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Sources of error in local lists*

D. E. ALLEN

Lesney Cottage, Middle Road, Winchester, Hants.

ABSTRACT

Examples are given of the many ways in which the compiling of local lists is exposed to error. Because the known hazards are so numerous, it is urged that records be examined more critically. Conventions appropriate to the rectification of errors in print are also reviewed.

INTRODUCTION

'In scientific matters, I consider the correction of a *false* fact . . . more important than the discovery of a *new* fact; inasmuch as *mis*-information is worse than *non*-information.'
(H. C. Watson to C. C. Babington, 17 Dec. 1848: Babington Correspondence, Botany School, Cambridge)

Considering the great amount that has been written over the years on the compiling of local Floras, it is surprising that so little of this has been on the errors that may be encountered. Warren (1875) and Young (1966) are among the few that have published on the subject; and the first of these touches on it no more than marginally. Yet the exposing of mistakes is arguably the single most valuable use to which the special expertise of the local Flora writer or Recorder can be put. Anyone – even the veriest novice, and quite by accident – has the capacity to make additions; but the making of subtractions is an achievement reserved on the whole only for the deeply knowledgeable. The appeal it holds, too, in terms of intellectual gratification is one that is accessible for the most part only to the botanically sophisticated. Demolition is a harsh, unlovely matter: the exploding of a record that has long been in good standing can never compare in popularity with the discovery of a novelty.

Nevertheless it is crucial that compilers of local lists should cultivate the habit of looking backwards as well as forwards. While all are conscious of their elementary responsibility to admit into the store of knowledge only what is certain or at least highly likely, by no means all appreciate sufficiently that this responsibility may not have been discharged all that efficiently by at least some of their predecessors. All workers, however high their reputation, have their taxonomic blind spots. Our understanding of certain groups or species alters over time. The mere accumulation of records in itself provides a steadily finer test of what is to be expected in an area. Much that once seemed unexceptionable may thus, sooner or later, come under suspicion. It is not enough for compilers to watch over the entrance to their lists: they need to conduct searching checks of what has found its way inside already.

SOURCES OF ERROR

To bring home the extent to which errors may creep in, it is only necessary to recall the frightening variety of ways in which we have evidence that they can and do occur. Here are just a few of them.

First, and most obviously, there is misidentification – in the genuine sense. All field botanists, whatever their standard, make mistakes from this cause from time to time. Even the most experienced can be recklessly glib, failing to recognize that they have a wrong idea of certain taxa that they confidently believe they know. Among the more frequent victims of this Higher Confusion are *Arenaria leptoclados, Poa compressa, Potentilla anglica, Sagina ciliata, Trifolium micranthum, Veronica polita*

* Revised version of a paper given at the 1979 Vice-County Recorders' Conference.

and *Viola reichenbachiana*. Records for species such as these, if they come from the otherwise trustworthy, are all too liable to be accepted unblinkingly; yet they are all species notorious for being shakily comprehended, and to pass claims for them without at least some scrutiny can only be unwise.

A particular cause of the Higher Confusion is the natural inclination to rely in the field on just one or two key characters – and these, unfortunately, are not always as dependable as supposed. *Hayward's botanist's pocket book*, which gave the force of codification to what had previously been rough-and-ready, has much to answer for as a result. The use of red twigs as a hallmark of *Salix aurita* is merely one example of how its often ill-chosen streamlining has persistently misled.

In a separate sub-category are misidentifications arrived at by working exclusively from plates. These can be bizarre in the extreme and the correct identity not at all easy to guess at, for the species confused will as often as not be quite unrelated scientifically and the visual resemblance may be largely in the eye of the beholder. Someone who recently startled the British Museum (Natural History) by claiming a garden full of *Orchis militaris* proved to have nothing more exciting after all than *Impatiens glandulifera*. *Cymbalaria muralis* was once misreported in the Isle of Man as *Wahlenbergia hederacea*. More reasonably, one markedly out-of-pattern Manx record of *Mentha pulegium* turned out to be *Calamintha sylvatica* subsp. *ascendens*– rather as in Guernsey *Mimulus moschatus*, 'the locality too secret to be put into print', was found to have done duty for *Parentucellia viscosa* (McClintock 1975).

