

STUDIES ON *RANUNCULUS* L. SUBGENUS *BATRACHIUM* (DC.) A. GRAY

I. CHROMOSOME NUMBERS

By C. D. K. COOK

Botany Department, University of Liverpool

It has been thought worth while to publish a list of chromosome numbers even though work is still in progress. It is hoped to publish a taxonomic account later but in order to avoid undue confusion the references to the original descriptions are cited. A complete set of herbarium specimens of all the plants counted is deposited in the herbarium of the Botany School, Cambridge, England. An incomplete set is in the Botanische Staatssammlung, München, Germany. The specimens in München are suffixed by **M**. The collection of microscopical preparations will, for the time being, be kept by myself. All counts are cited as somatic numbers. When localities alone are cited it means that these are the origins of material that I have counted.

R. HEDERACEUS L., Sp. Pl., 556 (1753).

$2n = 16$. Langlet (1927), Böcher (1938). The Lizard, Cornwall, **M**; Sellings, Kent; an unknown locality in Portugal; Eifel, Wirftal, Prüm, Germany, **M**. An artificial autotetraploid ($2n = 32$) has been induced from the Lizard population using colchicine treatments. There is no evidence that this tetraploid occurs in nature.

R. OMIOPHYLLUS Ten., Fl. Nap., 4: 338 (? 1830). (*R. lenormandii* F. W. Schultz).

$2n = 16$. 6 km N. of Polizzi Generosa, Madonie Mts., Sicily, **M**.

$2n = 32$. Larter (1932). Two Bridges, Dartmoor, Devon, **M**.

R. TRIPARTITUS DC., Icon. Pl. Gall. Rar. 1, 15, tab. 49 (1808). (*R. lutarius* (Revel) Bouvet).

$2n = 48$. (Fig. 1a). The Lizard, Cornwall, **M**; Arne, Dorset. The count $2n = 32$, Cook (1959), was an error.

R. OLOLEUCOS Lloyd, Fl. Loire-Inf., 3 (1844).

$2n = 16$. (Fig. 1b). Maarne, 20 km S.E. of Utrecht, Netherlands, **M**.

R. BAUDOTII Godr., Mem. Soc. Roy. Nancy 1839, 21, fig. 4 (1840).

$2n = 32$. Böcher (1938), Christiansen in Sørensen (1955). Brading, Isle of Wight, **M**; Zicksee, St. Andrat-Frauenkirchen, S. E. Austria, **M**.

R. PELTATUS Schrank, Baier. Fl., 2 : 103 (1789).

$2n = 32$. Between Erlangen and Dechsendorf, Nürnberg, Germany, **M**. Herbarium specimens of plants collected in Denmark and counted by K. Larsen have been seen in the herbarium of the Universitetets Botaniske Museum, Copenhagen, Denmark. The Danish localities are : Hestehaven (18.V.1952); Bastrup (13.V.1953); Plejelt, N. of Fredensborg (17.V.1953); Vejenbrød (25.V.1953); Baesbakke, Fyns Hoved (7.VI.1953).

R. AQUATILIS L., Sp. Pl. 556 (1753).

$2n = 48$. Christiansen in Sørensen (1955). Castle Donington, Leicestershire, **M**; Stretham, Cambridgeshire, **M**; Tuddenham, Suffolk; Pöcking, Starnberg, S. Germany, **M**; Erling, Herrsching, S. Germany, **M**.

R. aquatilis and *R. peltatus* are frequently confused. The following counts of $2n = 32$ could refer to either. Larter (1932), Böcher (1938), Svälov in Ehrenberg (1945), Delay (1947), Turala in Skalińska (1959).

R. TRICHOPHYLLUS Chaix in Vill., Hist. Pl. Dauph. 1, 335 (1786).

$2n = 16$. Langlet (1927).

$2n = 32$. Reese (1957). Wicken Fen, Cambridgeshire, M; Woodwalton Fen, Huntingdonshire; Bretby, Derbyshire; the river Würm, Obermenzing, München, S. Germany, M; Ascholding, S. Germany, M; Oberstdorf, S. Germany, M.



