

## *The Lowland Heaths of the Bovey Basin*

The Bovey Basin is a low-lying, diamond-shaped area of about 72 square kilometres drained by the Rivers Bovey and Teign. It is situated on the Sticklepath-Lustleigh fault zone between Newton Abbot and Bovey Tracey and results from subsidence within this zone. The main basin is centred on Heathfield and, the much smaller Decoy Basin, on the south side of Newton Abbot. (Selwood *et al.* 1982, British Geological Survey 1978). The shallow basin-like sites at Chudleigh Knighton, Bovey Heathfield and at Great Plantation, where heathland is found, are occupied by the Knighton series (Clayden 1971), one of several different soils formed from rocks of the Bovey Formation (Findley *et al.* 1984). These comprise either peaty gley soils with thin layers of amorphous peat, 5 to 15 cm thick, or thin loamy Head, over acid gleyed kaolinitic clay. The soils under wet heath are strongly acid throughout.

Villages were established on the margins of the basin where the assemblage of habitats includes lowland heath, grassland, wet woodland, coniferous plantations, rivers and man-made ponds now fragmented by roads, mineral workings, housing and industrial development. The lowland heath must have developed following extensive grazing by domestic livestock in the distant past on areas where soil acidity and poor drainage limited the development of a more productive agriculture. The use of fire to maintain open heath may be a relatively recent practice developed as late as the 19<sup>th</sup> century (Webb 1986) but the vegetation will certainly have been modified by accidental and deliberate fires in recent times.

Dr Fraser Halle in his *Letters, Historical and Botanical* (Halle 1851) devotes three pages to the plants of the Heathfield area in which he records, amongst others, Bog-myrtle *Myrica gale*, Bog Pimpernel *Anagallis tenella*



A corner of Chudleigh Knighton Heath between two ball clay pits.

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and Royal Fern *Osmunda regalis*, all of which can still be found there today, and Great Sundew *Drosera anglica* which has been lost to development (see below). The plant species and communities occurring on Bovey Heathfield are discussed by Reverend A. Crawshaw (1939) and are, presumably, representative of the entire heathland area at that time. The largest remaining areas are at Bovey Heathfield and Chudleigh Knighton. Smaller areas of heath can be found here and there, including Stover Country Park and Great Plantation, and are refuges for some of the scarcer plant species. While it is impossible to know the exact state of the heath, much of it was still intact in 1965. Francis Rose, writing to John Hayward, The Devonshire Association Botany Section Recorder in 1965, says "I expect it (Marsh Clubmoss *Lycopodiella inundata*) is still there (at Bovey Heath) on this magnificent bog and wet heath area". By the end of 1967 a local botanist, Mrs M.C.Hockaday, writes to John Hayward, "Sad things are happening to Bovey Heathfield and Knighton Heath. A corner of Bovey Heathfield where Oblong-leaved Sundew *Drosera intermedia*, Pale Dog-violet *Viola lactea* and Petty Whin *Genista anglica* grew has been bulldozed for industry, and road works and clay (digging) threaten Knighton Heath."

Bovey Heathfield was notified as a Site of Special Scientific Interest in 1989 but was already severely damaged by off-road motorcycles and cars. Most of the remaining heath was acquired by Devon Wildlife Trust in 2002 and is now a Local Nature Reserve. The site is now fenced, large areas which had been denuded of all vegetation are gradually recovering, and small wetland areas created. Regular practical management is conducted by local volunteers. Another much smaller area is managed by Butterfly Conservation. Chudleigh Knighton Heath SSSI comprises 42 ha of wet and dry heath leased by Devon Wildlife Trust from Sibelco. It is grazed by cattle during the summer. Stover Country Park is a Local Nature Reserve owned and managed by Devon County Council. Small pockets of heath are maintained by the rangers. Great Plantation is, predominately, a conifer plantation, the greater part owned by the Forestry Commission and managed by



A clearing in Great Plantation.



Humid heath at Chudleigh Knighton Heath.

Forest Enterprise, where heath communities are scattered and dependent on the thinning cycle. Other areas of plantation on former heathland soils nearby are being restored.