To novices for the most part are also to be attributed the second class of errors: those arising from the ambiguities in vernacular names. All local Flora writers learn to live with 'Marsh Mallow' (for *Malva sylvestris*, not *Althaea officinalis*) and 'Deadly Nightshade' (for *Solanum dulcamara*, not *Atropa belladonna*.). Other traps, however, are less familiar and a glance through the pages of Britten & Holland (1886) or Grigson (1955) can be a chastening experience in this connection. 'Adder's Tongue', it will be found, may not refer to *Ophioglossum vulgatum* invariably: *Geranium robertianum, Achillea ptarmica, Listera ovata, Orchis mascula* and *Arum maculatum* have all been known as this too. No fewer than 15 different species have gone by the name of 'Bird's Eye'. Even the name 'Lords and Ladies' has been shared by three species.

When those accustomed only to the vernacular names attempt to translate these into their Latin equivalents, further confusion may result. *Erigeron acer* lay unsuspected in the Isle of Man lists for over half a century until the realization dawned (from the congruence of localities) that 'Fleabane' had been converted into this instead of into *Pulicaria dysenterica*. The same Manx botanist who perpetrated that was unaware that 'Bur-marigold' covered more than one species – and unluckily plumped for the wrong one when he looked it up in a Flora. This landed the Isle of Man lists, for the same long period, with their sole record for *Bidens cernua*. Even worse offenders on this score have been Victorian guidebooks, with their pretensions to learnedness but so often with authors unfamiliar with scientific names. One Isle of Man one, presumably mindful of the berries, came up with '*Sambucus edulis*' as the name of the Common Elder. Predictably, a credulous compiler later pounced on this as an almost-correct rendering of *S. ebulus* – and into the Manx lists as that it passed, unchallenged for 60 years. From the same source, even more weirdly, came the double mistranslation of 'Golden Saxifrage' into *Saxifraga oppositifolia*, causing that species to become similarly embedded in the literature by the same uncritical route.

Errors due to genuine misprints, by contrast, have probably always been very few. They might even be non-existent had not British botany come to rely so extensively on vice-county numbers. When a locality appears alongside one of these, any misprint ought not to mislead for very long; but where the number alone is reproduced, as in that notoriously over-hasty work, *The comital Flora of the British Isles*, the result can be lasting uncertainty. Is the '71' that appears therein under *Subularia aquatica*, for instance, a mere printer's slip that was missed – or had G. C. Druce logged a record for that vice-county that no one else has ever been aware of?

Place-names are subject to mistranslation no less than the names of plants. In the days when Floras were written in Latin, Julius Caesar was naturally followed in bestowing '*Mona*' on Anglesey. Unfortunately the Isle of Man was also given this name by Pliny – and the Manx have been the more assiduous in using it. As a result that Anglesey speciality, *Tuberaria guttata*, and another rarity at one time dubiously claimed from there, *Cucubalus baccifer*, have both been credited to the other island as well. Overlooking that a place-name is not unique is probably indeed one of the commonest sources of error of all. Most builders of private herbaria labelled their specimens just for their own personal enlightenment, rarely troubling to ensure that the place-names they employed did not confuse those unfamiliar with the area. When their collections found their way eventually into public

institutions, a good deal of guess work went into the clarifying of the labels. Thus a sheet of *Limonium humile* in **BM** labelled 'Douglas' led to this species being claimed as Manx. On closer scrutiny, however, the locality referred to turned out to be the place of that name in Co. Cork. A third Douglas, in Lanarkshire, procured *Vicia orobus* for the Isle of Man in Watson's *Topographical botany*. The fault here, clearly, is being mesmerised by the familiar: that automatic reflex which once led Druce, for example, to refer to the Isle of Wight a Hampshire specimen plainly labelled 'Alum Chine' (a locality in Bournemouth) because he knew only, and that very well, Alum Bay, by the Needles. Even when a gazetteer is used, it does not necessarily follow that the locality will have been identified correctly – if there is more than one place so named and the label provides no guidance. *Cystopteris fragilis* has been 'added' to the Manx flora in the recent *Atlas of ferns of the British Isles* on the strength of a herbarium sheet bearing the name of a locality which is certainly in that island. Unfortunately (though the gazetteer may not have risen to revealing this) there is a place identically so called in Derbyshire too; and as that is an area where this species occurs in comparative profusion, it is far more likely that that is where the gathering came from.

