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**YEAR BOOK
OF THE
HEATHER
SOCIETY**



1990



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THE HEATHER SOCIETY

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Gesellschaft der Heidefreunde

North American Heather Society

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Editorial

"Reading the first page of this Year Book shows that, once again in 1978, changes have occurred in the Heather Society. The post of President which has been vacant since the death of Sir John Charrington in July 1977, has now been filled by Mr. C. D. Brickell, who was elected at the Annual General Meeting of the Society in September". So began my first *Year Book* Editorial. In 1990 we again have a new President. Recently Mr. Brickell has expressed his wish to resign, and at the AGM in September 1989 David McClintock was unanimously elected as the fourth holder of the office. Elsewhere in this issue our Chairman, Maj.-Gen. Turpin, thanks our immediate past President, and reminds us of some of the distinctions of our new President.

It seems appropriate to recall the Presidential message in the 1979 *Year Book*, and I have selected several quotations from it. The first is "Our own Society is a prime example of the beneficial results of bringing together people with similar gardening interests". I would venture to suggest that it has been such an example since its foundation in 1963, and long may it remain so.

The second quotation is "Our knowledge of their history, cultivation and hybridisation has expanded enormously". There has surely been an increase in the rate at which our knowledge has grown since those words were written.

The final quotation is somewhat longer. "This important work, and the production of the Register, which in due course will become the standard for all heather names, is perhaps less well known to members than other aspects of the Society's activities. The aim is to stabilise and

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control the multitude of cultivar names which have appeared and will no doubt continue to appear - a benefit to us all. Names, however, are of little use without living plants and it is hoped that the establishment of a National Reference Collection of heathers at Wisley during the next few years will provide a means of direct comparison which will benefit all heather enthusiasts". Such projects inevitably take time to come to fruition. The National Heather Reference Collection at Wisley opened at Easter this year. Its progress from 1979 to 1990 is chronicled, again by Maj.-Gen. Turpin, on p 32 of this *Year Book*. Perhaps here it is apposite to draw your attention to the third paragraph of our new President's article on p 5.

The International Register to which Mr. Brickell referred is still to be published. It is hoped that the first edition will appear early in David McClintock's long tenure of the Presidency.

The President Writes

David McClintock, Platt, Kent.

Until Mr. Brickell took over, it was usually customary for the President to start the *Year Book* with his "bit". I think that this should be revived. But you get too much from me in most *Year Books*, so this should be short.

First, I want to thank you for electing me to this high office. It gives me special pleasure because I suppose that no-one could have kept up an association with our Society longer. After all, Sir John Charrington talked to me about his idea before he wrote his letter to the *RHS Journal* over 27 years ago. I still miss his genial gentlemanly charm, and wish I could see his broad smile when he learnt of the way his child has grown and prospered.

All editors of publications such as ours plead with their members for contributions. I hear members making observations which should surely be shared with others, recorded indeed for posterity, but few seem to get into print. As it is, look how relatively small a number of members contribute, especially to the *Year Book*; and note how often they are mostly the same year after year, so - ?

Two journals recently have confused our posts of President and Chairman. There is a great difference between the two. The Chairman is in charge of the orderly running of the Society, aided of course by the other officers. Pat Turpin has now done this job for eleven years and, goodness me, how would we have fared without him? One matter in which he has made all the difference is in the RHS Heather Competition, where he and Cherry achieve, time and time again, such an exemplary, but not unbeatable, standard. Were it not for his entries, I wonder if the RHS would continue with these twice a year. He has regularly bullied me to join in, but I now find myself invited to judge, which disqualifies me from showing. I know well that it is a bit of a chore having to bring and arrange the plants on the Monday before (or very early on Tuesday). Other specialist Societies e.g. Cyclamen, Fuchsia, Hardy Plant, Iris, let alone the Alpine Garden Society filling a whole hall with potted plants, make a better showing. So, those of you within reach please make the effort. The RHS or I will send you details on request. We need the publicity, and not to be outshone by others; and you may well get a prize. So - ?

I said that this should be short

From the Chairman

Maj.-Gen. P. G. Turpin, C.B., O.B.E., West Clandon, Surrey.

1989 was memorable for the appointment of a new President of the Heather Society. At the Annual General Meeting on the 3rd September at Trevelyan College, Durham University David McClintock was elected to succeed Chris Brickell, who had completed eleven years as President. During this time we have enjoyed his patronage, first as Director of the Royal Horticultural Society's Garden at Wisley and latterly as Director General of the R.H.S. At Wisley he was mainly responsible for the decision to make Howard's Field the home of the National Heather Reference Collection. He has also given the Society his support in many other ways, one of the most important being his part in the preparation of the case for the conservation of the name of *Erica carnea* in the face of attempts to change it to *E. herbacea*. We are most grateful to him for the prestige which he has brought to the office of President.

Our new President is well known to the members of the Society, first as a founder member since 1963, and then as Registrar and Vice-President. He brings to his new appointment an unrivalled knowledge of heathers and a wide experience of botany and horticulture. He has held a number of important appointments in the botanical and Natural History world, including Vice-President of the Linnean Society, President of the Botanical Society of the British Isles and President of the Ray Society. He is Vice-Chairman of the Scientific Committee of the R.H.S. In 1981 he was awarded the Veitch Memorial Gold Medal for "his scientific and practical contribution to botany and horticulture and in particular for his work in connection with heathers". He has written a number of books on Natural

History subjects, of which his *Companion to Flowers* is perhaps the most well-known, and has contributed a multitude of articles to various scientific and botanical publications. Apart from heathers he is an acknowledged expert on Bamboos and Grasses.

We are indeed fortunate in having some-one of his qualifications and dedication as President of the Heather Society. We offer him our best wishes for success in the appointment.

Annual Conference - Trevelyan College, Durham, September 1989.

Allen Hall, Cheam, Surrey.

The Chairman, Maj.-Gen. P. G. Turpin, opened the Conference on the evening of Friday, 1st September, in the conference room of Trevelyan College, Durham. He welcomed 57 members, particularly those attending their first Conference, and those who had travelled a long way. These included Mrs. Eileen Petterssen from Norway, Mrs. Brita Johansson from Sweden, Mr. Bert Albronda from Holland, and Mr. David McLaughlin from Ireland. General Turpin continued that a feature of all our Conferences was the meeting of friends, and the conversations that took place between formal events.

Mr. J. C. Wright, Bursar of Trevelyan College, welcomed us to Durham. He said that the University of Durham had been founded in 1832, when the Bishop of Durham gave his castle to the new seat of learning. The Bishops Palatine of Durham had lost their princely status in that year, when the Palatinate of Durham had also become an ordinary County. Trevelyan College is one of a cluster of new colleges "on the hill", and it afforded us comfortable rooms and excellent conference facilities.

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Dr. Alan Pearson, lecturer in Botany at the University, gave a talk on the University Botanical Garden. The garden of 18 acres, on a SW slope, was established in 1972 for scientific purposes, but in recent years it has been further developed to provide amenities to the public. There is a nature trail through the gardens which is frequently used by local schools for example. The garden is planned to give an international theme, and contains many trees and a heather garden. Dr. Pearson said that there was a strong tendency for the botanical garden to encroach into the 250 acres of gardens around the colleges. His slides included views of the Senior Fellows' garden within the castle - a garden which has remained basically unaltered for hundreds of years.

Mr. Ian Webster, Head of Horticulture at Durham College of Agriculture and Horticulture, described the aims and facilities of his college. It occupies 25 acres and is concentrating very much on horticulture these days. They seek to put on courses which meet the needs of horticulturalists and the public at large. The college has a garden centre and makes its expertise available to the trade and to private gardeners. The College was much involved in the preparation of a "Durham Garden" for the national garden festival at Gateshead. They were also working with the British Heather Growers Association in the preparation of a heather garden for the Festival. It sounded interesting.

The second day of the Conference began with a lecture by Mr. Simon Mailer, the Arthur Bell Distiller's Scholar, who was undertaking research at Harlow Carr on the establishment of heathers on reclaimed colliery spoil tips. He explained that *Callunas* had been noticed growing wild among other flora on a disused spoil heap at Royston Colliery, Yorkshire. It had been decided to conduct some research to see if some of the native species of heather could

be established to provide environmentally attractive cover on other colliery tips which are generally difficult to plant because they are strongly acidic.

Three colliery spoil heaps were selected to provide material for the experiments, namely Lofthouse, Sharstone and Riddings collieries, all in Yorkshire. The first two have disused, well-weathered tips, but the last named has a tip which is still active. This proved important because material from the active tip had a pH of 9, thought to be because of solutions used in washing the coal. Material to a depth of 150 mm on the other tips had pHs of 4.4 and 3.05 respectively. The very low pH values are caused by chemical breakdown of iron pyrites (iron sulphide) which is contained to greater or lesser degrees in colliery spoil. Some spoil heaps which have a lot of pyrites have pHs down to 2, but none of these were selected for the experiments. The low pHs make it uneconomic to establish trees on spoil heaps - treatment with lime has only a temporary effect. Mr. Mailer reported that the colliery spoil breaks down into sands and clays as it weathers.

For the research, seeds and cuttings of *Calluna vulgaris* and *Erica cinerea* were taken from local moors. Three methods of replanting were tried - seeds, seedlings and cuttings.

Seeds were sown on to seed trays containing samples of the material from the three tips. Results differed according to the pretreatment of the seeds. Untreated seeds had not germinated within the period of the trials. Those first subjected to nine weeks at low temperatures (4 to 5°C) had a good rate of germination, irrespective of whether sown direct onto the spoil or on to a fine layer of peat. *Calluna vulgaris* seeds further treated with gibberellic acid (obtainable from Sigma Chemicals, Dorset) had an even higher rate of germination (95%), and indeed some improvement

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was noted in the germination of *E. cinerea* seeds after this treatment.

Cuttings were planted into pots filled with spoil material and the pots were placed on mist benches. Good strike rates were obtained.

Careful note was kept of the progress of the young plants. Those associated with weathered spoil grew very well, but those planted in the high pH unweathered material only rooted into top dressings of peat, where provided.

An outdoor experiment was conducted in which some plots of spoil were prepared, each about 150 mm deep and 500 mm square. These were planted with cuttings and seedlings. They were watered for a week or two at the beginning of the summer, but not thereafter. The cuttings did not survive in the hot weather, but some of the seedlings did. Once again the weathered spoil proved hospitable to the heathers, but none survived in the high pH spoil. Mr. Mailer thought that the unusually hot, dry summer probably gave unrepresentative results in this part of the work.

Exercising the stern discipline to which his office entitles him, the Chairman gathered members for the group photograph. Discipline soon lapsed, as usual on these occasions, when members broke ranks to take their own photographs. One wonders what they do with them afterwards!

After lunch, we visited the University botanical garden with Mr. Neil Yuill. Mr. Pearson had prepared us for much of what we were to see, but there were some surprises.

From the botanical gardens we went by coach to the Durham College of Agriculture and Horticulture. The for-

mal lawns and flower beds around the College were most attractive. There were several heather beds, and our appreciation was accompanied by clicking cameras and talk on such subjects as 'Alportii' and 'Ada S. Collings'. Heathers were on sale at the College garden centre at the special price of 30p each for our party. There was some enthusiastic buying.

That evening, before dinner, there was a whisky tasting, by the kindness of Arthur Bell Distillers. This was presided over by Mr. Norrie Robertson, Head Gardener of the Arthur Bell Distillers Heather Garden at Cherrybank, Perth. Norrie's cheerful company enlivened all the proceedings of the Conference, and it was a pleasure to learn from him in many informal chats about the collection of heathers being established at Cherrybank.

Mr. Stephen Anderton gave a lively talk after dinner; about the gardens at Belsay, Northumberland. The house at Belsay was designed and built by Sir Charles Monck in 1865. He used sandstone quarried from a hill within a few hundred yards of the house, and later used the quarry to create a remarkable garden. The quarry walls provide protection from the cold north east winds which blow in that part of the country, and plants as unusual in Northumberland as a palm grow there. Sir Charles was succeeded by his grandson, Sir Arthur Middleton, who lived at Belsay until 1931, continuing the work of his grandfather. There are many unique features about the house and gardens, now managed by English Heritage. Not least is the winter garden, protected from the wind by high trees, which still contains some fine heathers. Even in 1900, the garden was reported to contain some fine beds of *E. carnea* - and this before the Backhouse cultivars were available. The Middleton plantings therefore represent a formative stage in heather gardening.

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On Sunday, Maj.-Gen. Turpin chaired the Annual General Meeting. He reported that the Society continued to prosper in a quiet way. There were now 1120 members worldwide, but he would like to see more young people joining, and more people taking part in Group activities. He said that heather planting had continued at Wisley all summer, despite the dry weather.

The Chairman said that Mr. C. D. Brickell wished to retire after the long service of eleven years as our President. Tribute was paid to Mr. Brickell as one of the outstanding horticulturalists of our day. Mr. David McClintock was appointed as our new President in a unanimous vote. Mr. McClintock recalled that a former President, Sir John Charrington, had mentioned to him his intention to write to the RHS proposing that a Heather Society should be formed. He had thus been closely involved in the affairs of the Society since before its foundation.