Fig. 1. Root-tip mitoses in *Ranunculus* spp., $\times c.3500$. (a) *R. tripartitus*, Lizard, Cornwall, $2n = 48$. (b) *R. ololeucos*, Maarne, Holland, $2n = 16$. (c) *R. rionii*, Prater, Wien, Austria, $2n = 16$. (d) *R. sphaerospermus*, between Qurna and Madina, Iraq, $2n = 16$.

R. TRICHOPHYLLUS subsp. *LUTULENTUS* (Perrier & Songeon) Vierhapper, Abh. Zool.-Bot. Ges. Wien, **16** : 109 (1935); including *R. confervoides* Fr.

2n = **32**. Mattick in Tischler (1950), A. & D. Löve (1956), Jørgensen, Sørensen & Westergaard (1958). Funtensee, Berchtesgadener Alpen, S. Germany, **M**; Geissalpsee, Allgäuer Alpen, S. Germany, **M**.

R. RIONII Lagger, Flora, **31** : 49 (1848).

2n = **16**. (Fig. 1c). Pond near the 'Lusthaus', Prater, Wien, Austria, **M** (*Dupla-Exsiccata ex hb. Mus. Wien, Ch. Cook & A. Patzak, 24.VI.1960*); Himberg, S.E. Austria, **M**; Maqil, Basra, Iraq. The original material of the Iraq collection is in the Naturhistorisches Museum, Wien, Austria, (*K. H. Rechinger fil., No. 15808, 16.III.1957*).

R. SPHAEROSPERMUS Boiss. & Blanche in Boiss., Diag. ser. 2, **3** (5) : 6 (1856); not *R. aquatilis* subsp. *sphaerospermus* sensu Clapham in Clapham, Tutin & Warburg (1952) which belongs in the "*pseudofluitans*" group.

2n = **16**. (Fig. 1d). Between Qurna and Madina, Iraq; the original material of this collection is in the Naturhistorisches Museum, Wien, Austria, (*K. H. Rechinger fil., No. 8477, 17.III.1957*).

R. CIRCINATUS Sibth., Fl. Oxon., 175 (1794).

2n = **16**. Scheerer (1939), Turala in Skalińska (1959). Cheddar, Somerset; Hemington, Leicestershire; Wicken Fen, Cambridgeshire; Oberlaus, Glonn, S. Germany; Nymphenburg, München, S. Germany, **M**.

R. FLUITANS Lam., Fl. Fr., **3** : 184 (1778).

2n = **16**. Quorndon, Derbyshire; Donaueschingen, Württemberg, Germany, **M**;

2n = **24**. Schleissheimer Kanal, Dachau, S. Germany, **M**, (sterile).

2n = **32**. Temple Bridge, Suffolk, **M**; Wicken Fen, Cambridgeshire; Whatstandwell, Derbyshire.

THE 'PSEUDOFLUITANS' COMPLEX.

This complex contains many topo- and ecodemes some of which are genetically distinct. They are more or less confined to flowing water and range from types that look like *R. fluitans* to types that look like *R. peltatus*. As the whole group is imperfectly known no attempt has been made to name the various genodemes. Some are simple hybrids involving *R. fluitans* and *R. trichophyllus*, *R. peltatus*, *R. aquatilis* and, perhaps, *R. circinatus*. There is evidence that some are allopolyploids from these hybrids and some morphologically similar types have almost certainly arisen in different localities.

2n = **24**. The River Würm, Obermerzing, München, Germany, **M**, (sterile).

2n = **32**. River Elz, Prectal, Pfalz, Germany, **M**, (sterile); Sigmaringen, Württemberg, Germany, **M**, (fertile).

2n = **40**. Peakirk, Northamptonshire; Monsal Dale, Derbyshire, (both sterile).

2n = **48**. Greywell, Hampshire; Puddletown, Dorset; Foulmere, Cambridgeshire; Oberlaus, Glonn, S. Germany, **M**, (all fertile).

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