Heath vegetation in the Bovey Basin can be divided into dry heath and humid/wet heath depending on drainage characteristics of the soil. Pure stands of each community type may be found but they often form mosaics or grade from one type to another according to local topography. In the absence of grazing, Scots Pine *Pinus sylvestris* and Birch *Betula* spp. are invasive. Within the remaining fragments the commoner species may still be found but much has been lost.

In addition to Heather *Calluna vulgaris* and Western Gorse *Ulex gallii*, common species on the dry heaths include Bell Heather *Erica cinerea*, Bristle Bent *Agrostis curtisii*, Green-ribbed Sedge *Carex binervis*, Pill Sedge *C. pilulifera*, Tormentil *Potentilla erecta* and Heath Bedstraw *Galium saxatile*. Nationally Scarce *V. lactea*, Red listed as Vulnerable, still occurs on Heathfield and Knighton Heaths and at Great Plantation but requires a degree of disturbance in order to flourish. *Genista anglica* has gone from most of its old sites; it was seen in 1999 in a small area of heath north of the tile works at Heathfield, which has now been bulldozed, but about 30 plants were found on Chudleigh Knighton Heath in 2014, the first record since 1970. Carline Thistle *Carlina vulgaris* appeared recently on Heathfield following scrub clearance.

On humid and wet heaths common species include *Calluna vulgaris*, Cross-leaved Heath *Erica tetralix*, Purple Moor-grass *Molinia caerulea*, Glaucous Sedge *Carex flacca* and Common Yellow-sedge *C. demissa*, whilst Lousewort *Pedicularis sylvatica*, Heath Spotted-orchid *Dactylorhiza maculata* and Creeping Willow *Salix repens* are more locally distributed. On Knighton Heath, Meadow Thistle *Cirsium dissectum* and Sneezewort *Achillea ptarmica* are reminiscent of the culm grassland of the northwest of the county. Star Sedge *Carex echinata*,

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Common Sedge *C. nigra*, Deergrass *Trichophorum germanicum* and Bog Asphodel *Narthecium ossifragum* are all rare. *Narthecium ossifragum* was seen recently at Heathfield, but not since 1985 at Chudleigh Knighton, and White Beak-sedge *Rhynchospora alba* re-appeared at Heathfield in 1995 following disturbance. Of the less common species, there are still small populations of *Myrica gale* at Stover Country Park, Heathfield and Great Plantation and Allseed *Radiola linoides* and Chaffweed *Centunculus minimus* can both still be found at Stover Country Park and Great Plantation. Heath Fragrant-orchid *Gymnadenia borealis* was known at both Heathfield and Chudleigh Knighton but has not been recorded since 1987 when about 12 plants appeared on a damp corner of Chudleigh Knighton Heath at Dunley Cross following a fire. There are 19<sup>th</sup> century records of *Lycopodiella inundata* from Heathfield and, as noted above, it was probably still at Chudleigh Knighton in 1967. All three species of Sundew *Drosera* spp. were once known at Heathfield but the area where they occurred was bulldozed for housing development in 1967. Slender Marsh-bedstraw *Galium constrictum*, which once occurred at Chudleigh Knighton Heath, its only location in Devon at some distance from the principal British stations in the New Forest, Hampshire, and Oblong-leaved Sundew *Drosera intermedia*, were last seen there in 1971. Both species must have been lost during the development of new ball clay workings around this time. While *Galium constrictum* and the *Drosera* spp. have probably gone forever, it is just possible that *L. inundata* and *Gymnadenia borealis* could reappear. Given suitable management the plant communities on remaining areas of heath should be safe but the wetter areas are very small with little suitable ground for such species as *N. ossifragum* and *R. alba*.

With the exception of *Galium constrictum*, all the plants once known from the Bovey Basin can still be found at other sites in the county. Nevertheless, the Bovey Basin heaths are an important link between Cornwall heaths, Dartmoor, the East Devon Pebblebed Heaths, the Blackdown heaths and on, eastwards, into Dorset and the New Forest.

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