In her report, the Secretary, Mrs. P. B. Lee, noted with regret the death of Mr. G. Osmond, a nurseryman who had made many important contributions to heather cultivation.

After the AGM we set off by coach for Belsay, but Dr. Roy Nichols, Chairman of the North East Group, had a surprise in store. Instead of taking the direct route, we went over the moors and made an unscheduled stop at "Rose Cottage", the home of David and Rita Plumbridge. "Rose Cottage" was built in 1851 as the village school, and has been extended and developed by David and Rita to form a charming cottage. They have also made a delightful heather garden in the rolling landscape of County Durham. David Small commented on an *E. lusitanica*, 'George Hunt' growing so far north.

On to Belsay - late! We had our picnic lunch on the

coach to save time. Belsay was beautiful beyond our expectations: the house elegant, unusual, aloof; and the gardens unique. It exceeded the description given by Stephen Anderton. Our new President and Bert Jones, egged on by others, caused some amusement when attempting to measure the bole of an old *E. arborea* 'Alpina', using neckties borrowed from some of our better-dressed members. (It was 1.6 m in circumference).

Then we went to Ogle to be greeted by Lt.-Col. David Roberts and his wife Mary at their charming home "Middleholding". "Middleholding" was developed from two cottages of the same name, built in 1750. The house is set off by a lovely heather garden and a fine lawn, which David said he had created simply by mowing the field from which his garden was cut. David and Mary treated us to tea, and the warm afternoon passed away too quickly.

We went back to Trevelyan College via Newcastle, which looks so different to those of us who knew it a quarter of a century ago. Back to dinner and the open forum - an acknowledged high point of any Heather Society Conference. The panel consisted of our President, the Chairman, and the Chairman of the North East Group, Dr. Roy Nichols. How to grow heathers through black polythene; the economic and garden relevance of micro propagation; whether the clone 'H. E. Beale' has passed its best; how to propagate 'Mr. Robert' and views on the best forms of *E. ciliaris* were among the topics discussed. One member asked about die-back on one of his cultivars and Norrie Robertson suggested female rabbits' urine as a cause. Several members had slides: previous Conferences, *E. manipuliflora* in a native habitat (highly alkaline) and the Northumberland hills.

But it had to end sometime. The Chairman warmly thanked Dorothy and Geoff Warner and their supporters in

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the North East Group for the splendid arrangements which had contributed so much to this highly successful Conference. Roy Nichols presented Dorothy with a bouquet to our applause.

Insects Associated With Heather

*Dr. N. R. Webb, Furzebrook Research Station,
Wareham, Dorset.*

INTRODUCTION

The heathlands of southern England have long been popular with entomologists. Heaths within easy reach of London, such as those in Surrey and north Hampshire, and even those further afield such as the New Forest and Dorset heaths, were popular with Victorian naturalists.

A few steps across a heath in summer when the heather is in bloom reveals a wealth of insect life. A wide variety of flying insects, including bees and hoverflies, will be seeking nectar from the flowering shrubs; dragonflies will be hawking over the pools, while the more delicate damselflies will be active around their edges. On the bare and grassy areas grasshoppers may be abundant and Graylings will fly from beneath your feet, whilst stretched over the heather plants are the webs of the Funnel-web Spider.

The diversity is deceptive - the hot sandy conditions to be found on heathlands are an important habitat for invertebrates and many only occur in such places. A much smaller fauna feeds on the dwarf shrubs themselves. Ling (*Calluna vulgaris*) has a complement of about 40 species, although on any one heath perhaps 25-30 of these species may be found (Webb 1986).

HEATHER FEEDING INSECTS

Beginning with the flower, there are three species of thrips (Thysanoptera), which occur in good numbers on heather. These insects feed on pollen and are important pollinators of heather (*Calluna* is usually wind pollinated). Up to six thrips live in each flower and when the females are mature they squeeze their way out, rubbing against the anthers. Pollen sticks to their bodies which the thrips carry to other flowers when they mate. The fertilized female thrips lay their eggs on the nectaries of the base of the flower and when these eggs hatch the young thrips feed on pollen within the flower (Hagerup 1950).

The bugs or Hemiptera are well represented on heather. About eight species feed on heather exclusively, while a further 14 are general herbivores which may be found on heather at various times. A further ten species frequently captured on heather are predatory (Table 1). The lygaeid bug *Scolopostethus decoratus* is very common both on the plants and on the litter surface. It probably feeds on heather seeds, while another common species *Orthotylus ericetorum* attacks the flowers and leaves.

The Froghopper *Ulopa reticulata* is very common on heather form which it sucks the plant juices. Jumping plant-lice or psyllids also suck the plant juices and are relatively abundant. Two species of *Strophingia* have been recorded from heather. *S. ericae* occurs commonly on *Calluna* almost everywhere, while *S. cinereae*, which occurs mainly in south-west Britain, is restricted to *Erica cinerea*. The psyllids attach themselves to their host plant at the axils of the leaves. In northern and upland Britain *S. ericae* requires two years to complete its life cycle, while the lowland form of this species completes its life cycle in a single year (Parkinson & Whittaker 1975).

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In contrast to the plant bugs, which suck sap, the larvae of the Lepidoptera chew the leaves and sometimes the flowers of the heather plants. Some of the most attractive and best known heathland insects belong to the order Lepidoptera. The spectacular Emperor moth (*Saturnia pavonia*), which is a representative of the silk moth family, occurs on heaths and moors throughout Britain. The males of this species are active in the bright sunshine of spring days, when they can be seen flying rapidly over the heather. The females, which are only night-active, attract the males by scent. The eggs are laid on the heather plants and for their early instars the small hairy caterpillars are gregarious. After the third instar they become solitary; at this time they develop into the striking green caterpillars with black bands. In the autumn a pear-shaped silken cocoon is spun low down amongst the branches of the heather in which the pupa spends the winter.

Another large moth with a different life cycle is the Fox moth (*Macrothylacia rubi*). The adults of this species are also active in the spring and early summer. The hairy caterpillars feed until the autumn when they hibernate at the bases of the plants. Frequently they can be seen basking in the autumn sunshine and again on warm spring days when they re-commence feeding before pupating.

In total there are about 17 species of moths that feed on heather (Table 2). These include two very abundant species - the True-lovers Knot (*Lycophotia porphyrea*) and Beautiful Yellow Underwing (*Anarta myrtilli*). Both species have well camouflaged caterpillars which feed mainly at night. The caterpillars of the pugs (*Eupithecia* spp.) feed on the flowers of the heather plants. Among the other moths which feed on heather plants are Neglected Rustic (*Xestia castanea*), Heath Rustic (*X. agathina*) and the Horse Chestnut (*Pachycnemia hippocastanaria*).

Of the butterflies which can be found on heathland only the Silver-studded blue (*Plebejus argus*) feeds on ericaceous species, and this is only secondary, since its main food-plants are members of the Leguminosae. The caterpillars of this butterfly are frequently tended by ants, as are the pupae which are often to be found in the nests of the black ants *Lasius niger* or *L. alienus*.

Perhaps the most widely known insect associated with heather is the Heather beetle (*Lochmaea suturalis*). In some areas large outbreaks of this beetle occur, defoliating the plants. The damage caused to the plants causes a characteristic reddening ("frosted heather") of the foliage. The effects of the beetle can be considerable since both the adult beetles as well as the larvae eat the foliage of *Calluna*.

The adult beetles are mature in the spring (March/April) when they swarm and mate. The eggs are laid in the heather plants or the surface of the leaf litter beneath the plants. The three larval stages feed on the foliage of *Calluna* from June until August, when they pupate in the litter. The immature beetles emerge in September and continue feeding until they hibernate in the litter (Cameron, McHardy & Bennett 1944).

Heather beetles can cause widespread defoliation of heather, often over considerable areas. Outbreaks have been reported since the middle of the last century from many European heathlands. On the moors of the north of England outbreaks are regular and may occur sufficiently frequently for the beetle to be considered a pest. On the heath of southern England the beetles can be found in small numbers all the time and outbreaks are less frequent, perhaps only attaining major importance every ten years. The last big outbreak in southern England was in 1979/80. The population dynamics of the Heather beetle are poorly understood and it is not known why there are outbreaks

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from time to time. Two predators, the pentatomid bug *Rhacognathus punctatus* and the ladybird *Coccinella hieroglyphica*, have been suggested as population regulators but these are uncommon on most heathlands. In southern England the eulophid wasp *Aescodes mento* can attain sufficient densities (up to 52% of the beetle larvae parasitized) to act as a regulator (Golightly 1962; Waloff 1987).

In The Netherlands in recent years defoliation and death over wide areas of heather have become more frequent and have led to the replacement of dwarf shrub vegetation by grassland dominated by Wavy Hair Grass (*Deschampsia flexuosa*). These outbreaks have been attributed to increased deposition of nitrogen from the atmosphere and ammonia from intensive farming. This has two effects - it improves the quality of the heather thereby increasing the growth rate, fecundity and survival of the beetles. This leads to defoliation and death of the heather which is replaced by grass dominated communities since the nutrient status of the soils has been increased (Brunsting 1982).

HEATHLAND INSECTS

Much of the richness of insects on heathlands can be attributed to the hot, dry sandy conditions which prevail. This provides an important habitat for many species. Typical of this habitat is the Grayling (*Hipparchia semele*), a grass feeding butterfly which is still common on many of the southern heaths but which has declined markedly elsewhere. This butterfly was found on hot, dry and stony chalk downs as well as sandy heaths but is now only common on the dry, sandy heaths. The butterfly lays its eggs singly on the leaves of fine-leaved grasses. The larva feeds on the grasses before hibernating, resumes feeding in the spring and pupates in the soil in early June. Although this

butterfly is considered to be a typical heathland species, it is, in fact, dependent on the presence of hot, dry, grassy areas and not the dwarf shrubs themselves.

Bare sandy patches are the habitat for Tiger beetles - mainly the Green Tiger beetle (*Cicindela campestris*) which run or fly over the hot ground. The beetle larvae live in burrows and capture insects running over the burrow entrance. Bare sand is also used by species of fossorial wasps for their burrows. Species of *Ammophila* provision their burrows with lepidopterous caterpillars which they hunt and drag paralyzed from the nearby vegetation. The eggs are laid in the burrows and the caterpillars supply food to the developing wasp larva.

Ants are another common group on heathlands. Where there are plantations nearby Wood ants (*Formica rufa*) will be found foraging over the heath. The common ants on heathland are the two black ants -: *Lasius niger* and *L. alienus*. The Turf ant (*Tetramorium caespitum*) is also common on some southern heaths. The Turf ant lives in the best dry areas and the remaining parts of the dry heath are occupied by *L. alienus*. As conditions become damper-indicated by an increasing proportion of Cross-leaved heath in the vegetation - *L. alienus* is replaced by *L. niger*. The large and active black species *F. fusca* is also common on heathland. A number of species of Red ant (*Myrmica* spp.) can be found. Most ants depend on warm, open conditions but their preferences vary.

Following a heathland fire there is a very distinct succession (as there is for many invertebrates) from species which like the very hot, open conditions of young heather to those who can tolerate the cooler, moister conditions in mature heather, when the plant canopy shades the soil surface. Spiders (Merrett 1976) also show a well marked succession after a fire as the heathland plants grow.

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The changes in the structure of the vegetation as heathland develops is important in determining the composition of the fauna. Heather passes through four well marked phases - pioneer, building, mature and degenerate (Watt 1955). These changes can occur on the scale of the individual plant or, as is often the case following a fire, throughout a whole stand. In the pioneer phase there is much open ground between the plants, conditions are dry with extremes of temperature. As the vegetation canopy develops conditions become moister and more equitable and the greatest richness of invertebrates is to be found in the late mature phase, especially where a rich moss layer has developed. In this phase heather plants will be some 30 years old. In the degenerate phase conditions again become drier with greater extremes of temperature as the plants die from the centres and the soil and litter surface becomes exposed. The micro-climate changes in a heathland have been studied by Barclay-Estrup (1971) and general accounts of the changes are provided by Gimingham (1972), Webb (1986) and Webb (1989).

The blooms of the heather plants attract large numbers of hoverflies (Syrphidae) and, although there are many species some of which are common and widespread, there are about 8 species which are typically found on heathland.

The bare heath areas are also the haunts of grasshoppers and crickets, the commonest of which is the Bog-bush cricket which, despite its name, is found widely over heathlands and not only in the boggy areas. This cricket is confined to heathland and, although frequent, is susceptible to the loss of its habitat. On a few of the quaking bogs of the southern heaths the spectacular Large Marsh grasshopper (*Stethophyma grossum*) occurs. This is one of the rarest of British grasshoppers. Likewise the Heath grasshopper (*Chorthippus vagans*) is a very rare species confined to the open grassy areas on a few southern heaths.

Another rare insect to be seen on the open areas between July and September is the Robberfly *Asilus crabroniformis*. This large fly sits waiting on stones or humps in the ground for other insects - frequently grasshoppers on which it pounces with great speed.

One of the best known groups of insect associated with the southern heaths is the Dragon - and Damselflies (Odonata). A high proportion of the British species occur in southern Britain and many of these are associated with the acidic waters to be found on heathland. Most heathland pools contain a good and representative fauna. But equally important are the small pools and runnels on the *Sphagnum* bogs. These provide habitats for some of the rarest species such as the Small Red Damselfly (*Ceriagrion tenellum*), the Scarce Ischnura (*Ischnura pumilio*) and the Southern Damselfly (*Coenagrion mercuriale*).

