aquatica	I (1–5)
Phalaris arundinacea	I (2–3)
Polygonum amphibium	I (3–4)
Calystegia sepium	I (3)
Lemna minor	I (1–7)
Juncus effusus	I (3)
Lemna trisulca	I (1–5)
Phragmites australis	I (3–6)
Elodea canadensis	I (2–5)
Myriophyllum spicatum	I (1–2)
Alisma plantago-aquatica	I (3–4)
Scirpus lacustris tabernaemontani	I (4)
Epilobium hirsutum	I (1)
Potamogeton pectinatus	I (5)
Potamogeton natans	I (5)
Typha latifolia	I (3)
Lysimachia vulgaris	I (2)
Calliergon cordifolium	I (3)
Littorella uniflora	I (3)
Elatine hydropiper	I (3)
Glyceria maxima	I (2)
Glyceria fluitans	I (3)
Iris pseudacorus	I (3)
Menyanthes trifoliata	I (3)
Nymphaea alba	I (3)
Ranunculus flammula	I (4)
Callitriche obtusangula	I (6)
Glyceria plicata	I (4)
Rumex hydrolapathum	I (3)
Agrostis stolonifera	I (4)
Number of samples	21
Number of species/sample	4 (1–11)
Vegetation height (cm)	181 (100–350)
Vegetation cover (%)	87 (50–100)

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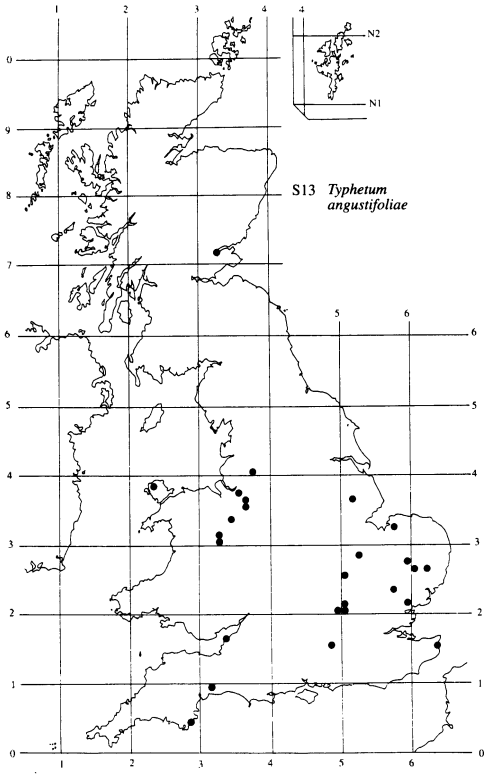

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