



Searching for the Heath Bush-cricket *Gampsocleis glabra* (Orthoptera: Tettigoniidae) in the Massif Central region of France

Dr Peter G. Sutton (7388)

2 Fir Tree Close, Flitwick, Beds. MK45 1NZ.

Introduction

In a previous article (Sutton: Orthopteroid insects in Southern France, *Bull. Amat. Ent. Soc.* 440, Feb. 2002, pp. 3-10) a variety of Orthopteroid insects found in northern and southern France were described and illustrated. As mentioned in that article, France offers a natural and exciting progression from the study of our own relatively impoverished orthopteran fauna, and its fauna becomes progressively richer as you travel from north to south. The Mediterranean region of France is particularly rewarding, and introduces the orthopterist to some extraordinary species including the huge bush-cricket *Decticus albifrons* and its spectacular predator *Saga pedo*, a fearsome insect that looks something like a cross between a giant stick insect and a praying mantis. Other specialities include the rare and threatened endemic grasshopper, *Prionotropis rhodanica*, which is confined a small and intensely arid area of the Crau region on the Mediterranean coast; and its close cousin, *Prionotropis hystrix*, which is found further east along that coast.

Another special area of France which also has its share of rarities, including a number of endemic species, is the Massif Central region. This area encompasses the stunningly beautiful Cévennes region, which was declared a World Biosphere Reserve by UNESCO in 1985. It was this region that I visited in August 2001 whilst attending the International Conference on Orthopteroid Insects with a view to locating one of Europe's most threatened bush-crickets, *Gampsocleis glabra*. This bush-cricket is known as the Heath Bush-cricket or the Kleine Wrattenbijter (Little Wart-biter) in its northern European territories, reflecting its preference for warm dry heathland at these latitudes. In its southern territories it is found almost exclusively on steppe-like grasslands, the rare exception being dune grassland habitat in the eastern European part of its range. The loss of this species from many of its former haunts in Europe shows clearly that this species is highly sensitive to environmental change, and in point of fact, it appears that heathland in its northernmost outposts has become increasingly unsuitable as a result of habitat change through eutrophication, *i.e.* where the constant deposition of nitrogen from



automotive transport has enriched the soil on heathlands to such an extent that it has encouraged the growth of mosses and other plants, thus effectively removing the bare ground habitat so vital to a large number of heathland species. It is interesting to note that the two remaining sites in north-western Europe: at Oldebroekse Heide in the province of Gelderland in The Netherlands, and on the Lüneburger Heide at Niedersachsen in Germany, appear to have retained this species only because bare ground habitats have been maintained by regular large-scale burning regimes.

The Heath Bush-cricket was formerly found across a broad belt of European countries whose habitats catered for its thermophilic requirements. It has not been recorded from the cooler northern region including the UK and Scandinavia. (It should be noted that there is still a very small population in Poland, perhaps numbering a few hundred individuals on grassland habitat in the Lower Nida River Valley.) Interestingly, this species is absent from the south (Greece, Italy and southern Spain), indicating that either an essential habitat requirement is lost at more southerly latitudes, or that there is competitive conflict with similar species (for example, *G. glabra* is replaced by *G. abbreviata* in Greece.)

Habitat loss, primarily driven by aerial deposition of nitrogen from transport, and agricultural intensification, together with habitat destruction through changing land use *e.g.* afforestation, are the reasons for the much diminished modern status of this increasingly threatened orthopteran¹, and it has become clear that it is now threatened with extinction across Europe.

While the Heath Bush-cricket has been lost from its historical sites in northern France (and at its last site in Belgium), it still has a stronghold in the Massif Central region of southern France. It can be found on dry grassland habitat over bare soil which is characterised by a typical sward height reaching half a metre, and again, crucially, with a virtual absence of moss and leaf litter.

¹ An interesting conversation with Colin Hartley at the recent RES Orthopterists' Meeting revealed his observation that in France, the Wart-biter *Decticus verrucivorus* has apparently become scarce or absent from habitats where it was formerly common, in spite of the fact that the habitat is still present. A closer look at these habitats may reveal the extent to which the problems faced by the Heath Bush-cricket across Europe are also faced by the Wart-biter. Both species are thermophilic and have a requirement for warm areas of bare ground for the successful development of their progeny. If those areas of bare ground have been compromised through the aerial deposition of nitrogen (a relatively recent phenomenon which has increased from its effectively inaugural levels of the 1950s to the present day levels produced by many millions of vehicles), it may be that we have the makings of an explanation. Alternatively, it is widely recognised that the effects of wind-blown agricultural chemicals are far reaching, and these may also have had a hand in this observed loss of biodiversity.



Diary notes

Further to the events described in *Bulletin #440*, Ralph Hobbs and I left Marseille Airport to begin our journey towards the Massif Central where we had arranged to meet up with Roger Hawkins in the Gorges du Tarn area of the Cévennes the following day. This gave us some time to explore the region for its Orthoptera and we anticipated the presence of a number of new species to observe, and the slim possibility of locating the Heath Bush-cricket, now one of the great European rarities.

However, the daylight had escaped whilst we were driving through the rare scenery of the region and we did not reach our campsite until dusk. We set up camp on high ground above a site where the river in the well-wooded valley had carved its way through the stone of the gorge in spectacular fashion, revealing colourful layers of ancient bedrock that were now exposed to the elements.