Many of the southern heathlands now exist as small fragments surrounded by other types of vegetation. Frequently the insects from the surroundings 'trespass' onto the heathland and a variety of effects can be distinguished (Webb & Hopkins 1984; Hopkins & Webb 1984; Webb, Clark & Nicholas 1984). This effect has important implications for the conservation management of heathlands and these aspects have been discussed by Webb (1989a).

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Table 1. Plant bugs associated with heather and heathland

<i>Rhacognathus punctatus</i>	C
<i>Alydus calcaratus</i>	P
<i>Rhopalus parumpunctatus</i>	P
<i>R. rufus</i>	P
<i>Nysius helveticus</i>	M
<i>Ortholomus punctipennis</i>	P
<i>Kleidocerys resedae</i>	P
<i>Kleidocerys truncatulus</i>	M
<i>Magalonotus dilatatus</i>	P
<i>Rhyparochromus pini</i>	M
<i>Trapezonotus arenarius</i>	P
<i>Macrodema micropterum</i>	M
<i>Stygnocoris pedestris</i>	P
<i>Drymus sylvaticus</i>	P
<i>Scolopostethus decoratus</i>	M
<i>Eremocoris plebejus</i>	P
<i>Berytinus crassipes</i>	P
<i>Coranus subapterus</i>	C
<i>Nabis ferus</i>	C
<i>Nabis ericetorum</i>	C
<i>Stalia boops</i>	C
<i>Orius niger</i>	C
<i>Deraeocoris scutellaris</i>	C
<i>Systellonotus triguttatus</i>	P
<i>Globiceps cruciatus</i>	C
<i>Orthotylus ericetorum</i>	M
<i>Mymecoris gracilis</i>	C
<i>Lygus pratensis</i>	M
<i>Phytochoris varipes</i>	P
<i>P. insignis</i>	P
<i>Micracanthia marginalis</i>	C

C Carnivorous

M Monophagous, eating only *Calluna* and possibly other species of *Erica*

P Polyphagous, eating other heathland plants besides *Calluna*.

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Table 2. The larger moths associated with heathland.

Pale Eggar	<i>Trichiura ciataegi</i>
Northern Eggar*	<i>Lasiocampa quercus callunae</i>
Fox Moth	<i>Macrothylacia rubi</i>
Emperor	<i>Saturnia pavonia</i>
Ling Pug*	<i>Eupithecia goossensiata</i>
Narrow-winged Pug*	<i>E nanata</i>
Double-striped Pug	<i>Gymnoscelis rufifasciata</i>
Horse Chestnut*	<i>Paschycnemia hippocastanaria</i>
Bordered Grey	<i>Selidosema brunnearia</i>
Ringed Carpet	<i>Cleora cinctaria</i>
Common Heath	<i>Ematurga atomaria</i>
Dark Tussock	<i>Dicallomera fascelina</i>
Four-dotted Footman	<i>Cybosia mesomella</i>
Scarce Footman	<i>Eilema complana</i>
Speckled Footman	<i>Coscinia cribraria</i>
Wood Tiger	<i>Parasemia plantaginis</i>
Clouded Bugg	<i>Diacrisia sannio</i>
Lesser Yellow Underwing	<i>Noctua comes</i>
Autumnal Rustic	<i>Paradiarsia glareosa</i>
True Lover's Knot*	<i>Lycophotia porphyrea</i>
Ingrailed Clay	<i>Diarsia mendica</i>
Small Square-spot	<i>D rubi</i>
Neglected Rustic*	<i>Xestia castanea</i>
Heath Rustic*	<i>X agathina</i>
Beautiful Yellow Underwing	<i>Anarta myrtilli</i>
Black Rustic	<i>Aporophyla nigra</i>
Dark Brocade	<i>Blepharita adusta</i>
Yellow-line Quaker	<i>Agrochola macilenta</i>
Flounced Chestnut	<i>A helvola</i>

* = Species which feed exclusively on *Calluna* and possibly other *Erica* spp.

The Heather Trials Plot at Harlow Carr - 1971 to 1990

Albert Julian, Whaley Bridge, Derbyshire

The Heather Society's trials of 303 cultivars of hardy heather species were conducted on a half-acre plot in the Northern Horticultural Society's Harlow Carr Gardens nursery in Harrogate, during the period 1971 - 1975. Plants of a further 92 cultivars were added in 1975 and 1976. Details of height, spread, flower colour, flowering season, foliage and habit were recorded regularly for five years by a team of nine dedicated volunteers, all members of the Heather Society, and the heather group of the N.H.S. The results were published in *Heather Trials 1971 - 75*, and the supplement, *Heather Trials 1976 - 81*.

The recording team was assisted in 1975 by a number of heather group members who undertook the daunting task of clearing the weeds which were becoming dominant. After 1975, three volunteers continued with the annual trimming of the plants and keeping the plot weed free, but they were unable to cope satisfactorily with the large weed population which seemed to spring up over night on the areas that had been cleared. To help solve the problem less labour intensive methods of weed control were tried experimentally, i.e. black polythene "mulches" and a residual selective herbicide Casaron G applied to two adjacent short rows of plants. Both methods were successful in suppressing practically all weeds, but as Casaron was easier to apply, and cheaper initially, it was chosen to treat the whole plot. It has been in regular use since, one application annually being sufficient to prevent the appearance of weeds in the growing season.

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In 1980 the responsibility for maintaining the plot rested on the one remaining member of the maintenance team, and as it became impossible to continue with the trimming and pruning, the plants were allowed to spread and merge one with another, albeit weed free. Some plants may have been adversely affected after the occasional hand weeding sessions, when well established, closely growing grasses were pulled out with soil attached to them, thus tending to reduce the covering of their surface roots. The repeated application of Casaron over the years does not appear to have had an adverse effect on the plants despite its toxicity to weeds.

Today, after 18 years of sunshine, drought, frost and snow, many plants look surprisingly healthy for their age. The winter-flowering cultivars are magnificent, and most of the *Erica vagans* plants have made a tremendous amount of growth, in many instances reaching 4ft (1.25m) in height and spread. There are gaps among the *Callunas* where plants have died, and appreciably more in the *E. cinerea* groupings. With the exception of *Calluna vulgaris*, the summer-flowering species regenerated after the severe winters when many branches of the plants were killed. This was noticed in particular after the exceptional 1978/9 winter. The tree heaths and some *Daboecia* plants were cut to the ground but produced new basal shoots and regained their normal shape and height after a few years.

The 1975/6 plantings were retarded by the drought of 1976. A few of these plants were "mulched" with black polythene sheeting, as mentioned earlier, which reduced evaporation from the soil surface. They made much more growth than the others, some of which did not survive.

The plants have been a valuable source of authenticated propagation material for the Wisley National Heather Reference Collection, the Windsor Great Park

Collection, the National Collections of *Calluna vulgaris*, *E. carnea* and *E. x darleyensis* at Harlow Carr and, recently, for the Bell's collection at Perth.

The following is a brief report on the state of the surviving plants.

Calluna vulgaris

Many dwarf cultivars have succumbed to drought and exposure over the years, and the few of the 1971 plantings that have survived are stunted with large dead areas; 'Minima, Smith's Variety' is in fair condition and is the one exception. The 1975/6 plantings have fared better, and the plants of 'Calf of Man', the St Kilda named clones, and 'Prostrata Flagelliformis' are all well-formed and healthy.

The majority of the medium height and tall varieties still exist, but in general are gaunt and misshapen, probably the result of not being trimmed in recent years. Every year the double-flowered cultivars, 'H.E.Beale', 'Peter Sparkes', 'Elsie Purnell' and 'Glencoe' produce impressive amounts of bloom; 1989 was no exception. 'Sunset' and 'Long White' are superb plants, and 'Beoley Crimson' surprisingly healthy growing in the shade of a large beech tree on the east side of the plot. Plants in fair condition are: 'Alportii', 'E. Hoare', 'Beoley Gold', 'Golden Feather', 'Spring Torch' and 'Spring Glow'. One remaining stunted plant of 'Radnor' produced a surprisingly dense mass of its double flowers on the small area of live stems. It is evident that dwarf cultivars are less robust than the taller varieties, and that 'H.E.Beale' and its vigorous and hardy sports 'Elsie Purnell' and 'Peter Sparkes' are likely to be healthy and long-lived in exposed gardens in the north.

Cultivars that have not survived the post trials period are 'Johnson's Variety', 'Mrs Pat', 'Aurea', 'Coccinea', 'J. H.

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Hamilton', 'David Eason', 'Ruby Slinger', 'Silver King' and 'Firebreak'.

Daboecia cantabrica and *D. x scotica*

The *Daboecia* cultivars lost practically all their top growth in 1978/79. They made a remarkable recovery during the following summer, producing masses of new shoots, and today none show signs of noticeable deterioration, with the exception of the weakly 'Praegerae' plants.

Erica carnea and *E. x darleyensis*

The winter-flowering cultivars of *E. carnea* and *E. x darleyensis* have flourished and expanded through the years. Despite the splitting of stems in 1978/79, no bare patches have appeared. Many plants have spread, forming mats 5ft (1.5m) wide and probably they would have exceeded this but for the regular applications of Casaron on the surrounding soil which would tend to inhibit extensions of the root system. The coloured foliage varieties 'Ann Sparkes', 'Aurea' and 'Foxhollow' have progressed much more slowly and have been partially overgrown by more vigorous neighbours.

Erica cinerea

The surviving *E. cinerea* plants have continued to produce spectacular areas of strong colour in the last few years, although many of the plants are mis-shapen with much dead wood. Few could be considered to be satisfactory garden specimens; however, 'Atrorubens', 'Cindy', 'G. Osmond', 'Hookstone White', 'Josephine Ross', 'Katinka', 'Knaphill Pink', 'P. S. Patrick', 'Ruby' and 'Victoria' look fairly healthy, despite the presence of many dead stems and branches. 'C. G. Best', which is a large

robust plant, and 'Golden Hue' also show few signs of age. Most of the plants were drastically cut back by the repeated frosts of 1978/79, but unlike those of *Calluna vulgaris* which very seldom regenerate, the *E. cinereas* produced considerable new growth the following summer.

Erica ciliaris

The 1978/9 winter was disastrous for the *E. ciliaria* cultivars, but surprisingly most have survived, regenerating prolifically. Several plants are still in first class condition; they are 'Maweana', 'Alba Globosa', 'David McClintock' and 'Aurea', although, the last named has large areas of reverted foliage.

Erica erigena

After each spell of severe winter weather, most of the *E. erigena* cultivars suffered damage, sometimes large sections of plants dying. The dead areas usually regenerated and now, after two mild winters many plants have assumed a fairly well balanced appearance and give superb displays of bloom in their season. 'Alba Compacta', 'Rubra', 'Irish Dusk', 'Rosea' and 'Glaucia' are in good condition and 'Superba' is truly superb. 'Hibernica' and 'Brightness' did not recover after the 1978/9 winter.

Erica mackaiana

'Plena' still bears its double flowers in abundance despite winter set backs.

Erica tetralix

Cultivars have not displayed the same vigour as those of the other summer flowering species, but most have survived and continue to flower prolifically. The most prominent

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are: 'Ken Underwood', 'Con Underwood', 'Mary Grace', 'Silver Bells' and 'Foxhome'. However, 'Ruby's Variety' is outstanding, giving a long succession of brilliant flowers.

Erica umbellata

As expected, this species was not sufficiently hardy to withstand northern conditions.

Erica vagans

The *E. vagans* cultivars have proved to be among the hardiest and best preserved at Harlow Carr. Apart from slight setbacks in 1978/9 they were not noticeably retarded by subsequent winters and are now in much better health than the other summer flowering species. In general they are very vigorous and some are quite enormous: 'Grandiflora' is 5ft (1.5m) high and has a similar spread. 'Lyonesse', 'Birch Glow', 'Cream', 'Diana Hornibrook', 'French White' and 'Lilacina' are only slightly less vigorous and flower prolifically each summer. 'Valerie Proudley' just survives: the plants were drastically set back in the early 1980's when on several occasions they were stripped for propagation material. 'Mrs. D. F. Maxwell' does not appear in the trials; it was thought to be true to name but was not accepted by the name verification panel.

Summer Flowering Hybrids

In general the plants of the summer hybrids have proved to be very hardy and came through the severest winters almost unscathed and still are healthy and robust, showing few signs of age.

Erica x stuartii

'Stuartii' has degenerated during the last few years but

still gives a good show of flowers. 'Irish Lemon' is a poor specimen. It did not recover from the drought of 1976.

Erica x watsonii

Plants of 'Dawn', 'F. White', 'Gwen' and 'Rachel' show no signs of deterioration and continue to flower well.

Erica x williamsii

The plants of 'Gwavas' are in first class condition and continue to have a long flowering period.

