

NOTES ON CAREX FLAVA AND ITS ALLIES

II—CAREX LEPIDOCARPA IN THE BRITISH ISLES*

By ELIZABETH W. DAVIES

University College of Leicester

Carex lepidocarpa grows in isolated and scattered areas throughout the country, wherever suitable localities occur. It shows considerable variation in form and size over its range, but this can usually be correlated with its different habitats, and its regional adaptation to climate and topography. In fact this species seems to form a discontinuous topocline in the British Isles (Huxley, 1939) and the character gradient in this case is clearly associated with latitude and altitude. Thus the southern lowland and Scottish mountain plants represent the extreme forms. The former, confined to the fens and calcareous marshes in southern England, is very different from the latter, a plant of base-rich flushes on high mountains, and these forms remain distinct even in cultivation. However, as some populations in the Midlands and northern England (the carboniferous limestone of the Pennines, in Derbyshire, Yorkshire, Durham and Westmorland) show intermediate characters and are difficult to classify, it seems best to regard these extreme forms as subspecies. A short description of the species and the two subspecies found in the British Isles now follows.

C. LEPIDOCARPA Tausch, 1834, *Flora*, **17**, 179. *C. flava* L. sec. Host, 1801, *Gram. Aust.*, **1**, t. 63, (pl. florifera), non L.

A tufted glabrous perennial (20-) 30-50 (-60) cm. high, generally smaller and more slender in all its parts than *C. flava* L. Stems stout and erect, or slender and slightly pendulous. Leaves (1.5-) 2-2.5 (-4) mm. wide, usually about half the length of the stems or less; ligule *c.* 1 mm., truncate or nearly so. Lower sheaths green, sometimes becoming brown and fibrous. Male glumes 3-3.5 mm., obovate or obovate-lanceolate, brownish-hyaline, midribs green or brown, not distinctly keeled. Female spikes 1-3 (-4), 8-12 × 5-7 mm., rarely contiguous, often somewhat distant, sessile, or lower shortly peduncled. Bracts leaf-like, slender, equalling or sometimes exceeding the inflorescence. Female glumes 2 mm., ovate, acute, dark brown or yellow-hyaline. Perigynia (3.5-) 4.25-4.5 (-5.0) mm., obovoid-triangular, narrowed gradually into a beak, all but the upper arcuate-deflexed when ripe; beak 1.5 mm., attenuate, serrulate. Nuts 1.5 mm., broadly obovoid-triangular or almost round. Fl. 5-7. Fr. 7-9.

(1) *C. LEPIDOCARPA* Tausch subsp. *LEPIDOCARPA*. Plate 6a.

I have not seen Tausch's type from Bohemia. Tausch, however, refers to Host's plate (see above), and suggests that it is similar to his own plant. This plant resembles the lowland form of *C. lepidocarpa* in every way. I have, therefore, assumed that Tausch's plant is the same subspecies.

A tufted perennial (20-) 30-50 (-60) cm. Stems slender and often curved when in fruit. Leaves 1.5-2.5 (-3.5) mm. wide, herbaceous, usually about half the length of the stems. Female glumes pale brown-yellow, hyaline, caducous. Perigynia (3.5-) 4.25-4.5 (-4.75) mm. (Fig. 1). Fl. 5-6. Fr. 7-8. $2n = 68$.

* Part of a thesis approved for the degree of Ph.D. by the University of London.

This subspecies is confined in the British Isles to calcareous districts including base-rich marshes in the lowlands of Scotland. It is locally abundant on the carboniferous limestone of the Pennine range, and on the oolite of the Cotswolds and Northamptonshire; and fairly common in the fens and on the chalk and chalky boulder clay of S.E. England (Distribution map).

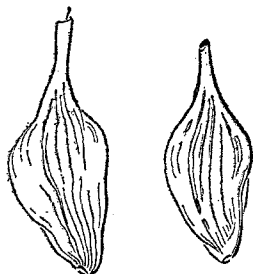


Fig. 1. Perigynia of *Carex lepidocarpa*; left, subsp. *lepidocarpa*; right, ssp. *scotica*.