A walk from the campsite to a café that was still open took us over a bridge crossing the river and up a steep hill. On the way back, a torchlight investigation of a derelict hut produced a small scorpion, but little else; although the warm conditions were perfect for the flying insects which were appreciated by the good numbers of bats that flew around us. As we walked over the bridge, which was probably 40 or so feet above the river, we saw what we thought was a boulder, move. It slowly dawned on us that what we were observing was a huge Beaver in the bright moonlight, a fact confirmed when it disappeared with its shadow into the river. I had no idea that these creatures were so large, and it remained the topic of discussion until we reached the campsite.

Ralph's tent, our shelter for the night, was a heavy old canvas affair and the fact that it was still capable of active service was testimony to the way things were built "back then". Inside the tent you were greeted by a somewhat musty smell, and the various nooks and crannies around its internal periphery suggested that there was always an outside chance of locating a pre-decimal coin.

The day had been long and eventful, and we were all but ready to retire for the night, but a single chirp from some nearby bushes convinced us that we had time for one last torchlight investigation. After we had negotiated a wire fence, the minstrel turned out to be a familiar species, the Dark Bush-cricket *Pholidoptera griseoptera*; which was fairly unexpected since it becomes rarer, by degrees, from north to south in France, and is virtually absent from Mediterranean regions.

The following morning was bright and sunny and I took the opportunity to photograph the scorpion that we had found the night



before. I soon became aware that I was being watched by two somewhat agitated men who appeared to be contemplating how to tell me that the subject of my interest might be harmful to my health. Luckily, Ralph, whose French is far more intelligible than mine, was on hand to explain our interest. Although they seemed fairly unimpressed by our activities, it did manage to halt their imminent intervention, which was very welcome, since the one with the noticeably twitchy boot seemed to be intent on doing me a potentially life-saving favour.

Another old gentleman sporting traditional headwear had watched the whole event with some interest, and rocked to and fro on creaking bones as he scratched his chin. As he moved closer, it became apparent that he had been consuming garlic in the sort of quantity that suggested one's neck required additional protection during the hours of darkness. He laboured over to a small pile of rubble, beckoning me to come and look in a way that implied he was about to reveal one of the world's best kept secrets. Pointing to one of the large stones, he gestured frantically, encouraging me to turn it over. As I did so, a swarming mass of shiny black ants was revealed. "Shhhhhh, Ils travaillent!!!" he hissed as he leant over my left shoulder, issuing forth a garlicky blast that would surely have put paid to Nosferatu himself. "Ils travaillent!!!" he hissed again, pointing and grinning insanely at me between bouts of vigorous nodding as I tried to suck garlic-free air in through the right side of my mouth in a desperate attempt to avoid passing out. I carefully put the stone back to its original position, stood up, shook the gentleman's hand, and thanked him politely for showing me such a wonder. He seemed very pleased with the whole affair, and shuffled off in a manner that suggested that his work for the day had been successfully completed.

Further along the track by the wash-house, a *Buddleia* bush in full flower attracted a variety of insects, including Scarce Swallowtails (*Iphiclides podalirius*) and Silver-washed Fritillaries (*Argynnis paphia*), the large Blue Carpenter Bee (*Xylocopa violacea*), and Hummingbird Hawkmoths (*Macroglossum stellatarum*) all of which were intent on relieving it of its tiny ampoules of nectar.

Once again we set off along the steep winding roads, ever increasing in altitude, towards the Gorges du Tarn. Ahead in the distance was a vast plateau of rock rising from the landscape, which became more and more imposing as we moved into its shadow. So began a long and winding vertical ascent up the face of the plateau, around thin and hairpinned precipices which repeatedly offered the most breathtaking of both downward and panoramic views. When we reached the top of the plateau, which was now approximately 3,000 feet above sea level,



we stopped the car to survey the landscape and the view of south-eastern France that lay before us. A Short-toed Eagle soared for a while above the precipice before focussing its sights on what was probably one of its main food items, a snake, and disappearing into the scrub several hundred yards away.

This was the habitat that we were looking for, long steppe-like grassland with a prevalence of *Stipa* grasses on bare soils. We stopped the car periodically at any promising site and searched for Orthoptera, finding a variety of grasshoppers and bush-cricket, but not our intended quarry. It was a pleasure to be there, and like our previously described trip to the Crau region to find *Prionotropis*, each step was greeted with a display of colour from the pink, red and blue-winged grasshoppers that took to the air, only to vanish instantly upon landing as their cryptic colouration blended with their surroundings. Bolstered by a quick picnic of bread, cheese, olives and tomatoes, we continued our search by car, listening out for clues as the road descended slowly downwards again.

Suddenly, along one stretch, we became aware that the adjacent grassland was producing the continuous loud buzzing that indicated an orthopteran presence. Ralph quickly stopped the car and we jumped out to begin searching for what we hoped it would be. "Found one!" shouted Ralph, and I raced over to see it as it sang among the tall grass stems. What a beauty! We took our time photographing the specimens (Plate 2) that we had found and enjoyed the moment in the heat of the day.

We continued our journey from the plateau, through the magnificent gorges with their amazing views, and stopped to look at the river that was still far below us, shining like a trickle quicksilver in the afternoon sunlight. We watched the Crag Martins display their aerobatic skills for a while before continuing our journey, but nowhere else did we find that same perfect grassland habitat that we had found on the plateau. We had been lucky, and it was a privilege to see this precariously placed bush-cricket in one of its last remaining European haunts. With the protection and management that is hopefully afforded by this World Biosphere Reserve, long may its presence there continue.

