Clive Stacelooks at how DNA
has altered the way we classify plants
and argues it is a change for the better

These assertions are surely incontrovertible

The main advantages and disadvantages of the molecular approach are listed in Tacul

most commonly encountered when nuclear and chloroplast DNA data are compared However various reasons for such di erences are well understood and there can be little doubt that after investigation in each case these will be ascertained and the true classi cation will be revealed This is our experience so far Apparent incongruity can also emerge when the facts have been misrepresented perhaps the sampling was inadequate or the data analysis was faulty The remedy in these situations is obvious and it is a warning to taxonomists that they should not adopt new classi cations until their molecular basis has been fully investigated and understood

'No di erence'

There are several cases in the literature where DNA analyses have not revealed any di erence in the base sequences of two similar species But the conclusion that such pairs of species are molecularly identical and must be amalgamated which has been expressed by some taxonomists in the past is surely erroneous Only a tiny fraction of the DNA has ever been sequenced so we have no idea of the total level of di erence between the two species Examples from the British ora for which this has been claimed are the butter y orchids Platanthera chlorantha and P bifolia and

hybrids especially those made arti cially but in ancient hybrids particularly allopolyploids where the chromosome number has doubled it is often found that only one sequence persists This is