Tree Heaths

All the tree heaths were cut to the ground in the 1978/9 winter and it was thought that we have lost them all. They developed new basal shoots in the summer and made considerable growth. *E. x veitchii* 'Gold Tips' and *E. arborea* 'Alpina' have now reached 7ft (2.25m) and are still growing. *E. australis* 'Riverslea' is barely 4ft (1.25m) high, but flowers profusely. Each winter *E. lusitanica* is cut back to the base, and then throws up new stems which flower. It is deteriorating and this year has only a few stems, which were in bloom in January. The *E. terminalis* plants survive, but lack vigour.

Those of us who have been associated with the trials plot during the last 20 years or so will be saddened to learn that the plants are destined to disappear, probably this year. The site is to be used for educational purposes. However, there is consolation in the recently created National Heather Collections in the Harlow Carr Gardens; *Calluna vulgaris* in South Field and *Erica carnea* and *E. x darleyensis* in the main trials area.

("the one remaining member of the maintenance team" mentioned on the first page of this article was, in fact, the author. Ed.)

The National Heather Reference Collection, Wisley.

Maj.-Gen. P. G. Turpin, West Clandon, Surrey.

When the Heather Trials at Harlow Carr had been completed, the Council of the Heather Society was anxious that the efforts which had been made to collect together so many cultivars should not be wasted, and started searching for a permanent home for the collection. At about the same time the Director of the R.H.S. garden at Wisley, Chris Brickell, was thinking of developing Howard's Field, an area at the extreme north of the gardens, between the Pinetum and the Director's house, into a heather garden.

From these thoughts was born the idea of creating a National Heather Collection at Wisley.

On the 24th April 1979 a joint Wisley/Heather Society meeting was held to examine the feasibility of the project. The Chairman was Mr. Brickell, with two members of his staff. The Heather Society was represented by the Chairman, Major General Turpin, with Mr. David McClintock and Mr. Albert Julian.

It was decided straight away that a National Reference Collection should be established in the area of Howard's Field, and Mr. Brickell agreed to have the initial arrangements put in hand to prepare the site and to install an irrigation system.

The Heather Society agreed to provide authentic cutting material from the stocks at Harlow Carr of all the cultivars, which were not already available at Wisley. Mr Julian agreed to undertake this commitment. It was thought that it would be at least two or three years before the area would be ready for planting, by which time the cuttings would have

developed sufficiently for setting out in the new beds. In all, cuttings of 258 different cultivars were provided from Harlow Carr between 1979 and the summer of 1981. It was agreed that about 20 or 25 specimens of each cultivar should be planted and that an ornamental design should be planned rather than a regimented layout.

As it happened, there were a number of factors which delayed the preparation of Howard's Field, such as shortage of ground staff, delays in the provision of irrigation equipment and competition from other (urgent) projects which were being carried out at Wisley. It was more than five years after the initial meeting before the irrigation system was fully installed. Meanwhile the cutting from Harlow Carr had outgrown their containers and had to be planted out in nursery beds in the propagating area. It was agreed that some of these would have to be re-propagated, and, if necessary, losses would be replaced from Harlow Carr.

In the event, planting did not begin until the autumn of 1988, the violent storm of October 1987 having seriously disrupted plans for starting a year earlier. In the spring and summer of 1989 great strides were made, and, thanks to the efficiency of the irrigation system, planting continued throughout the summer months, without any significant losses, in spite of the hot dry weather.

During the whole of this period there were a number of changes in the staff at Wisley. In July 1987 a new Director, Philip McMillan Browse, was appointed. He has been an enthusiastic supporter of the project. John Main, a great friend of the Heather Society, came and went as Curator, and after eight years was succeeded by Jim Gardiner in March 1988. In the autumn of 1987 John Battye joined the staff at Wisley and was appointed Superintendent of the Floral, Rock Garden and Battleston Hill Departments.

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Since then he has been directly concerned with the Heather Reference Collection.

Propagation of the heathers has been in the capable hands of Mr. Honour and the actual planting of the beds has been the responsibility of Mr. Andy Collins.

Seven large beds have so far been created in Howards Field, replacing some of the trees and shrubs which were cleared from the area. One old specimen tree of *Erica arborea* 'Alpina' was the only existing heather on the site. There is room for expansion when the number of cultivars become too many to be accommodated in the existing beds.

The beds have had to be enclosed in wire mesh as a protection against rabbits, but it is hoped that this can be removed when the plants mature sufficiently.

The cultivars are all boldly labelled and paths have been made through the beds so that the different varieties can, be studied and compared. It has not been possible, in all cases, to plant similar cultivars side by side for comparison, but it is planned to issue a printed key, so that visitors can find any particular cultivar without difficulty. By the end of 1989 530 different cultivars had been planted. By the time that the Collection is complete, this number is likely to be more than doubled.

Since the great storm of the 16th October 1987 the Pinetum and Howard's Field have been closed to the public. The Reference Collection was opened to members of the public at Easter 1990, so visitors will be able to see what progress has been made.

Bell's Scottish National Heather Collection

Norrie Robertson, Perth

The Bell's Scottish National Heather Collection is housed in the gardens of Arthur Bell Distillers' Head Office at Cherrybank, Perth. The garden extends to 18 acres.

A National Heather Collection there is destined to become an important part of Scotland's heritage.

The link between Scotland's most famous flower and the country's most famous whisky is a natural one and the collection may eventually become one of the largest and most comprehensive of its kind in the world.

It is also important however to appreciate that it forms an invaluable conservation and research resource. The role of National Collections in the United Kingdom is to conserve, investigate and display the rich diversity of our gardening heritage.

Bell's Scottish National Heather Collection is part of this nationally important programme and is maintained in co-operation with the National Council for the Conservation of Plants and Gardens, under the guidance of the Northern Horticultural Society.

The idea of the Collection originated through discussion with Mr. Philip Swindells, then Curator of Harlow Carr Gardens, Harrogate, and initially was for a heather garden only, but this was expanded to become the Bell's Scottish National Heather Collection.

From this development emerged the Bell's National

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Heather Scholarship for mature students. These students would study heather and would complete their Scholarship at the Harlow Carr Gardens. The first student to receive the Scholarship was Mr. Simon Mailer, who researched into the possibility of growing heathers on colliery spoil tips.

Students and researchers who wish to study plants from the collection should contact the Northern Horticultural Society at :-

Harlow Carr Gardens
Crag Lane
Harrogate
North Yorkshire HG3 1QB
Telephone: 0423 65418

The first phase of planting took place in March 1988 and involved approximately 100 heather varieties (some 6,000 plants) ranging from 24 to 127 plants of each cultivar. The heathers were planted to a layout designed by Miss Hazel Huddleston, Landscape Design Architect of Northumbrian Nursery, Castle Garden, and in conjunction with information supplied by Mr. Albert Julian of the Heather Society.

Phase 2 commenced in March 1989 with the planting of approximately 150 varieties (7,000 plants) and Phase 3 commenced in March 1990 which entailed planting approximately 400 varieties (17,000 plants). Phases 4 and 5 will include some obscurer varieties which will have to be propagated and grown by specialist nurseries. Mr. David Small and Mr. Bert Jones are heavily involved in this phase and their assistance is invaluable.

A staff of five gardeners maintain the Gardens which are open to the public from April to October on Tuesdays, Thursdays, and weekends. Special arrangements for large groups to visit can be made by telephoning 0738 21111, extension 253.

The Prince of Wales made a private visit to the Gardens on 4th July 1989 to view the Collection and officially open the Gardens.

The Gardens are situated on the western outskirts of Perth on the A93. When travelling from Edinburgh turn off at Junction 11 (M90), and Glasgow A9 to Junction 11 and follow the A93. The Gardens are approximately one mile on the right.

Heather Gardens. No. 12. ICI Agrochemicals, Fernhurst, Haslemere, Surrey.

Maj.-Gen. P. G. Turpin, West Clandon, Surrey.

If you drive from Haslemere along the Midhurst Road (A286) for five miles you come to Fernhurst and, after a mile on the right is the Kings Arms. Almost opposite there is a road, signposted to the village of Henley. Fifty yards along this road is the entrance to the Agrochemicals business of ICI.

The Establishment was originally based at Verdley Place, a hundred-year old mansion set above the valley, but in 1962 the site was extended by the acquisition of an old Army camp and now occupies 250 acres of farmland and offices.

A feature of the garden at Verdley had been a large bank planted with heathers, which still gives a colourful display in August and September, mainly of *Calluna*, *Daboecia* and *Erica vagans* with patches of *E. x watsonii* and some tree heaths, most of which must be at least 50 years old.

Compared with this garden, the new site presented a

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rather severe and bleak appearance and it was decided to break up the hard lines of the new buildings by a scheme of landscaping and planting shrubs and other plants on a large scale.

Many hundreds of heathers have been planted and as the visitor approaches the main reception building he passes a pond with water-lilies half surrounded by carpets of heather - a mixture of summer and winter flowering species. All around the car park areas the hard lines are broken up and softened by plantings of shrubs and heathers and even the main building itself is decorated with conifers planted on balconies at several levels.

In September most of the colour is provided by Callunas, such as 'Peter Sparkes', 'Elsie Purnell', 'J. H. Hamilton', 'Schurig's Sensation', 'Else Frye' and 'Kinlochruel' among the doubles, and 'Darkness', 'Anthony Davis', 'Barnett Anley' and 'Caerketton White' with single flowers. Coloured foliage is well represented by 'Multi-color', 'Sunset', 'Firefly', 'Bonfire Brilliance', 'Gold Haze', 'Silver Knight' and 'Sir John Charrington'.

There is a good selection of *E. carnea* cultivars which provide flowers during the winter months, including 'Ann Sparkes', 'Pink Spangles', 'Myretoun Ruby', 'Pirbright Rose', 'Springwood Pink' and 'Springwood White'. There are several varieties of *E. x darleyensis*, and *E. erigena* 'Superba' and *E. x veitchii* 'Exeter' show up among the taller shrubs.

Most of the heathers were originally supplied by Peter Davis of Timber Tops, Haslemere. In all 56 different varieties were planted.

In addition there are four interior courtyards, all planted

with colourful shrubs, which provide office workers with a restful and soothing outlook from their windows. The soil in these gardens is mostly clay. With careful cultivation and the generous use of "Forest Bark" conditions suitable for the healthy growth of heathers have been created.

Management of all these plantings is in the capable hands of Mr. Simon Catford, the Estate and Farm Manager who recently succeeded Mr. A. Ian Newman, and his head gardener, Mr. David Gisborne.

The Establishment is not open to the public, but members wishing to visit this remarkable and unusual garden should make an appointment with Simon Catford, ICI Agrochemicals, Fernhurst, Haslemere, Surrey GU27 3JE. (Telephone (0428) 55214).

Book Review

Heathers and Heaths

Alan Toogood

48pp

55 coloured illustrations.

Collins Aura Garden Handbooks 1989.

ISBN 0-00-412-442-1.

£2.25

This useful little booklet covers much the same ground as the Wisley handbook "Heaths and Heathers", with sections on Soils and Planting, Aftercare, Colour all the Year, Plant Associations, Container Growing and Heathers in Season. The author gives more space to well-established cultivars than to recent introductions, of which

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only some half-dozen are mentioned, among them 'My Dream' and 'Annemarie' (not 'Anne Marie').

Beginners will find the recommendations for plant spacing, which are given with the descriptions of different varieties, most helpful.

The coloured photographs have been carefully chosen and their reproduction is of a high standard.

There are a few mistakes in the text. *E. umbellata* is wrongly called "Portuguese Heath" - a name which belongs to *E. lusitanica*. 'Hookstone White' appears as "Hockstone White". 'Jack H. Brummage', a golden foliage cultivar of *E. x darleyensis*, is wrongly described on p. 30, and the illustration on p. 39, with the caption "*E. cinerea* 'Windlebrook'" is of a foliage plant of *Calluna vulgaris*. The author does not differentiate between *Daboecia cantabrica* and *Daboecia x scotia*. But these faults can be easily corrected in future editions and hardly detract from a production which is otherwise accurate and correct. At £2.25 this handbook is good value and can be recommended to our members.

P.G.T.

Amazing Isn't It!

H. M. J. Blum, Steenwijkerwold, Holland

(The following article appeared first in *Ericultura*, No. 71, December 1988, pp 7-8 & 10, and is reprinted here by kind permission of Nederlandse Heidervereniging 'Ericultura'. I am indebted to Mr. J. R. Tucker of Worthing for providing the translation. Ed.)

Driving about 20 km north-east of my home town at the end of August last, I passed a heather garden which made

me stop in my tracks, and turn the car round at the next lay-by. I thought of all possible members in this area, but I knew nothing about this one. So I went over to have a chat.

For a private garden it was large - I would think about 1500 sq. metres, well laid out and in an open situation. The house stood about 40m from the road - and next to it was the owner. I walked towards him and noted the excellent condition and evenness of his plants, which were just touching one another. I reckoned they were two to three years old - but the size of the conifers showed the garden to be much older.

After introducing myself, my first question was who had laid the garden out, and I complimented him on the high quality of his plants. I then asked him if he knew of our organisation.

"Oh yes" he said. "They often come here trying to get me to join, but I am not interested". He was very emphatic, so I dropped the subject. Freedom of choice makes for a happy life. I then asked how old the garden was, but he did not know.