A more obvious cause of misinterpreted labels is the obscurity of the handwriting. Here a legible hand is a greater danger than near-indecipherability (which at least makes the hasty pause). A squiggle at the end of 'Mitcheldean' on one label led Druce to misread this as 'Micheldever' and so locate the specimen in Hampshire instead of Gloucestershire – an error he then compounded by attributing it to the wrong Hampshire vice-county. In a similar instance, cited by Warren (1875), a wrong county record was created by Warwickshire being misread as Warrington. The danger is greater still where a label has been the subject of transcription by an intermediary. In such cases an extra layer of error has the opportunity of seeping in. There is a particularly striking example of this in Syme (1873), where the Belfast botanist Dr William Mateer, not otherwise known to have collected outside Northern Ireland, is credited with a find of *Lolium remotum* in Sussex. Reference to Syme's herbarium (now in **BM**) reveals two gatherings from this collector, one labelled, doubtless correctly, 'flax fields, Bangor, Down', the other – in another hand – with the locality corrupted to 'Bognor, Devon'. Syme, at that date still unfamiliar with English topography, then converted this in turn into 'Bognor Regis, Sussex'.

Unfamiliar territory is frequently the undoing of the over-confident, particularly where this is territory popular for holidays. When on holiday people tend to record with only half an eye, with non-botanist companions to distract them, and usually without the wherewithal for taking and preserving voucher specimens. Unfortunately unusual territory tends not to harbour usual species – and the risk of wrong assumptions is hardly lessened by the south-eastern bias of so many of the standard works of identification. In the Isle of Man, for example, the commonest species of *Arum, Barbarea, Fumaria* and *Lamium* is in each case not the species that English visitors are accustomed to expect. Islands, indeed, are outstandingly treacherous country for the casual, for they frequently lack even near-universal species. *Mercurialis perennis* was once recorded airily by an extremely experienced worker on his very first visit to Man, on the supposition that the green mass carpeting the thickets that flashed past on the drive from the airport could *only* be that species at the time of year in question. Had he troubled to check in his Flora, however, he would have found that it is altogether missing from the island as a native.

In contrast to these examples of mere carelessness it is possible almost to pardon the errors in the next class: those due to mental lapses. When names are mixed up from this cause, the species in question tend to be within the same family: the mere slips of the pen of the knowledgeable have a telltale rationale in contrast to the purely visual connections made by the novice. Thus a distinguished Kew botanist once wrote down *Lepidium campestre* when he undoubtedly intended *Thlaspi arvense*. In Sussex a record of *Vicia sylvatica* is supposed to have been an aberration for *Lathyrus sylvestris*.

A good deal more reprehensible, by comparison, is mixing up one's data. Absent-mindedness, or the ordinary exigencies of the field, may result in entries made on the wrong card or the wrong notebook page. Localities may be jotted down imprecisely and left untransferred to files till the details are faint in the memory. Often, too, no notes may have been taken at all and memory alone relied on. This perhaps is how it comes about that so many of the Sarnian records are attributed to what seems to be the wrong island (though the use of 'Jersey', loosely, for the Channel Isles as a whole has been a source of stumbles as well). Sometimes, even, compilers may trip over their own feet, disbelieving something that they had down right in the first place. Britten & Boulger (1899) miscopied the surname of Miss Charlotte Wilkins, the discoverer of *Simethis planifolia*, as 'Wilson' and on the strength of their own notes insisted that in the published announcement of that discovery, 'Wilkins' had been a slip. Their assertion has

been repeated in all innocence by Desmond (1977). Yet there is a letter from Miss Wilkins in the Hooker Correspondence at Kew which proves that the name was reproduced quite correctly at the outset.

Another form of muddle that was at one time prevalent was 'mingling specimens and loose labels from different and even distant localities' – with inevitable dire results (Watson 1847). 'One lady-botanist, of well-known name', was identified by Watson as a particular offender in this respect: by her carelessness, he claimed, she had 'thrown into circulation numerous errors, some of which have appeared in print also.' Watson indeed was inclined to dismiss as untrustworthy – though only in part for this reason – all the labels of the Botanical Society of London for the 1836–40 period, before he joined its counsels and was able to bring its exchanges under his meticulous supervision.

