

CHROMOSOME NUMBERS OF  
*SAROTHAMNUS SCOPARIUS* (L.) WIMMER

By F. W. ADAMS\*

*Department of Botany, University of Sheffield*

*Sarothamnus scoparius* exists in erect and prostrate forms, the latter being referred to as subsp. *prostratus* (Bailey) Tutin by Tutin (1952), who states that it maintains its characters in cultivation and breeds true. He later (1953) points out that it should be called subsp. *maritimus* (Rouy) Ulbrich.

Morton (1955) figures and describes the chromosomes of both these subspecies, using, however, material from only one locality for each: from Longtown, Cumberland for subsp. *scoparius*, and from The Lizard, Cornwall, for subsp. *maritimus*. He claims that subsp. *scoparius* (the common subspecies) is tetraploid with  $2n = 48$ , and that subsp. *maritimus* is diploid with  $2n = 24$ . Camera lucida drawings of root-tip metaphase plates are included showing both chromosome number and morphology.

Böcher and Larsen (1955) confirm the statement of several other workers that subsp. *scoparius* is tetraploid with  $2n = 48$ , though they omit reference to a published British count of  $2n = 46$  from Maude (1940), subsequently quoted by Tutin (1952). They continue: "but recently Morton (1955) has shown that material of subsp. *prostratus* from The Lizard, Cornwall, has only  $2n = 24$ . The senior author had an opportunity to study this interesting form at Three Castles Head in Eire, and at Grosnez Point in Jersey. From the latter station seeds were brought home, and some few plants were raised which had the prostrate growth habit. Strangely, however, they proved to be tetraploid ( $2n = 48$ ) as was the case of all our cultures from many different stations in Europe."

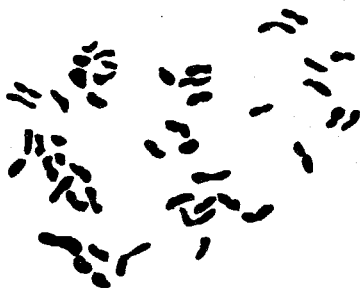


Fig. 1

*Sarothamnus scoparius* subsp. *maritimus* metaphase—some supercontraction evident. Spindle inhibitor used.

Recently (1956) I germinated seeds of the prostrate form from the colony near the Lizard Head lighthouse, Cornwall, and unlike Morton, I found the tetraploid number,  $2n = 48$ .

The study was based upon root-tip squashes from the germinating seeds.  $\alpha$ -bromonaphthalene was added to Knop's culture solution, and emulsified with a rapid stream

\* Now at Department of Botany, The University, Royal Botanic Garden, Edinburgh.

of oxygen. The germinating seeds were added and incubated at 25–30°C. for one hour. The root-tips were fixed in Carnoy with chloroform and, after maceration, squashed in acetic-orcëin. All seedlings examined, grown from seeds from most of the plants in the sampled colony, appeared to be tetraploid, an actual count of  $2n = 48$  being obtained. Similar squashes but without the use of the spindle-inhibitor also gave  $2n = c. 48$ .

These counts for subsp. *maritimus* from the Lizard, Cornwall, confirm those of Böcher and Larsen, and make it clear that the prostrate form is not invariably diploid.

#### REFERENCES

- BÖCHER, T. W. & LARSEN, K., 1955, Chromosome studies on some European Flowering Plants, *Botanisk Tidsskrift*, **52**, 129.
- MAUDE, P. F., 1940, Chromosome numbers of some British Plants, *New Phytol.*, **38**, 7.
- MORTON, J. K., 1955, Chromosome studies on *Sarothamnus scoparius* (L.) Wimmer, and its subspecies *prostratus* (Bailey) Tutin, *New Phytol.*, **54**, 68.
- TUTIN, T. G., 1952, in Clapham, A. R., Tutin, T. G. & Warburg, E. F., *Flora of the British Isles*. Cambridge.
- , 1953, in *New Combinations in the British Flora*, *Watsonia*, **2**, 297.