Seeing the size of the clumps, and in view of the recent extremely severe winters we have experienced, I asked him if he had had any damage. "No nothing" answered this rather unforthcoming man. "Amazing isn't it?". He added with some pride "It is because of the beech leaves". I asked what he meant. "After pruning I mulch with half-rotted beech leaves. It makes better humus than peat". To demonstrate his meaning he scratched the surface with his foot, showing a good sandy loam, mixed with well rotted leaves. "For many years I have been getting them from a ditch over there". (His garden was 150m from a beechwood) "I spread them after pruning".

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“Before I lived here” he continued “I was living in heather country, so I know what is best for them. This is better than peaty ground, which is always too wet or too dry and is too poor. Beech leaves are just right”. All this was said in his decisive way.

Of course I had heard and read about leaf-mould, and had used it myself, mainly as surplus to potting requirements, and to make room for the next crop of fallen leaves. The often too well rotted leaf-mould was put in the heather garden on the principle of what does not help will not hinder. But here it was done yearly, and only beech.

As though he had read my thoughts, he remarked “Remember, only beech, and you won’t get any damage. It is much better than peat”.

What struck me most was the size and vigour of the plants, like two to three year old ones. “Prune every year” he said. Automatically I said “To keep them young”. But I was not altogether satisfied with his explanation of his pruning so I drew my hand through the foliage. There was no old wood at all. I must have given him a disbelieving look as I searched for the old wood on one plant. “How do you prune?” I asked tactfully to hide my scepticism.

“Amazing isn’t it?” He replied, “I cut them back right to the ground. Everyone thinks I am mad, and after pruning it certainly looks most odd. It must be done every year right from the beginning - plus beech leaves”.

There must still have been some doubt in my face, so he disappeared for a moment and came back with a spade and dug out a plant. The roots showed it to be much older than you would think looking at the top of the plant, which appeared to be a vigorous two to three year old, with a good clump of soil mixed with well rotted leaf mould. Again he

said "Amazing isn't it?"

Walking into the garden, we came upon a mound of new planting on the edge of a hollow intended for a pond. Here you could see the type of soil, 15 inches of sandy soil overlaying nine inches of yellow sand, then clay. The mound was planted with his own propagated plants - transplanted seedlings of white and various coloured *Callunas* set at random (not being definite varieties). There were one or two corners planted with plants of indeterminate colour or variety, showing the garden to have been enlarged a few times. The varieties were older cultivars such as 'Alba Praecox', 'Alba Dumosa', 'Alba Rigida', 'Serlei', 'Long White', 'Alportii', 'Barnet Anley', 'Beoley Crimson' and 'Beoley Gold', 'Ralph Purnell', 'Cuprea', 'Aurea' and one plant of 'Tib'.

Of *Erica carnea* (difficult to identify in the summer) he had 'Springwood White' and 'Springwood Pink', and 'King George'. Also a clump of *E. vagans* 'Mrs. D. F. Maxwell', and *E. cinerea* 'Alba' and 'P. S. Patrick'. Finally there were ten plants of *E. arborea* 'Estrella Gold' attractively spread out over the whole garden.

"The 'Estrella Gold' are nice" I said, daring to mention a name, but as I expected, he looked puzzled. He didn't know any names. "Oh those - they said those are not hardy, but I have not had any trouble. They get cut down to the ground like the rest. Amazing isn't it?"

I tried once more as we approached a corner of mixed planting. "If I were you I would brighten this corner up with a few newer named cultivars. I will write down the names of a few really good doers". Again no reaction. He knew it all. I think that right from the start he wanted none of the Heather Society or of good advice. I think he must have had some bad experience on this subject. I am not like that.

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Freedom is happiness - not so amazing.

But amazing about the beech leaves, the pruning and no damage. I will look him up next spring and see how he is getting on.

The Doncaster *Erica carnea*s

Albert Julian, Whaley Bridge, Derbyshire

Whilst attending a Quaker social gathering in the early spring of this year I met Mr. Stephen Doncaster, a keen gardener and heather enthusiast, who lives in Whaley Bridge, Derbyshire. In the course of conversation I mentioned that his somewhat unusual surname had been given to two *Erica carnea* cultivars, 'Mrs. Sam Doncaster' and 'Amy Doncaster'. To my surprise he said that Mrs. Sam was his grandmother, and that Amy is related to him by marriage. Stephen, who inherited the Doncaster family love of gardening, was able to give me some interesting information on his forebears.

Brothers Daniel (1834 - 1912) and Samuel (1853 - 1934) were sons of Sheffield steel-maker Daniel Doncaster (1807 - 1884). Samuel married Emma Gertrude Barber (1853 - 1937) in 1877, and the popular purple/pink *E. carnea* 'Mrs. Sam Doncaster', introduced by the firm of James Backhouse of York in their Coronation catalogue of 1911, bears her name. Samuel, who like his father was a steelmaker, built his house "Whinfell" at Whirlow, Sheffield using local sandstone quarried on his land. The resulting quarry eventually formed an important part of his impressive garden, and (the third*) James Backhouse carried out much of the shrub and extensive heather plantings in the quarry.

* I am indebted to David McClintock for the information that members of three generations of the Doncaster family were named James. Their dates were 1794 - 1865, 1825 - 1890, and 1861 - 1945.

It is thought that there was a strong friendly relationship between Sam and the Quaker Backhouse family, of which the naming of the *E. carnea* cultivar was an expression.

The quarry gardens still exist and are owned by the Sheffield Corporation. Alas it is a pale shadow of its former magnificence. In 1958 the Backhouse Nursery was bought by the York Corporation and absorbed into the West Bank public park in Acomb on the outskirts of York. The greenhouses are in use still for raising plants for the parks and flower beds of York.

Daniel's son Edwin (nephew of Sam), a member of the Alpine Garden Society, settled in Burley, near Ringwood, Hampshire, and created an alpine garden there. His first wife died in 1935, and he married Amy Baring of Chandler's Ford in 1947. She is the Amy after whom the salmon pink *E. carnea* 'Amy Doncaster' is named. Edwin died in 1950, and Amy continued to live in her house at Chandler's Ford, where she extended and developed her one acre woodland garden, growing many uncommon ornamental plants. Roy Lancaster, in his article "A Garden of Memories" which appeared in the January 1982 issue of *The Garden*, gives an account of his visit to this unusual and lovely garden. Amy, born in 1894 still lives there, tending the garden that she has created and developed for nearly 60 years. *E. carnea* 'Amy Doncaster' was raised there, and was introduced by MacPenny's Nursery of Bransgore, near Christchurch, Dorset. There are two other plants that bear her name - *Calluna vulgaris* 'Amy' and *Helianthemum nummularium* 'Amy Baring'.

* * * * *

A Note on *Erica carnea* 'Unknown Warrior'

A. W. Jones, West Camel, Somerset

The name 'Unknown Warrior' originated from R. V. Roger's Nursery, Pickering, before 1983. From the beginning it was rather suspect, since it had been given to a plant which had arrived at the nursery, un-named, from elsewhere. The name was given as the plant had lost its label.

I first learned of it in a letter from David McClintock, dated 31st January 1983, where he described it as having "dark flowers and dark, very brownish foliage". Then Jack Platt included it in his list of new acquisitions on p.44 of the 1986 *Year Book*, with the added information that it bloomed from January to March, and had a neat habit.

From what follows it will be clear that it is an excellent plant, and perhaps it is surprising that it has not become better known. It is mentioned in Yates's *The Gardeners Book of Heathers* as a plant not yet known to be commercially available. It does not appear in the extensive list in *The Plant Finder*, and is only listed by R.V. Rogers in the files of the Society's cultivar enquiry service.

Jack Platt sent me material from the plant at the end of October 1985, but I have no record of attempting to strike cuttings, or even notes of an examination. Material came into my possession again in mid August 1988, when David McClintock sent me some. His generosity is such that he has no recollection of this gift. My notes say that it was very hard, but I succeeded in rooting a single cutting. That has now grown into a well-formed young plant, which bloomed in November and could therefore be checked against other cultivars.

The early appearance of the dark red* flowers suggested that it may be similar to 'Praecox Rubra'. That cultivar also exhibits a brownish tinge to its foliage at times, though this trait has not been noted in any of the descriptions of it that I have read.

Comparison of the plant of 'Unknown Warrior' with a plant of 'Praecox Rubra' of the same age showed that they shared the same, rather flat habit, with frequent short side shoots. The leaves of the two plants were indistinguishable in length, slightly recurved, and the same dark green colour. No differences could be found between the cream calyces or chestnut anthers.

The corolla of 'Praecox Rubra' is wider with respect to its length than that of any other cultivar of *E. carnea* with which I am familiar. This gives it a characteristic, short, fat appearance. The white filaments of the anthers protrude beyond the corolla. A fine painting by Brita Johansson of the flowers of eight cultivars of *E. carnea*, which appears in her article in *Tradgardsamatoren*, 1990, No. 2, shows these characters very clearly. The corollas of 'Praecox Rubra' and 'Unknown Warrior' were totally indistinguishable.

There seems little doubt that 'Unknown Warrior' is 'Praecox Rubra' masquerading under an unnecessary pseudonym. Its use should be discouraged.

* H12, heliotrope

Erica bocquetii and Other Turkish Ericas

David McClintock, Platt, Kent

This extremely local endemic species of the mountains of Lycia in S.W. Turkey had been collected on five occasions since it was discovered in 1968, but seemed to have been unvisited for the past 15 years. There were apparently no specimens in any herbarium outside Turkey, except in Switzerland, plus a scrap in mine. It had not been brought into cultivation. The records I knew of were

1. H. Peşmen, F. Meyer and S. Oflas, Çiglikara 28. 4. 1968. Four sheets No. 6025. No flowers.
2. Suleyman Parlakdag 15. 7. 1968. Dokuzgöl Mevkii, Çiglikara, Elmali district, 1750 m. Two sheets No. 4512. These are the type specimens; isotypes are in the herbaria at Geneva and Zurich.
3. Feruk and F. Mutlu. 3. 9. 1968. Two sheets No. 6100.
4. K. Fitz and F. Spitzeberg. 12 - 20. 6. 1969. Three sheets No. 8058
These four gatherings I have seen in the herbarium at Izmir.
5. R. Getik 1. 7. 1974. His No. 1949, Stony slopes of *Cedrus libani* forest. W. of Don Cukuru, Çiglikara, Elmali. In the Ankara Herbarium.

At the end of his 19 line-long description of the new species in 1968 Pesmen wrote that it covered the calcareous rocks in a clearing of the *Cedrus libani* forest facing NW.

These seemed all the clues to refinding this plant, when our member Lupo Osti from Rome and I joined Hayrettin Karaca, the owner of the Karaca Arboretum, at Yalova, to the east of the Sea of Marmara, on 20th July 1989. Imagine our astonishment to be shown by him a

fine pressed specimen of the species and a dried sprig of it. He had been in its area some days before, had taken the opportunity of trying to find it before we went there, and had triumphantly succeeded!

To cut that story short, he drove us a week later to his locality around the head of a small valley, the plant facing all directions of the compass, not far off the road to the north of Dokuzgöl Rakim, where we spent two nights in the Guest House of the Turkish Forestry Administration. Here it sprawled flat against the tall calcareous rocks, spreading fan-shaped or weeping down - one such plant hung 145 cm, always in some shade. The plants were clearly often of great age - the base of a dead trunk I brought back is 13 cm in circumference. Search as we might, we could find no seedlings on the ground; every plant we saw was rooted into a rock crevice. Yet capsules abounded and seemed to have seed, but it was rather early for this. Nevertheless, some that looked riper were collected and are being sown. (Later. None germinated).

The plant proved to be very attractive with numerous flowers of a good heliotrope (H11) corolla, and a darker calyx. There is snow in winter at that height, but this is unlikely to have afforded protection to the vertical rock faces where it grew. The plants should therefore be hardy as well as suited to chalky soils, ergo highly desirable.

We went from this locality to see it elsewhere. Hayrettin had also found it 2-3 km further west, and, eventually, there it was, a short distance above the forest road; and perhaps half a km further on there was more.

It seems that none of these sites is the same as at least the original find, which remains to be satisfactorily

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located. But we now know that this species, which was assumed to be restricted to one place, in fact grows over quite an area in the neighbourhood of Dokuzgöl at about 1750 m, which is heartening. Nevertheless it is intended to make at least Hayrettin's first place a protected area. Meanwhile potential seeds and cuttings are in the hands of four people in this country, where several have rooted, plus Lupo Osti in Rome, and plus one of our other companions, Prof. Dr. Aysel Bayraktar - she is Head of the Landscape department of Izmir University. Also with us when we saw this plant were Adnan Kahvici, a member of the Turkish Parliament and until recently the Minister responsible for the environment, broadcasting etc., and Rifat Kural, who is in charge of the Forestry in the Elmali area. Numerous photos were taken.

The existence of plants in cultivation should make it unnecessary to try to find it in the native area, except for special study of the surrounding vegetation etc. Time did not allow us to list the accompanying plants, but one was the very local endemic *Paeonia turcica*. Specimens have been deposited in the herbaria at Kew, the British Museum (Natural History) and Edinburgh, where the work on the monumental *Flora of Turkey* was undertaken. Wisley also has a sheet and there are others in the Society's herbarium; and I have sent a specimen to Mrs. Metheny in Seattle.

