

in an animal tumour system selective inhibitors of Tx, which promotes platelet aggregation, and the administration of PGI₂ (or of substances which facilitate vascular PGI₂ synthesis), which prevents the formation of platelet emboli. Both procedures reduced the incidence of lung metastasis and in addition slowed the growth of the tumour growing at the site of injection. This latter effect is unlikely to involve interference with platelet

aggregation and is thought to be a direct effect on the rate of proliferation of the tumour cells by increasing cyclic AMP.

The meeting was successful in bringing together cancer research workers and many of the leaders in the area of prostaglandins. It was encouraging to both groups that manipulation of the AA cascade may have a role in both prevention and treatment of cancer although the key experiments remain to be performed. □

that the early part of the post-glacial in north-west Europe (pre 7,000 BP) was characterized by a vigorous circulation of air masses which would have brought dry, anticyclonic conditions to the area both in winter and summer. It may well be that many southern continental plant species were able to migrate into what are now oceanic regions in the north and west during those times. This would have brought into contact a variety of continental species of somewhat southerly and northerly affinities; it is interesting to note that all five of the species under discussion here are currently found together in central Poland, which may give some indication of the climatic conditions during the period of mixing. Rix and Woods¹ note that the Stanner Rocks specimens of *G. bohémica* are morphologically most akin to the western French populations on the continent, which may suggest a west European origin for the British population of this species.

The subsequent history of the mid Wales area has involved forest spread and increasing oceanicity of climate, both of which will have operated against the survival of all these species; but the rock outcrops, such as Stanner, have evidently acted as refuges. Such outcrops would not only have provided steep, unstable slopes keeping the woodland and canopy open and discontinuous, but may also have created microclimatic conditions appropriate for the survival of continental species of plant. *G. bohémica* on Stanner Rocks is currently restricted to shallow soils on southern and eastern aspects. These locations would be well insulated in summer, providing a 'micro-continental' climate, rather analogous to some of the present-day East Anglian breckland habitats of *S. perennis* and *V. spicata*. The importance of aspect for survival of a species at the edge of its climatic range is well documented for such plants as *Cirsium acaule*⁸ which reaches its northern British limit in Derbyshire but survives there mainly on southerly aspects. Even under these conditions fruiting is poor and experiments involving daily spraying of the developing fruit with water, thus lowering overall temperatures, reduced success even further. *G. bohémica* fails to fruit at Stanner, but persists by vegetative propagation.

The record of *G. bohémica* from Stanner Rocks is thus more than just one more species on our list — it may also provide important evidence of the climatic and vegetational history of the British Isles. □

A new British flower

from Peter D. Moore

BOTANISTS in the tropics will probably throw up their hands in horror but the fact remains that the discovery of a new species of flowering plant in the British Isles (and probably a native one at that) is news. Rix and Woods¹ have now officially recorded the finding of *Gagea bohémica* at Stanner Rocks, near Kington, mid Wales. Its inconspicuous leaves and flower undoubtedly contributed to its success in eluding detection until recently and to its initial misidentification. But the find also has some interesting biogeographical implications, for *G. bohémica* is a species of continental distribution, reaching its northwestern European limits in central Germany and the Seine Valley in France, and extending into central, eastern and southern parts of the European mainland. Stanner Rocks is a site far-removed from the remainder of its range.

One must consider the possibility that the plant has arrived at this location by chance dispersal but, as Carlquist² has recently emphasized, it is very difficult to study freak phenomena of this kind. *G. bohémica* reproduces by seed (though at Stanner Rocks only one per cent of the population flowers and no capsules have been observed) and by bulbils. Unlike some lake and seashore sites, a rock outcrop is an unlikely spot for the concentration of a bird migration route, making bird transport an unlikely explanation of its presence.

It is important to consider that Stanner Rocks boasts an unusual assemblage of rare plants currently exhibiting disjunct distributions, including *Lychnis viscaria*, *Veronica spicata* and *Scleranthus perennis*. Also, on some neighbouring outcrops in mid Wales, is *Potentilla rupestris*³. All of these have continental distributions, though *L. viscaria* and *S. perennis* extend further north than the others.

All these species are plants of low growth habit and demand light. Pigott and Walters⁴ proposed that plant assemblages

having a number of open habitat species of generally disjunct distribution were often associated with disturbed or unstable sites in which the forest cover had remained incomplete throughout post-glacial time. The plants now isolated in such sites may represent relicts of the vegetation of late-glacial or early post-glacial times, which have been extinguished over the bulk of their former range by forest expansion and consequent shading. In the case of Stanner

Rocks, such an explanation is supported by the sub-fossil record of certain of the plants concerned. *S. perennis* pollen has been found in late-glacial sediments of mid Wales⁵ and a seed of *L. viscaria* was found by Dickson, Dickson and Mitchell⁶ in late-Devensian material from the Isle of Man. Unfortunately, no sub-fossil records are available for *V. spicata*, *P. rupestris* or *G. bohémica* in Britain, but their current, rather southerly, continental distributions do not make them likely candidates for late-glacial relicts.

Lamb⁷ has constructed global maps of probable atmospheric pressure systems during winter and summer at several stages of post-glacial history, and he concludes



Gagea bohémica

Peter D. Moore is Senior Lecturer in the Department of Plant Sciences, University of London King's College, 68 Half Moon Lane, London SE24 9JF.

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2. Carlquist *Am. Scient.* 69, 509 (1981).
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4. Pigott & Walters *J. Ecol.* 42, 95 (1954).
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6. Dickson, Dickson & Mitchell *Phil. Trans. R. Soc. B258*, 31 (1970).
7. Lamb in *Climate: Present, Past and Future* Vol. 2, 382 (Methuen, London, 1977).
8. Pigott in *Flora of a Changing Britain* (ed. Perring, F.) 32 (Classey, Hampton, Middlesex, 1970).