



NatSCA

Natural Sciences Collections Association

<http://www.natsca.org>

Biology Curators Group Newsletter

Title: You'll just have to take my word (or a voucher)...

Author(s): Irwin, T.

Source: Irwin, T. (1985). You'll just have to take my word (or a voucher).... *Biology Curators Group Newsletter*, Vol 4 No 2, 46 - 47.

URL: <http://www.natsca.org/article/1262>

NatSCA supports open access publication as part of its mission is to promote and support natural science collections. NatSCA uses the Creative Commons Attribution License (CCAL) <http://creativecommons.org/licenses/by/2.5/> for all works we publish. Under CCAL authors retain ownership of the copyright for their article, but authors allow anyone to download, reuse, reprint, modify, distribute, and/or copy articles in NatSCA publications, so long as the original authors and source are cited.

YOU'LL JUST HAVE TO TAKE MY WORD (OR A VOUCHER)

"There is a possible conflict between conservation and recording, with voucher material. Those species for which voucher material is often most valuable may well be species regarded as rare. Often such species are local, not rare, and the taking of a few voucher specimens will not affect the population. Species that are genuinely rare are usually large or longer-lived, so that there is more opportunity for a taxonomist to see the living specimen, or to examine a photograph of it."

This statement was part of a pre-print about Validation of Records issued to participants in the recent Biological Recording Forum (London, April 1985). The idea of the pre-prints was to elicit discussion about the problems of biological recording, such as that of conservation vs voucher-collecting. Some discussion on this subject did arise, but I feel that a fuller explanation of my statement might prove helpful to anyone who has doubts about taking a voucher specimen of a 'rare' species.

For many species, voucher specimens are not necessary. Bird records, for instance, are usually accepted on the basis of descriptions. Most British butterflies can be identified from good-quality photographs, and plants are often best left growing so that experts have the opportunity to examine them in the living state. However circumstances often do not permit satisfactory validation by these means, and a recorder will have to decide whether or not to take a voucher specimen. Before going any further, it must be stressed that many plants and animals are protected under the Wildlife and Countryside Act 1981, so that collection of voucher material is not permitted except under licence. Of course there are many more species which are locally or nationally 'rare', but do not have protection under the Act. It is the discovery of these which presents the recorder with a problem.

The important question to ask (and answer) is "Will the collection of voucher material upset the population structure, so that the future of the colony is jeopardised?" To answer this question, it is necessary to understand the biology of the species and its status. Many species produce an excess of offspring because high mortality of immatures normally results in a tiny proportion surviving to reproduce. Where conditions permit, such species can build up large populations very quickly. Collecting voucher material from such populations will not threaten these species. Voucher collection is a relatively unimportant mortality factor.

Alternatively some species produce relatively few offspring, but low mortality ensures that sufficient individuals will mature to continue the population. Such species tend to be long-lived and the low mortality is often due to their large size. Collection of these species represents a comparatively large mortality factor and might well cause the population to fall below a critical level. Some species with a high reproductive potential may have small adult populations. Collection of mature individuals would be inadvisable, but collection of seeds or larvae may be appropriate.

It is important to assess the actual status of a species in a particular area. Some may be very local but extremely abundant. Others may be widespread but very scarce. Often it is the former that are called 'rare', yet they would suffer much less at the hands of collectors. 'Rare' is not only abused as a term to describe distribution. It is also employed to indicate difficulty in finding a species. In this sense, it has little value in understanding the biology of a species or the conservation implications of voucher collection.

On the other hand a species which is easily seen or collected may delude the recorder into thinking it to be 'not rare'. For instance in certain butterfly species all the individuals in a population may be on the wing on a single day. The collection of just a few specimens might reduce the population to a critical level.

Clearly, common sense must be the guiding principle in all of this, but beware the enemy within. Sometimes filling a gap in the collections can seem like common sense! If in doubt, collect a second opinion before the voucher specimen.

Tony Irwin
Castle Museum
Norwich

A response to Geoff Hancock's note (BCG Newsletter 4 (1) p. 29)
on the preservation of insects in alcohol.

In the course of taxonomic work over the last year I have had to examine a large number of caddis larvae which have been fixed and preserved in 70 - 80% industrial methylated spirits in tap water i.e. 'alcohol', for between 0 and 15 years. It is impossible to be precise but the following has been observed.

There is almost immediate loss of any green or yellow colours in the fat body and haemolymph but then up to about five years there is usually little further change. After that time the normally pale straw-coloured unpigmented parts of sclerites become darker and orange while the brown pigment patterns on those sclerites become paler. The overall result is that subtle shading characteristics may be difficult to see in larvae over ten years old. It must be emphasised that chaetotaxy is unaltered and basic patterning shapes are usually discernible. The deterioration may stabilise for I have seen sixty year old caddis larvae which had quite adequate patterning. Two other factors can cause early deterioration of specimens. If the alcohol is too weak at fixation or becomes weak by evaporation specimens tend to rapidly darken and their bodies become very soft and fragile. Caddis larvae stored on open shelves in light airy laboratories can bleach badly in as short a period as four months.

There is a general tendency for caddis larval bodies in alcohol to become soft in the short term then stiffen up after a few years. I have used Pampel's Fluid for fixation and preservation. It is an aqueous solution of alcohol, formaldehyde and acetic acid and though it gives nice firm bodies it causes serious colour changes when used for storage. The propylene phenoxetol system used as instructed seems to produce very poor quality material after only a year or so.

Ian Wallace
Merseyside County Museums,
Liverpool.