I might add a note about the fruiting capsules. In the "second" locality in particular they were a bright shining chestnut colour, which would make the plant worth growing on that account alone if it performed in the same way here, in addition to its colourful flowers.

Dr Gilbert Bocquet (1927 - 1986) Director of the Conservatoire Botanique at Geneva told me that he had never seen a live plant; but he had worked with Dr. Peşmen in Anatolia.

P.S. After our visit other visitors saw the heather on flatter ground, probably in much the same area. In 1990 however it was found at 2,450m.

References

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2. Davis, P. H. *Flora of Turkey*, 1978, Vo. 6, p. 97.
3. McClintock, D., *Int. Dendrology Soc. Year Book*, 1989, pp 78 - 9.
4. Peşmen, A., *Candollea* 23, p. 271.

Also on quest in W. Turkey were *Erica manipuliflora* and *E. sicula* (*E. arborea* is very scarce and only in the S. W. part of the area we traversed. We did not see it). Mrs. Hall reported in our 1987 *Year Book* on seeing the first near the West coast, including a plant with white flowers. It was no doubt just chance, but we saw only very little until we reached the east coast of Lycia between Kumluca and Kemer, when it was locally abundant by the roadside hills and up both gorges, always in very early bud. When we had seen it earlier, it had been within reach of water or at least previous moisture. Furthermore many of these plants had been in flower, one or two even with quite a number of flowers brown and finished. The bushes were all about 80 cm to 1 m high. I saw one with galls. One which seemed to have white flowers, proved on drying to have just very pale pink ones. Otherwise the colour did not vary much.

The object of seeing as many colonies as possible of these species on the E. side of the Aegean was to see how uniform they were, and how much they agreed with the type from the region of Istanbul. That has a white stem, very short erect leaves and a thin very interrupted inflorescence.

We did see plants rather like that, but quite a number had chubbier inflorescences, (yet not as dense as those in the Adriatic) and it seems that plants further east may also have similar inflorescences. This variation, and that in flowering time, calls for more study, but at present at any rate, I think the populations in Dalmatia which Bert Jones and I studied in 1988, are distinctive.

Finally, *E. sicula*. Our sole guide was what was written in the *Flora of Turkey* - no specimen at Izmir. That indicated it to be at 100 m at Gönu \check{c} and at 60 - 100 m up the Kesme Boğaz gorge to the south, opposite Kemer. Lupo and I fought our way through the often Smilax-festooned vegetation of the Geynu \check{c} gorge to 100 m (we had my altimeter), but we could see no sign of it, on "shady limestone cliffs often with *Globularia davisii*", (a shrubby endemic). Of that we saw just one plant. The popular Kesme Boğaz gorge seemed unpromising, and had the added disadvantage that the main road was at 200 m, before the gorge started - so where was the 60 - 100 area? * This was very disappointing, for we needed to see how the population compared with the plant from there long grown under glass at Cambridge. We spent three hours or more, getting so torn and sweaty that the glasses kept slipping off my nose! That is the only one of our native Northern hemisphere heathers that I had not then seen growing in the wild.

*It seems that the "main road" was the old one, and we had been using the new one further and higher inland.

Plants of a "heather we could not recognise" were seen lower in the Kesme Boğaz gorge by two knowledgeable colleagues of mine within weeks of David's visit. Ed

Erica scoparia and its Variants

David McClintock, Platt, Kent

Erica scoparia, the Besom heath, Bruyère à balais, Brezo de escobas, (*scoparia* means broom or besom), has been given four other Latin binomials; and no fewer than 29 appellations have been used for variants, all of which are considered below. Fourreau (1869) used *Chlorocodon* as its generic name; and O. Kuntze (1898) *Ericoides*, but neither have survived, since, huge though the genus is, it has proved impossible to split *Erica* at generic level.

The epithet *scoparia* goes back over 400 years, although other pre-Linnean names were also used for this plant. It is in Bentham's section *chlorocodon*, meaning green-belled, of which it is the type species. Other members of it, all South African, have small closely packed flowers among the leaves. The flowers are not always green, but even when they are a rich brown, they are hardly eye-catching. They appear in April and May, lingering on long after that as the fruits develop. Their garden merit lies in the foliage of the subspecies of the Atlantic islands. It seems hardy enough in most of the British Isles, but is not in central Holland (van de Laar, 1976).

The oldest specimen may be in the herbarium of Gaspard Bauhin (1560 - 1624), referred to by J. Gay (1786 - 1864) in a note dated 2 March 1833 at Kew - but he adds that it is leafless and flowerless! There is another early one, No. 694, in the so-called Morisonian herbarium at Oxford (the specimens were mostly collected by John Tradescant (1608 - 1662); and I have seen one dated 1699 in Halliwig's herbarium at Gottingen.

There are references to this plant in all the main herbals so, insignificant though the flowers may be, it has long been

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widely recognised. The earliest mention and depiction I know of is from Cluisius (1526 - 1609) in 1576. His woodcut was reproduced in several later works, e.g. Lobel (1581), who indeed called it *Erica scoparia (flosculis herbaceis)*. Bauhin described it as *Erica scoparis "foliis deciduis"*, derived perhaps from the specimen mentioned above, but it is what so often happens with dried specimens of tree heaths. Johnson (1633) wrote "the leaves which easily fall off from the dried stalks". Even the final edition of Miller's Dictionary (1807) says that "the leaves quickly fall off". The species was said by Aiton (1789) to have been introduced about 1770 from Portugal. Don (1834) said it was a native of the Cape of Good Hope! Its distribution in fact extends from Italy and Tunisia westward to the Canaries (Hansen 1950. McClintock 1989).

Apart from making brooms, it has been used for thatching, fences, hurdles, floor coverings and fires (Drouet 1864), and even house building (Sjogren 1973). It is also an esteemed source of honey (Schacht 1859). Sjogren (1984) has written (of the Azorean plants) that old trunks carry endemic mosses, and Kunkel (1976) of the Canary Islands plants that "the loose and hanging bark constitutes a unique habitat, housing the richest bark fauna. In addition to its proper fauna, numerous terricolous species climb through it Sitting at *E. scoparia* is a gratifying experience for any entomologist". *E. arborea* does not have bark like that but *E. terminalis* does, with age. *E. arborea* however can be told out of flower by its pubescent young shoots: those of *E. scoparia* are glabrous. Personally I do not recollect the typical subspecies in the Mediterranean having bark like this. Perhaps it is a character of the Macaronesian plants.

A hybrid between the two species, which are in different botanical sections, has never been proved. It was claimed by Rivas Goday and Bellot in 1946 as growing with the parents

between Valedangosto and Barranco de Santa Elena in the Sierra Morena, and said to be common. But I have traced no further mention of this. In fact the two species do not often grow near each other in that country. There is also *Erica trinitatis*, a nomen nudum from Sennen and Mauricio (1933) "nos podemos admitira como *E. scoparia*, ni tampoco *E. arborea*, segun nos han sugerido botánicos de valor". This was in the Altiras del Kerken in the Rif Oriental of Morocco. But it "nous est inconnue" to Emberger and Maire (1941).

The chromosome number was ascertained as $2n=24$ (Natarajan 1981, Fraga 1983a), the same as for every other *Erica* ever counted. Galled shoots are not uncommon, and *Perrisia ericaescopariae* with more than one larva in the shoot may be suspected of being responsible (Delvincourt 1989). Phenolic (Fraga and Mantillam 1983), cyanogenic compounds (Fraga *et al* 1985) and 2-hydroxyphenolic acid (Ballister *et al* 1975) have been detected; Ballistere *et al* (1977) record that the suppression of herbs, especially grasses, in heathland can be explained at least partially by the toxic substances it secretes. Its pollen grains were described and depicted by Oldfield (1959), Visset (1971) and Diez *et al* (1987) they and its seeds described by Fraga (1983b). Its soil preferences are set out by Aubert (1978). All these data are for ssp *scoparia*, the Mediterranean plant only.

Binomials Used

Erica scoparia L. is the correct name, and *scoparia* the only epithet universally employed, in one genus or another, since Linnaeus published it in 1753, the starting year for all plant names, as "Erica antheris bicornibus inclusis, corollis campanulatis longioribus, foliis ternis patentibus, ramis tomentosis Habitat Monspeliensii, in Hispania & Europa australi". Surprisingly, he grouped this in his

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section "antheris bicornibus", when in fact the anthers have no appendages. But in his haste, several of his descriptions were left with similar inaccuracies. The type specimen is in the Linnaean herbarium, No. 498/17 (Jarvis and McClintock 1990). But, beware, Thunberg (1785) used *E. scoparia* for what is clearly *E. arborea*, nor is he alone in this; confusion between the tree heaths is not new.

Post-Linnaean binomials, considered synonymous and long disregarded, are

E. absinthoides Sprengel 1825. "*E. fucata* and *virgulata* Wendl. *expecta Hort Actaea Link*".

E. fucata Thunberg, No. 9 (1785); Wendland No. 15 (1798); Waitz No. 95 (1805). *Fucata* means painted or coloured, an extraordinarily inappropriate epithet! This binomial was quite widely used in the early years of the last century, e.g. also by Don (1834), Klotzsch (1834), Bentham (1838), Hochstetter (1844). Salisbury (1800) equated the name with *E. viridipurpurea* and Tausch (1844) wrote "Thunberg Diss Nr 9 muss seine Beschreibung von sehr jungen unvollständig entwickelt Blumen entlehnt haben. Als *viridipurpurea* L. Kann *E. fucata* Wendl. 95 angeführt werden". Paquet (1844) says of it "port plus droit". Cf var *laxa* below!

E. virescens Thunberg No. 59: 9, 37, 1785.

E. virgulata Wendland XII 1789; Klotzsch 1834; Bentham 1838.

Infraspecific Names

Ssp. *azorica* (Hochstetter in Seubert) D. A. Webb 1972. Covers all the plants in the various islands of the Azores archipelago. It was originally published in 1844 as a species (cf. Sjøgren 1973: 251 - 3). This I find delightful with its distinctive curling waves of foliage, embellished in early summer by myriads of chestnut-coloured flowers, admittedly small, but so numerous as to be decorative. Until D.

Richards and I brought cuttings back in 1974, all the plants in cultivation stemmed from the one introduced in 1939 by Collingwood Ingram. Of this he wrote (1970) "Who would have anticipated that a plant growing at sea-level in an island where even in mid-winter the temperature has never been known to fall below 40°F would be unaffected by a temperature as low as 16°F? Yet that is exactly what has occurred with the plants of the Azores Tree Heath - which I collected on a small island within sight of where bananas and orange trees were being cultivated". Yellow-foliaged plants are not rare, but none so far brought back have retained this feature. There is a dramatic illustration of how large it can grow in Sjøgren (1984): see also Schacht (1859) and McClintock (1989).

var. *chlorantha* (of *E. azorica*) Hochstetter 1844. "floribus virescentibus".

'Compacta' A 1965, and therefore illegitimate, superfluous name for 'Minima'.

var. *congesta*. Name on a 1838 specimen at Kew. Is *azorica*.

'Cooperi'. Dickson of Chester 1883. Gauntlett of Redruth c 1900. Who was he?

var. *diffusa* (of *E. fucata*) Thunberg 1785, Waitz 1805. "Ramis inflexis".

var. *erythranta* (of *E. azorica*) Hochstetter 1844. "Floribus roseis".

f. *humilis putata* Bornmüller 1904. Exc Pico Facho, Porto Santo, 500 m. N 921. ? = var. *portosanctana* of O. Kuntze, below.

var. *laxa* Regel 1843 : 171. "Weniger ästig. Blumen erscheinen viel sparsamer in unterbrochenen Trauben. *E. fucata* Hort."

'Lionel Woolner'. Collected by him at 1000 ft in the Mercedes mountains, Tenerife 1969 (Woolner 1974). Leaves sunny golden green. Flowers dark red. Cf Proudley 1976. Did not survive.

f. vel hybrida *lutea* Sennen from Tiebemoles, 760 m, Spain

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1928. "Feuilles vertes, florescentes; fleurs plus compactes. Gonzalez in sched. Feuilles de 6 - 7 mm dépassant le longueur normale, sillonnées et non bisillonnées, sur le dos; flore sulfuré". Sheet 6304. 427 Plantes d'Espagne 3 - v, leg H. Gonzalez, Hb Paris.

var. *macrosperma* Jessen, Anderson and Farrington 1959.

From the upper layers of the Hoxnian interglacials. Seeds consistently with thicker walls and larger. Godwin 1975.

'Madeira Gold'. Sport in 1982 at Bracken Hill, Platt on a plant ex Madeira 1974. Leaves yellowish. Registered No. 36, 1984.

ssp. *maderincola* D. McClintock 1989. Covers plants from Madeira and Porto Santo. Introduced 1974, if not earlier.

'Mercedes Gold'. Ex Tenerife. L. Woolner 1969. Leaves yellow. Reverted to green after four years.

'Miniata'. Gauntlett, Redruth c 1900. ?Misprint for 'Minima'.

'Minima'. The earliest, 1808, name for what was subsequently also called 'Compacta', 'Minor', 'Nana' and 'Pumila' (McClintock, 1979). There is a specimen at Kew from the Tooting Nurseries dated 1849. This is said to reach 60 cm, but even then is hardly a tree heath.