(2) *C. LEPIDOCARPA* Tausch subsp. *scotica* E. W. Davies subsp. nov. Plate 6b.

Similis subsp. *lepidocarpa*, sed culmis validis, rigidis, semper erectis, 8-30 cm. altis, foliis 2.5-4 mm. latis, plerumque brevissimis, coriaceis; glumis femineis fusco-castaneis, persistentibus; utriculis saepe longioribus, 4-5 mm. longis, differt. Typus in Herb. Mus. Brit. 88, Mid Perth: calcareous flush at 1,000 metres, Creag-an-Lochain, E. W. Davies, 4 Sept. 1951.

A robust tufted perennial (8-) 15-20 (-30) cm. Stems stout, rigid, usually remaining erect throughout fruiting. Leaves 2.5-4 mm. wide, usually very short, tough and fibrous. Female glumes dark chestnut-brown, seldom caducous. Perigynia (4.0-) 4.25-4.5 (-5.0) mm., often longer than in subsp. *lepidocarpa* (Fig. 1). Fl. 6-7. Fr. 8-9. $2n = 68$.

In contrast to subsp. *lepidocarpa*, this plant is normally confined to base-rich flushes on mountains in northern England, Scotland and Wales, and is usually found between 660 and 1,000 metres. However, at Inchnadamph in West Sutherland it grows only a few metres above sea level, together with many other high mountain plants (distribution map, fig 2).

The distribution map is based on data obtained from Nelmes (1947), from specimens collected in the field, which are now preserved at University College, Leicester, and from others seen at the following herbaria: Kew, Oxford, Cambridge and J. E. Lousley. This shows a composite distribution of the two subspecies, and their intermediate members of the topocline, but separate details of the localities and vice-counties of the two subspecies not already given by Nelmes are listed below.

LOCALITIES IN THE BRITISH ISLES

C. LEPIDOCARPA Tausch subsp. *LEPIDOCARPA*

- V.c. 8. S. WILTS.: Bulford, 1941, J. E. Lousley.
 11. S. HANTS.: St. Clair's Farm, Droxford, 1952, E.W.D.
 12. N. HANTS.: marsh near Greywell Waterworks, 1936, J. E. Lousley.
 22. BERKS.: Cothill Fen, 1935, J. E. Lousley; Frilford, 1938, A.R. Clapham; Cumnor, 1938, A. R. Clapham.
 23. OXON.: Latchford, 1938, A. R. Clapham; Eynsham, 1913, G. C. Druce.
 26. W. SUFF.: Market Weston Fen, 1936, J. E. Lousley; Redgrave Fen, 1933, J. E. Lousley; Hinderclay Fen, 1933, J. E. Lousley.
 27. E. NORF.: Roydon Fen, near Diss, 1934, E. C. Wallace