A whole new family of mistakes due to documentary muddle has been brought into being by the Distribution Maps Scheme and the subsequent fashion for tetrad recording. These range from the very elementary – the inverting of grid-references and clerical mispunching – to the comparatively esoteric, such as the differential merging of squares. The only known find of *Viola lactea* in the Isle of Man was made in a spot that falls within a ten-kilometre square consisting almost entirely of sea. Some are content to keep such squares distinct for recording purposes, other prefer to combine them with one or other of those adjoining. Unfortunately, through miscommunication, three different courses were adopted at different times for the Manx square in question, with the result that this one *Viola lactea* record is most misleadingly represented in the *Atlas of the British flora* by a threefold group of dots. But probably the most usual mishap of mapping is crossing off the wrong plant on a record-card accidentally. Young (1966) identified three causes of this: 'bad aim' – that is, landing on the line above or below ('bifocals are a trial', he remarks); over-similarities in the abbreviated names; and abbreviations open to misunderstanding. Pairs of names particularly often confused in his experience were '*Agropyr can*' and '*Agrosti can*', '*Stachys pal*' and '*Stellar pal*', and '*Ornitho per*' and '*Ornitho umb*'. Common misunderstandings were '*Juncus com*' (for *J. compressus*) as the Bentham and Hooker aggregate *J. communis* and '*Crat oxy*' (for *Crataegus oxyacanthoides*) as *C. oxyacantha*, the name once used to cover both the British hawthorns indiscriminately.

These last are a useful reminder of the particular subtle hazard constituted by names that were formerly employed in a wider sense. Far more of these 'buried aggregates' are around in the older literature than is commonly realised, for the time when many of them were in use lies so far back in the past that the fact that other species were later split off is now easily overlooked. Records for *Viola lutea* in maritime situations, from the days before *V. tricolor* subsp. *curtisii* was recognized, are unlikely to cause problems; but any very old ones for *Arctium lappa, Lepidium campestre* and *Oenanthe pimpinelloides* may well deceive the unwary in regions where their 'shadow' species are to be expected.

The hardest discipline for any compiler, indeed, is to avoid being hypnotized by names. Names are a *sine qua non* of records and records are his or her working material. The first impulse is always to grasp this handle, therefore, and use it to ease the record into its appropriate slot in the filing system. Yet the handle may be not merely cracked, but attached even to the wrong piece of ware. So great can be the sheer pleasure of compiling to those so disposed by temperament that the overriding need for taxonomic alertness may come to be overlooked. Arthur Bennett (1901) accepted at least one or two new vice-county records for non-critical species on the strength of voucher specimens which, examination of his herbarium (now in **BM**) has since shown, were incorrectly determined. Perhaps his taxonomic ability lacked the necessary comprehensiveness, possibly he was swamped by the sheer mass of material sent to him, more probably he allowed himself to be dazzled by the namings of the confidently authoritative. Many lesser botanists have erred likewise, accepting too obsequiously the pronouncements of supposed experts. Even that special aura which the national institutions have long possessed in this respect has not alway been deserved, for at times they have overlooked that even routine determination requires the knowledge to discern what is not routine: to recognize the inexplicitly critical.

Finally, and suitably at the bottom of the list, there is the all-too-ample category of fraud pure and simple. This takes on an uncomfortable variety of forms. Lowest in the scale of heinousness – for it *may* only be due to oversight – is the attributing of the wrong provenance to specimens. The likeliest motive for this is commercial profit: it is lucky, therefore, that, even in the heyday of private herbaria, outstanding botanical rarities never acquired auction-room price-tags after the manner of shells or Lepidoptera. Even so, rarity did have pecuniary possibilities for professional collectors and nurserymen, and one or two of the latter at least are under strong suspicion of having succumbed. The

one most often accused, rightly or wrongly, is the elder George Don; but James Dickson, similarly respected as a botanist, seems to have been an offender in more than one instance as well. In his series of exsiccatae, *Hortus siccus britannicus*, he was rash enought to distribute specimens of *Tuberaria guttata* bearing the label 'Sandy fields, Isle of Man'. Unluckily for him, this was not only a blind copying of a book error, but his material was glaringly dissimilar from the subsp. *breweri* of all the known stations for the species in Great Britain and Ireland and must therefore have been raised from seed obtained from Channel Isles or Continental populations. In his defence Dickson might have argued that his specimens were intended to be only illustrative of what might be procured in the localities indicated. He could also have pointed to the frequent contemporary vice of copying out the locality from a Flora before obtaining a specimen to grace the sheet reserved for the species in the herbarium (after the manner of many a stamp album). Even so eminent a figure as Professor Robert Graham appears to have stooped to this in the case of *Phyllodoce caerulea*, as from the published accounts of his excursions it seems he never visited any of the places from which his material is localized (Nelson 1977). It is conceivable, too, that some collectors who brought back plants from the wild to join the cultivated stocks in their nurseries or gardens became muddled about what came from where, in all innocence. This is the charitable explanation some have put forward to account for the highly dubious localities attributed to some of his specimens (one or two of species not otherwise known from the British Isles) by the very respectable William Andrews, Chairman for many years of the Natural History Committee of the Royal Dublin Society (Corry 1883, Salmon & Baker 1926). The distribution through the Botanical Society of London by the Plymouth botanist, John Banker of *Allium triquetrum* labelled '*Leucojum aestivum*' and purporting to be from the Isle of Dogs (Syme 1869) is rather more credibly explained in these terms too. At the same time it should not be forgotten that the extra leverage that the submitting of valued desiderata produced in the share-outs of the exchange clubs provided a motive for cheating that was quasi-commercial.