'Minor'. 1906 synonym for 'Minima'.

'Nana'. 1851 synonym for 'Minima'.

var. *normale* O.Kuntze (of *Ericoides scoparia*) 1898. "Frutex 1 - 2 m altus, floribus flavido-viridulis. Madeira".

var. *parviflora* Bentham 1838. From "the Azores and Lusitania". "Stigmate longe exserto". To which Hochstetter, (1844) added "Caule elatior saepius vere arboreo. Colore rumulorum et ramulis foliisque non ut in ille glaberrimis Flores numeroissimi, minimi, calycis segmenta angustiora incisures corollae non attingunt (tubo corollae subduplo brevioro sunt - quam in *E. scoparia* fere aequant) antherae apice profunde bifidae sunt".

ssp. *platycodon* (Webb and Berthelot) A. Hansen and Kunkel 1976. A variety. Webb and Berthelot (1844). Covers the Canary Islands plants. Depicted in Kunkel, 1981.

var. *portosanctana* (of *Ericoides scoparia*) O. Kuntze 1898. "Frutex robustus minimus 15 - 20 cm altus. Floribus apice fuscentibus. In Picho Facho, Porto Santo. "Stellenweise auf den Bergen häufig". Bornmüller (1904) commented "Die Exemplare zeigen in den Blüten keine Abweichung von der normalen Farbe". Specimen at Kew. cf *humilis putata*.

'Pumila'. 1851 synonym for 'Minima'.

var. *purpurascens* R. Maire 1929. "Corolles oblivescentes à la base et pourpre foncé au sommet". Has also been called var. *purpurea* Maire. Specimen at Bucharest ex Cap Spatel, Tangier, "dull purplish flowers", 1936.

var. *purpurea*. Maire. See above.

'Sordida'. Gauntlett, Redruth c. 1900.

var. *stricta* Thunberg 1785, Waitz 1805. "Ramis erectis".

var. *viridipurpurea* Tausch 1844. A nomen nudum equated by him with *E. fucata*. Dulfer (1963) considered it conspecific with *scoparia*. Specimen at Kew No. 210 ex Tooting Nursery 1849.

Probably, all these names, except for the subspecies, are nowadays forgotten, and just as well!

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Cultivars Registered During 1989

The Registrar

68. *Calluna vulgaris* 'Hatje's Herbstfeuer'. A 1982 sport on 'H. E. Beale' in H. Hatje's nursery at Tornisch-Ahrenlohe, Germany, differing in its larger flowers and darker colour. Found and registered by him.
69. *Calluna vulgaris* 'Holstein'. A golden-yellow seedling in his nursery at Tornisch-Ahrenlohe, Germany, in 1980, coppery red in winter, particularly richly coloured and resistant to fungal disease. Found and registered by Herbert Hatje.
70. *Calluna vulgaris* 'Heidesinfonie'. A seedling in his garden at Tornisch-Ahrenlohe, Germany in 1982, similar to 'Allegro', but with bronze foliage and salmon-pink flowers. Found and registered by Herbert Hatje.
71. *Daboecia cantabrica* 'Celtic Star' - Found in Connemara in 1986 by D. McLaughlin, distinct in its cerise (H6) calyx extending to nearly half the length of the corolla. Registered by him.
72. *Erica carnea* 'Barry Sellers'. A compact seedling from 'Aurea' in 1976 at Chandlers' Ford with yellow-orange leaves tightly spaced between whorls and the deepest flowers of similar plants. Found and registered by Mr. Sellers.
73. *Erica cinerea* 'Claverley Gem' A dwarf prostrate sport on 'Plummer's Seedling' in 1985, differing also in its pale or yellow-green foliage with orange and bronze tints. Found and registered by J. F. Chattaway.
74. *Erica x williamsii* 'Gold Button'. A deliberate cross of very compact growth with golden yellow foliage produced by Dr. John Griffiths of Garforth, Leeds between *E. tetralix* 'Alba Mollis' and *E. vagans* 'Valerie Proudley' in 1984. It has not yet flowered. Registered by him.
75. *Erica terminalis* 'Golden Oriole'. A seedling in his garden at Sherford near Taunton in 1989 with yellow foliage. Registered by the finder, D. I. Lockie.
76. *Calluna vulgaris* 'Sampford Sunset'. The hardiest and most vigorous of three golden-foliage seedlings ex 'Sunset' at Sampford Shrubs in 1985. It differs from 'Sunset' in being

more green/bronze and of better constitution. Registered by its finder Martin Hughes-Jones.

77. *Calluna vulgaris* 'Golden Dream'. A golden-foliage sport on 'My Dream' in 1984 in the garden at Fenny Drayton of Mr. G. J. Cookes, who registered it and put it on the market in 1986.
78. *Calluna vulgaris* 'Pink Dream'. A sport on 'Golden Dream' in 1986 differing in its pink flowers. It arose in the garden at Fenny Drayton of Mr. G. J. Cookes, who registered it and put it on sale in 1990.

* * * * *

New Acquisitions

J. Platt, Ulnes Walton, Lancashire

(During the past year Jack Platt has continued collecting recently introduced heathers with undiminished enthusiasm. As usual, he has provided descriptions of those he has obtained during 1989, and these have been augmented with further information supplied by our President and Chairman.

Ed.)

Calluna vulgaris

'Athold Gold'

Aug. - Sept.

This plant has H2 (mauve) flowers and, as the name suggests, gold foliage. It is at its most brilliant in winter, when the foliage takes on tints of red, orange and bronze. It has an upright habit, and is similar to 'Robert Chapman'. (*Year Book*, 1989, p. 64)

'Dark Star'

Aug. - Oct.

A sport on 'Darkness', found by Ernst Stührenberg of Wiesmoor in September 1981. It was introduced in 1984/5, and awarded a gold medal at an exhibition at Boskoop in 1986. It has both single and

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double H13 (crimson) flowers, though it has also been described as being semi-double. These give it a deeper overall appearance than 'Darkness'

'Mini-Öxabäck'

This is one of three seedlings from 'Öxabäck', found by Hilding Nilsson in Sweden about 1978. It is a beautiful dwarf plant for the small garden, with a compact habit and dark green foliage.

'Nigel Anderson'

Nov. - Dec.

The H11 (lilac-pink) buds of this plant do not open. It is an example of f. *diplocalyx*. It has dark green foliage and an upright habit. The Dutch cultivar 'Marleen' is similar.

(*Year Book*, 1989, p. 64)

'Pink Spire'

Sept. - Oct.

This plant is aptly named since it has a narrow, erect habit and pink flowers. The foliage is grey-green. It came from Holland.

'Strawberry Delight'

July - Aug.

The seedling from which this cultivar originated was found in Mr. Dover's Cornish Garden Nurseries at Perranworthal, near Truro in about 1978. I understand that Mr. Dover has unfortunately lost his stock, and my plants came from Mr. van Hoef in Holland. They carry double pink flowers, early in the season, and have a low-growing, bushy habit. They are similar, but inferior to 'County Wicklow'

'Trysul'

A compact bun of bright green foliage which has yet to bloom. It was raised by Mr. Wain, and is presumably named after the village between Wolverhampton and Bridgnorth.

'Winter Red'

Aug. - Sept.

The flowers of this cultivar are mauve, and the foliage gold. It takes its name from the habit of the foliage of turning red in cold winters. It is similar to 'Boskoop', but rather more upright. It was found as a seedling by Mr. Hoekert in Holland in about 1981. (*Heidegarten*, 1987, No. 22, p. 42)

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'Yellow Basket'

Aug. - Sept.

A good white-flowered plant, with light yellow foliage and an open, erect habit. It remains to be seen if it will be an improvement on older cultivars such as 'Gold Haze'. It was raised by John Proudfoot of Methven, Perthshire.

Erica cinerea

'Dorset Pink'

Aug. - Sept.

As the name suggests, this plant has pink (H8) flowers. The leaves are dark green, and the habit flat and spreading. It is very similar to 'Pink Ice'. The name has been known since about 1969, but nothing more is known about the origin of the plant.

Erica x darleyensis

'Kramer's Rote' (syn. 'Kramer's Red')

Dec. - March

This cultivar was selected from a batch of seedlings which resulted from a deliberate cross between *E. carnea* 'Myretoun Ruby' and *E. erigena* 'Brightness', made by Kurt Kramer in 1981. The H14 (magenta) flowers are by far the darkest of any *E. x darleyensis* cultivar. The young stems are dark red, and the leaves are dark green with a faint bronze tinge. It does not have the coloured new growth that is normal in these hybrids. It forms a neat, compact dome. This distinct and outstanding cultivar received an Award of Merit at Boskoop in 1989. (*Year Book*, 1988, p. 56).

Erica mackaiana

'Shining Light'

25 cm

June - July

This cultivar has white flowers. The habit is erect, and there is a greyish tone to the dark green foliage. It was found in Spain in 1982 by David McClintock, Charles Nelson and David Small. It appeared first in Plaxtol Nurseries' 1989 catalogue as "Shining White", but the name was later changed at Dr Nelson's request. (*Moorea*, 1990, Vol. 8, p.43; *RHS Proceedings*, 1989, Vol. CXIV, p.21; *Ericultura*, 1989, No. 75, p.19)

Erica tetralix**'Pink Pepper'**

This plant was fully described on p. 69 of the 1988 *Year Book*, following its registration by David McClintock in 1987. It has pale shell-pink flowers. The foliage is grey-green with white flecks, and is most attractive.

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Personal and Geographical Names for Heathers - 9th Supplement

David McClintock, Platt, Kent

The "Seventh" (it should have been the Eighth) Supplement appeared in the 1989 *Year Book*, pp 63 - 5.

Personal Names

- 'Allison' (*carnea*). Mrs Allison Barton, employed at Plaxtol Nursery, where found 1988.
- 'Anja Slegers' (*cinerea*). Daughter (b. 1968) of A. G. Slegers of Soerendonk, finder in 1986.
- 'Annabel' (*Calluna*). No person. Sport on 'Annemarie'. Pre - 1981.
- 'Celtic Gold' (*Calluna*). Seedling in Lock's Nursery, Co. Armagh, c. 1985.
- 'Celtic Star' (*Daboecia cantabrica*). Found in Errislannan, Connemara, by D. McLaughlin, 1986.
- 'Iris van Leyen' (*Calluna*). A girl in the school where the finder locally, in 1985 of the seedling, Tys Huisman of Hatten, teaches.
- 'Loni' (*Calluna*). Pre - 1989. Seedling of Fritz Kircher's, named after his wife.
- 'Jiri' (*cinerea*). Son of R. Nagels of Kalmathout, finder of plant in the Charente, France, 1977.
- 'Mary' (x *watsonii*). Wife of J. C. Flecken of Kerkrade, finder of plant in Brittany 1985.

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preslii (*multiflora*). Variety of *L. Nicotra* from Sicily and Malta, 1878. Named presumably after the Czechs C. B. (1794 - 1852) or J. S. (1791 - 1849) Presl: the original description gives no reason for the choice of epithet.

'Red Hugh' (*Calluna*). Red Hugh O'Donnell of Donegal c. 1550. Seedling before 1974 at Rostrevor.

'Zalia' (*carnea*). Nurseryman Zaal. A later name for 'Orient'.

Geographical Names

'Carn Gold' (*Calluna*). Carn Nursery, Maghera, Co. Londonderry. Sport on 'Boskoop', 1985.

'Clavelly Gem' (*cinerea*). Village near Wolverhampton where the Chattaways, finders of this sport on 'Plummer's Seedling' live, 1985.

'Galicia' (*mackaiana*). Area of NW Spain where found in 1982.

'Sampford Sunset' (*Calluna*). Seedling from 'Sunset' at Sampford Shrubs, Sampford Peverell, Tiverton, 1985.

Ameliorations

'Scholje's Superstar' (*Calluna*). Sport on 'Schurig's Sensation' with D. Scholjagerdes of Bad Zwischenahn.

* * * * *

Recent Writings on Heathers, 1989

Anon., "Are you a plantologist?", *Garden Answers*, May, p. 69.

Don Richards "a heather fanatic" and his Dewpoint Cabinet.

Anon., *Erica cinerea* 'Glasnevin Red', Irish Garden Plant Society, Cultivar card 11, 1989

A little-grown plant, at one time thought lost. The colour here does not quite agree with that in the Proudley's book.

Anon., "*Erica lusitanica*", *Mon Jardin et ma Maison*, 1989, Nov. p. 39

"Une bruyere majestueuse" with a photo of it and *E. australis* with Bernard and Brigitte de la Rochefoucauld.