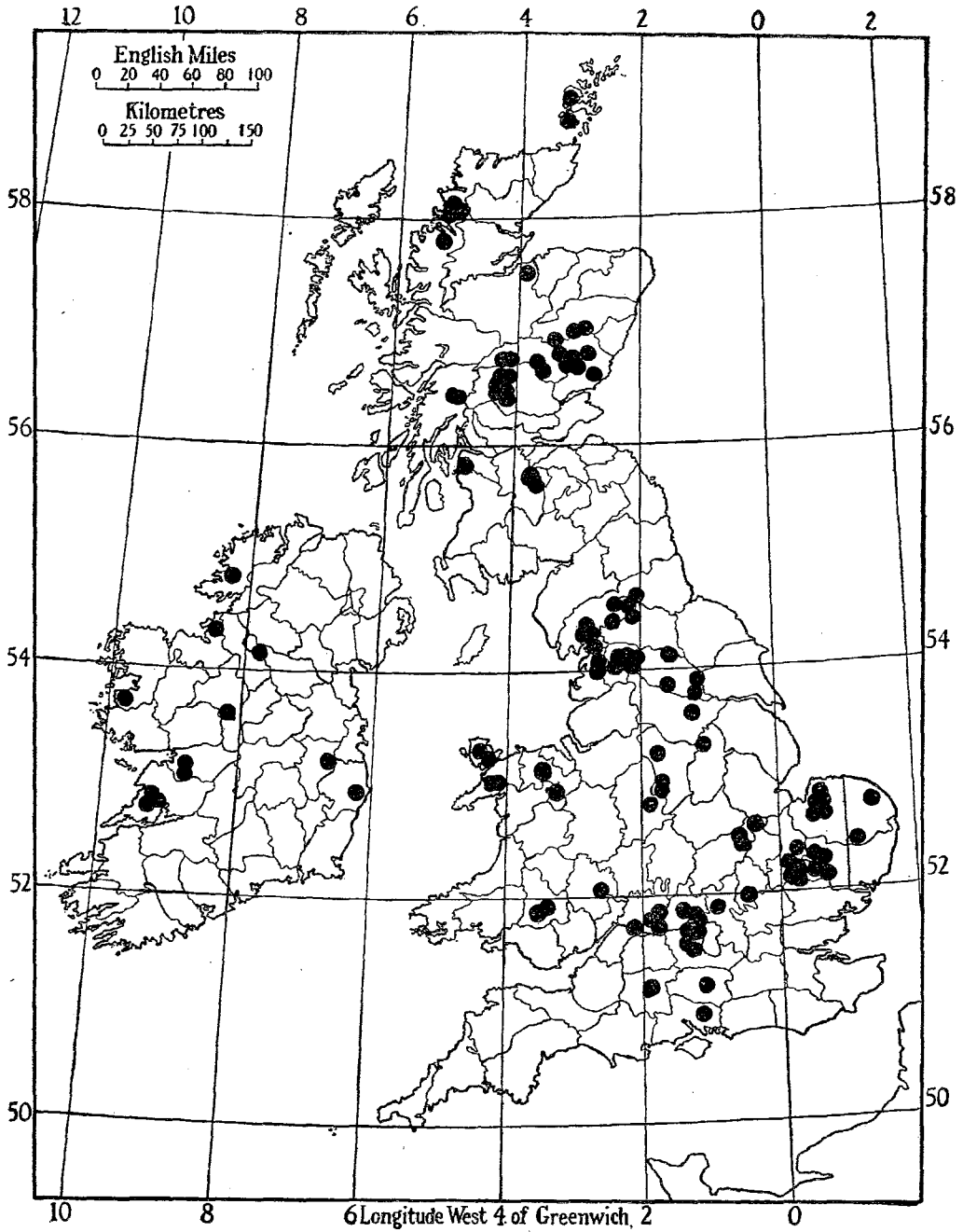
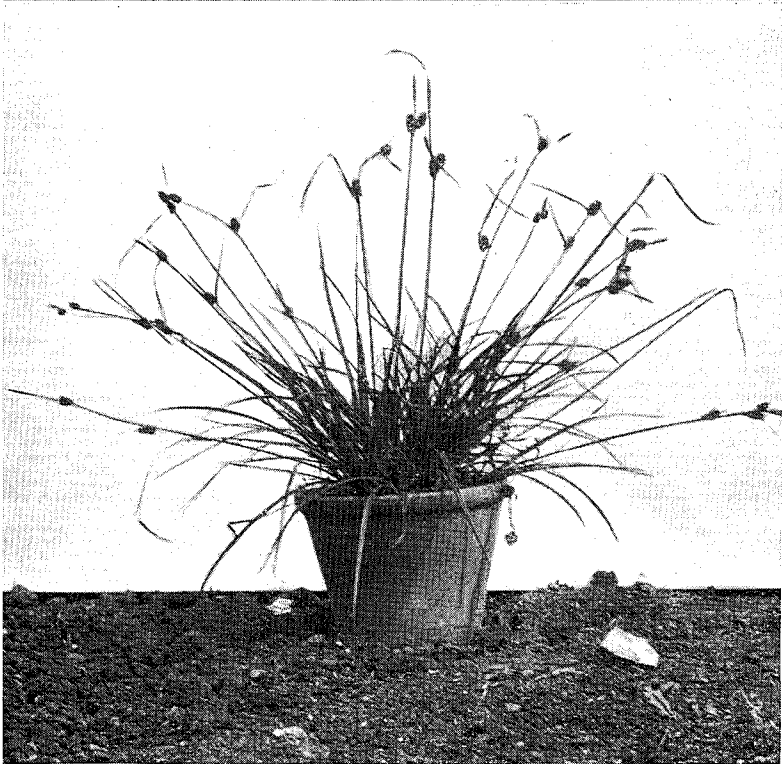