Other, more undoubted forms of fraud range from counterfeiting of records, by planting specimens in the wild and then supposedly discovering them – of which there have been several well-known cases – to that special form of plagiarism which consists in passing off as one's own the records of other workers. Of this T. H. Cooper, the nominal author of early lists for Sussex and Nottinghamshire, has recently been unmasked as a particularly brazen exponent (Allen 1979). So far as is known, though, only one British botanist has descended so low as to fabricate the very specimens themselves. In Jersey there survives a collection in which several of the *Rubus* species, apparently in desperation, have seemingly been concocted from halves of two different ones (the species concerned being unlikely to have been growing intermingled in nature) in an ingenious effort to match authenticated exsiccatae or plates.

This long recital of woes and slips is more than sufficient to demonstrate how thin may be the ice that we are accustomed to place our weight on – and how pertinacious may need to be its testing. Yet the compiler's responsibility does not end just with the identifying of erroneous data. For any error that happens to have been published must also be put through the ritual of exposure publicly. The conventions of scholarship demand that print must be answered by print. It is unacceptable for compilers to suppress by omission: to expect their readers to take on trust that they have combed the literature with proper thoroughness and have found good reasons for not including every earlier published record that fails to find a place in this latest work. However blatant the errors, however obscure the publications they appeared in, it is difficult to see how this fundamental canon can be disregarded, costly though it may be today to correct even the careless trivia of an earlier age of inexpensive print.

At the same time, if the public exposure is to be adequately effective, the deed should surely be performed unmistakably. Records that are not to be relied on should be indicated as such quite clearly – for which purpose the time-honoured square bracket is conveniently available. One recent local Flora snares the unsuspecting reader into long and engrossing accounts of not a few species which turn out only at the end to have no claims to have occurred in the area at all in the first place. The task of rooting out error is beset with difficulty enough without the compiler himself hiding away his own successes in an undergrowth of ambiguity.

REFERENCES

ALLEN, D. E. (1979). The plagiarisms of Thomas Henry Cooper. *J. Soc. Biblphy nat. Hist.*, **9**: 275–279.

BENNETT, A. (1901). *Ulex nanus* in the Isle of Man. *J. Bot., Lond.*, **39**: 244.
BRITTEN, J. & BOULGER, G. S. (1899). *A biographical index of deceased British and Irish botanists. First supplement (1893–97)*. London.
BRITTEN, J. & HOLLAND, R. (1886). *Dictionary of English plant-names*. London.
CORRY, T. H. (1883). *Saxifraga pedatifida* Sm. as a British plant. *J. Bot., Lond.*, **21**: 181.
DESMOND, R. (1977). *Dictionary of British and Irish botanists and horticulturists*. London.
GRIGSON, G. (1955). *The Englishman's flora*. London.
MCCLINTOCK, D. (1975). *The wild flowers of Guernsey*. London.
NELSON, E. C. (1977). The discovery in 1810 and subsequent history of *Phyllodoce caerulea* (L.) Bab. in Scotland. *Western Nat.*, **6**: 45–72.
SALMON, C. E. & BAKER, E. G. (1926). A mysterious *Plantago*. *J. Bot., Lond.*, **64**: 15–16.
SYME, J. T. B. (1869). *English botany*, 3rd ed., **9**: 217. London.
SYME, J. T. B. (1873). *English botany*, 3rd ed., **11**: 202. London.
WARREN, J. L. (1875). On some doubtful species in the Cheshire flora. *J. Bot., Lond.*, **4**: 163–167.
WATSON, H. C. (1847). On the credit-worthiness of the labels distributed from the Botanical Society of London. *Phytologist*, **2**: 1005–1015.
YOUNG, D. P. (1966). Mistakes and how they happen. *Surrey Flora Committee Newsletter*, March 1966.

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