- Anon., "Erika, Stauden und Geholze", *ZVG Gartenbau Report* 15 (1), p. 34
 Numerous prize-winning exhibits of heathers, nearly all *E. gracilis* in a very varied display at the Frankfurt Garden Show, including pyramids of heathers.
- Anon., "First Heather Heritage Centre", *Amateur Gardening*, 22nd July 1989, p. 5.
 The Lambies' venture at Dulnain Bridge.
- Anon., "New look at marketing at the Heather Centre", *Horticultural Week*, Vol. 205, No. 25, p. 8.
 'The Lambies' Heritage Centre addition to their Strathspay Centre, with history, uses and heather artifacts as well as plants.
- Anon., "Winter Heaths", *Gardening from Which*, Sept/Oct 1989, pp 328 - 9.
 Useful, but my 'W. T. Rackliff' isn't 30 x 100 cm!
- Andres Caballas Jiminez, *Diccionario ilustrada de los nombres vernaculos de las plantas en España*, Icona, 1989.
 P. 592 *Calluna* (with scores of local names); 527 *Daboecia*; 535 *Erica*, with illustrations of *E. arborea*, *cinerea* and (almost unrecognisable) *terminalis*.
- Baker, S., "The Heather report, from grouse moors to gardens", *Traditional Homes*, May 1989, p. 93.
 Quite good, with lists for further reading, and addresses.
- Barocetti, M., *Flore mediteraneenne*
 From the E. Pyrenees; includes *E. cinerea*, *E. arborea* and *E. multiflora* small photos in colour, individual parts separately in black and white.
- Bayer, E. and Gines Lopez Gonzales, "Los Brezos Espanolas", *Quercus*, 1989, Vol. 35, pp 21 - 36.
 A comprehensive and admirable keyed account with fine photos and bibliographical references.
- Beaujard, F. and Viémont, J. D., "Heathers in vitro VII. The pH of the culture medium, and morphogenesis of *Erica x darleyensis*", *Canad. J. Bot.*, 1989, Vol. 67, No. 1, pp 161 - 6.
 (See Viémont and Beaujard below)
- Beaujard, F., Viémont, J. D. and Lebavume, M. P., "Discontinuous growth of twigs in two Ericaceae grown in vitro", *Acta Horticulturae*, 1988, 227, pp 40 - 1
 The growth rhythm of micropropagated *x darleyensis*.

- Bodkin, F., *Encyclopedia botanica*, Angus and Robertson, 1989
 Native and exotic plants obtainable from nurseries in Australia.
 P. 80 *Andromeda*; 174 *Bruckenthalia*; 198 *Calluna* ("Broom,
 Scottish Heath, Ling"); 319 *Daboecia* (*D. azorica* "Irish heath,
 frost resistant"); 319-4 *Erica arborea, carnea, cinerea, lusitanica,*
"mediterranea" ("Biscay Heath"), *multiflora, terminalis* (as
stricta, "frost tender"), *tetralix* ("Ling"), *vagans*, plus 32 S.
 Africans including "*E. hyemalis*, a native of Europe", many of
 them "frost-resistant".
- Bokdam, J. and Gleichman, J. M., "De invloed van runder-
 begrazing op de ontwikkeling van Struikheide en Nuchtige,
 smale", *De Levende Natuur*, 1989, Vol. 90, No. 1, pp 6 - 14
 Year-round grazing by cattle benefits *Calluna* at the expense of
Beschampsia flexuosa.
- Brenkley, C., "Heather Lovers enjoy the purple", *Northern Echo*,
 1st Sept. 1989.
 A ridiculous account of the Conference at Durham.
- Brickell, C. D., (ed.), *Gardeners Encyclopedia of Plants and
 Flowers*, 1989
 Contains 3 *Andromeda* cvs, all illustrated; *Bruckenthalia*;
Calluna 45 cvs, 15 illustrated; 5 *Daboecia*, 3 illustrated and 88
Erica in 22 species (some tender), 38 illustrated. The text for these
 was written by our Chairman.
- Bunce, R. G. H., (ed), *Heather in England and Wales*, HMSO,
 1989
 A 40-page appraisal of the state of their moors and proposals for
 conserving what remains.
- Carlstrom, A., *A survey of the flora of Rhodes and the
 Marmaris peninsula*, Lund, 1988
 P. 910 *Erica arborea*; 911 *E. manipuliflora*, with distribution
 maps.
- Cantwell, E. B., "A Heathery frame for picture-perfect Azaleas",
Garden, 1989, Vol. 13, No. 3, pp 18 - 21.
 Good advice, but *Erica cinerea* called Scotch Heather.
- Carstairs, I., "The purple-headed mountain", *Natural World*,
 Autumn 1989, pp 8 - 11
 The story of the N.Yorks moors.
- Chapman, S. B., Rose, R. J. and Basanto, M., "Phosphorus
 adsorption by soils from heathlands in southern England in
 relation to successional change", *J. Applied Ecol.*, 1989, Vol. 26,
 pp 673 - 80.

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Future management in relation to changes.

Crouch, H. J., "Phyllodoce caerulea (L.) Babington, f. albiflora Hiitonen", *Blyttia*, 1989, Vol. 47, No. 3, pp 121 - 4

All the, very few, records of this heath with white flowers.

Davidson, L. E., "A new species of *Erica* from the eastern Transvaal", *S African J. Bot.*, 1989, Vol. 55, No. 5, pp 473 - 5
E. rivularis in section *Hermes*.

Delvincourt, R., "Les principales zoocidies des plantes basses de la flore française", *Bull. Soc. Linnéenne de Provence*, 1989, Vol. 40, p. 32

Keys to three species of plant galls on *Ericas*.

Denkewitz, L., "Gefülltblühende Besenheide", *Gartenpraxis*, 1989, No. 5, pp 24 - 7

An admirable commentary and assessment.

Diemond, W. H. and Linthorst Homan, W. D. M., "Re-establishment of dominance by dwarf shrubs on grass heath", *Vegetatio*, 1989, Vol. 89, pp 13 - 19

How to foster them, including *Calluna*.

Dörfler, H. F., and Boselt, G., *The Dictionary of Healing Plants*, 1989. *Calluna* pp 64 - 5; a good illustrated account listing chemicals it contains.

Edwards, A., "Heather Forecast", *Country Times*, Sept 1989, pp 52 - 3

Wise words on the losses of moorland.

Figuerola, R., Peris, J. B. and Stübing, G., *Guia de la Flores sylvestres de la comunidad Valenciana*, Mestral, 1988, p. 249.

Uses the illegitimate name *Erica occidentalis* (Bentham) Mateo and Figuerola for *E. erigena*, with a flashlight photo of a pallid example looking more like *E. carnea*. On p. 248 is *E. multiflora* with apparently white flowers.

Foss, P. J. and Doyle, G. J., "A palynological study of the Irish Ericaceae and *Empetrum*", *Pollen et Spores*, 1988, Vol.30, No. 2, pp 151 - 178

Descriptions and photos of *Andromeda*, *Calluna*, *Daboecia*, *Erica ciliaris*, *erigena*, *mackaiana*, *scoparia* (Spanish, and indeed Irish material is compared with Spanish throughout), and *tetralix*. No *E. x stuartii*.

Grey-Wilson, C., *A Manual of Alpine and Rock Garden Plants*, C. Helm, 19.

Four pages in all, on heathers, recommending only tall cvs!
Bruckenthalia said to "fill the gap in flowering time between the

- heaths, *Erica*, and heather, *Calluna*".
- Gunn, Mary and Codd, L. E., *Botanical Exploration of Southern Africa*, Balkema, Cape Town, 1981
400 pages, most of them with accounts and photos of collectors, including Edward George Hudson Oliver, b. 1938
- Haeupler, H., and Schönfelder, P., *Atlas der Farn - und Blütenpflanzen der Bundesrepublik Deutschland*, Ulmer, 1988
Dot distribution maps of *Erica tetralix*, t 1137; *E. cinerea* 1138, *E. "herbacea"* 1139, *Calluna* 1140 and *Andromeda* 1149.
- Hodgson, I., "Cape Heath Revival", *Practical Gardening*, May 1989, p. 63
The Kingsbury Nursery, which grows nine species, plus a hideous picture of *E. canaliculata*.
- Hodgson, I., "Sporting Chances", *Plants and Gardens*, No. 4, Winter 1989, pp 83 - 6
Graham Cooke's garden, where 'My Dream', 'Golden Dream' and 'Pink Dream' originated, with good photos, plus a plug for the Heather Society.
- Hutchinson, D., *Heaths and Heathers*, ADAS Leaflet P3178, 1989
Six pages of advice to nurserymen.
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An excellent summary, historical too.
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- Lübbert, O., "Heide gibt dem Hausgarten die farbige Tracht", *Beueler Nachrichten*, 20th Sept. 1989, p. 9
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- Lundquist, J. and Nordenstamm, B., *Index holmiensis* 6, 1988
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An account, in German, of its rediscovery in July 1989.
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- Nilsdotter, G., "Ljung get skönnat året runt", *ICS Kuriren* 15, 12th April 1989, pp 40 - 1.
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- Nitsche, L. et al., *Flora des Kasseler Raumes*, 1988, p. 69
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p. 96 *Calluna* 132 *Daboecia* "not quite hardy". 138 *Erica vagans* picture is of *E. cinerea*. *E. x darleyensis* "varieties are rarely named".
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Good photos and text on *Erica arborea*, *E. australis* (2), *E. canaliculata*, *E. lusitanica*, *E. terminalis* and *E. x veitchii*.
- Pople, D., "Brighten up winter. *Erica carnea*". *Garden News*, 18th Feb. 1989, p. 10
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Advice on propagating from cuttings. Photos of "Penshale" (*sic*), 'C. G. Best' and 'Mrs D. F. Maxwell'

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200+ words plus a picture of *E. ciliaris* 'Aurea'.

Small, D., "Top Spring Collection", *ibid*, 1st April, p. 37

Coloured tips, with photos of 'Ann Sparkes' and 'Hugh Nicholson'.

Small, D., "Silver Treasure", *ibid*, 29th April, p. 40

Grey plants, with a ghastly 'Silver Queen'.

Small, D., "Fortunes of Chance", *ibid*, 27th May, p. 47

E. x darleyensis and *E. x veitchii*

Small, D., "Chance Encounters", *ibid*, 24th June, p. 14

Summer hybrids, with a picture of 'Irish Lemon'.

Small, D., "Dorset Belle", *ibid*, 22nd July, p. 12

Dorset Heath; 'Mrs. C. H. Gill' pictured.

Small, D., "The Irish Enigma", *ibid*, 19th Aug, p. 34

Erica mackaiana.

Small, D., "Better Buys", *ibid*, 16th Sept, p. 14

Good advice on buying plants

Small, D., "Double Pleasure", *ibid*, 14th Oct, p. 15

The double Callunas.

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 Good ideas. Good photo of *E. erigena*.
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- Straker, C. J. et al, "Electrophoretic and immunological studies on acid phosphatase from mycorrhizal fungus of *Erica hispidula*", *New Phytologist*, 1989, Vol. 111, No. 2, pp 215 - 221
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- Venison, T., "Unruly Elements", *Country Life*, 11th May 1989, p. 187
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- Vestergaard, P. and Kjeld, H., "Distributiona of vascular plants in Denmark", *Opera botanica*, 1989, Vol. 96, p. 59. *Erica tetralix*.
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Colourful praise, chiefly of winter-flowerers, embellished by photos from the de la Rochefoucauld garden.

Webb, C. J., Sykes, W. K. and (Garnock Jones P. J.) *Flora of New Zealand*, Vol. IV, 1988.

P. 607-8, *Calluna*: 608, *Daboecia cantabrica*: 610, *Erica arborea*: 610 - 1, *E. baccans*: 611, *E. caffra* (with fragrant flowers); 611 - 12, *E. lusitanica* 612-3, including "the floriferous 'Pyramidalis'" *E. vagans*. All naturalised.

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Willson, E. J., *Nurserymen to the World*, 1989, £6, p. 79 John Letts: 101 Underwoods, J. Kampa etc. But *Erica vulgaris* and *E. daboecia*, still!

Wilson, A., "Scotland - only the brave survive", *Horticultural Week*, 1989, Vol. 206, No. 20, pp 19 - 20

The stories of the nurseries of Ashley Howarth at Inverary and of the Willis family at Inverliever and Achnahoish.

Witt, H. W., "Wie winterhart ist die Heide?", *Gartenpraxis*, 1989, No. 2, pp 15 - 18

Wise words for German conditions.

* * *

There have also been excellent articles in our contemporaries, *Ericultura*, *Der Heidegarten*, *Heather News* and the *NE Heather Society Newsletter*.

* * * * *

Taspo Magazin, 1989, No. 7 has 36 large pages devoted to many aspects of heathers, including culture and marketing, largely written by the staff of the Research Station at Bad Zwischenahn, with numerous colour pictures. 21 of these are of different sorts of heathers. It also sets out the recommendations resulting from the trials at the Station. Strongly recommended, even to those who don't know German.

Heide unserer Gärten comes from the Fehling-verlag in Hanover. This is 12 pages long, most of them with the same photos as in the Taspo production, but in even better colour and with over 60 in all. Three are wrongly named, but don't they all look fine, and admirable propaganda for heathers!

Kleines Heide-ABC is a small 18-sided folder, again in full colour with a dozen cvs, and clear and helpful advice. It is published by CMA, Postfach 20 03 20, 5300 Bonn 2, Germany. Worth translating into English.

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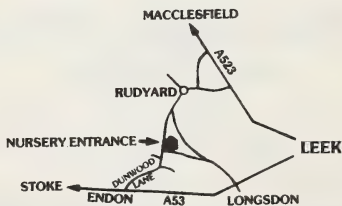
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