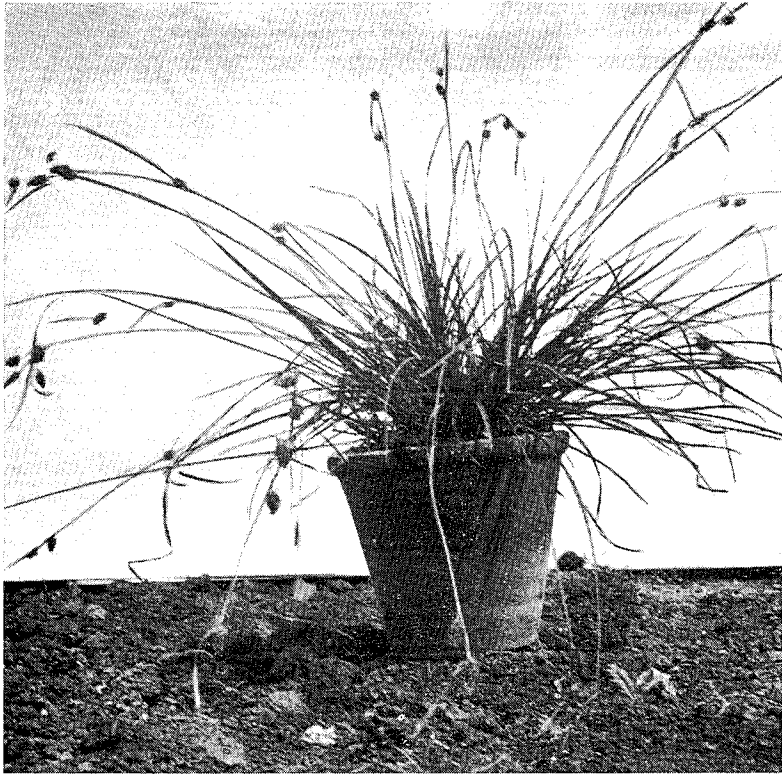


Fig.-2. The distribution of *C. lepidocarpa* Tausch in the British Isles.

PLATE 6.



- a. *C. lepidocarpa* Tausch subsp. *lepidocarpa* from Wicken Fen, Cambs. ($\times \frac{1}{4}$).
b. *C. lepidocarpa* Tausch subsp. *scotica* E. W. Davies from Creag-an-Lochain, Meall Tarmachan, Perth.
($\times \frac{1}{4}$).

28. W. NORF. : Derby Fen, 1951, *E. W.D.*; Foulden Common, 1936, *J. E. Lousley*; Caldecote Fen, 1919, *J. E. Little*; Blo Norton Fen, 1934, *J. E. Lousley*; near Oxborough, 1936, *J. E. Lousley*.
29. CAMBS. : Wicken Fen, 1951, *E. W.D.*; Fulbourn Pond, 1951, *E. W.D.*; Chippenham Fen, 1951, *E. W.D.*; meadow, Whittlesford, 1946, *S. M. Walters*.
30. BEDS. : The Litany, Totternhoe, 1952, *E. W.D.*
32. NORTHANTS. : Wittering Marsh, 1952, *E. W.D.*; Barnack Quarries, 1946, *F. J. Taylor*; Hornstock, 1913, *G. C. Druce*; marsh near Bedford Purlieus, 1913, *G. Chester*.
33. E. GLOS. : S. Cerney gravel pit, Cirencester, 1951, *E. W.D.*
42. BRECON : Penderyn, 1946, *H. K. Airy Shaw & E. Milne-Redhead*.
48. MER. : Llanaber, 1921, *G. C. Druce*.
50. DENB. : Trevor Rocks, Llangollen, 1933.
52. ANGL. : Cors Bodeilio Fen, 1951, *P. W. Richards*; Cors Goch, 1937, *J. H. Chapple*.
57. DERBY : Millersdale, 1908, *C. R. Billups*; Monsal Dale, 1947, *A. P. Conolly*.
64. MID W. YORK : Askham Bog, near York, 1946, *E. W.D.*; near Ripon, 1950, *C. West*; Great Close Mire, Malham, 1951, *E. W.D.*; outflow of Malham Tarn, 1951, *E. W.D.*; Gordale Scar near Malham, 1951, *E. W.D.*; Ribblehead, 1947, *E. W.D.*; limestone flush, Moughton Scar, 1951, *E. W.D.*; Clapham Beck, Ingleborough, 1952, *E. W.D.*; Kilnsey, 1946, *J. E. Lousley*.
65. N.W. YORK : flush, Cronkley Scars, Teesdale, 1947, *E. W.D.*
66. DURHAM : Widdybank Fell, 1951, *E. W.D.*; Langdon Beck, 1947, *T. G. Tutin*.
69. WESTMORL. : flush between Sedbergh and Kirkby Stephen, 1952, *E. W.D.*
76. RENFREW : stream near Brother Loch, Newton Mearns, 1936, *R. Mackechnie*.
77. LANARK : source of Medwin, Pentlands, 1938, *J. E. Lousley*.
- H. 15. S.E. GALWAY : Newtown, Gort, 1937, *J. E. Lousley*.
20. WICKLOW : Ballyman Glen, 1937, *J. E. Lousley*.
25. ROSCOMMON : Annaghmore, 1952, *T. G. Tutin*.
27. W. MAYO : Lough Talt, Slieve Gamph, 1952, *T. G. Tutin*.
28. SLIGO : Ben Bulben, 1952, *T. G. Tutin*.

C. LEPIDOCARPA Tausch subsp. SCOTICA E. W. Davies

- V.c. 49. CAERN. : Clogwyn du' Arddu, Snowdon, 1938, *J. E. Lousley*.
69. WESTMORL. : High Cup Nick, 1938, *J. H. Chapple*.
88. MID PERTH : Creag-an-Lochain, below Meall Tarmachan, 1951, *E. W.D.*; Creag-na-Caillich, 1951, *E. W.D.*; S.W. Coire, Ben Lawers, 1951, *E. W.D.*; stuit above Lochan-nan-Cat, Ben Lawers, 1951, *E. W.D.*; Loch Tummel, 1947, *T. G. Tutin*; Coire Heasgarnich, Glen Lyon, 1951, *E. W.D.*; Meall Ghaordie, 1948, *E. C. Wallace & R. Mackechnie*; Ben Laigh, 1916, *G. C. Druce*.
89. E. PERTH : Ben-y-Vrackie, 1951, *E. W.D.*; Spittal of Glenshee, 1952, *E. W.D.*
90. FORFAR : Glen Fiagh, 1906, *G. C. Druce*; Glen Doll, Clova, 1951, *E. W.D.*
92. S. ABERD. : Coire Kander, Glen Callater, 1934, *E. C. Wallace*.
96. EASTERNESS : Carn Eige, Glen nam Fiadh, 1947, *S. M. Walters*.
98. MAIN ARGYLL : Ben Douran, 1951, *E. W.D.*; Ben Lui, 1938, *J. E. Lousley*.
108. W. SUTHERLAND : Inchnadamph, 1952, *E. W.D.*
111. ORKNEY : Stromness, 1885, *G. Ellison*.

REFERENCES

- HOST, N. T., 1801, *Gram. Austr.*, **1**, 48, t. 63, fig. 4.
- HUXLEY, J. S., 1939, Clines : an Auxiliary Method in Taxonomy, *Bijdr. Dierk.*, **27**, 491.
- NELMES, E., 1945, Two critical groups of British Sedges, *Rep. Bot. Soc. & E.C.*, **13**, 95-99.
- SENAY, P., 1950, Le groupe des *Carex flava* et *C. oederi*, *Bull. Mus. Nat. Hist. Nat.*, Paris, 2me serie, **22**, 618-624.
- TUTIN, T. G., 1952, in CLAPHAM, A. R., TUTIN, T. G. and WARBURG, E. F., *Flora of the British Isles*, Cambridge.