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Title: Practical Examples of the Appraisal and Valuation of Natural History Collections

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Collections combine information about places, times, people and species. They represent actual transactions, dated moments in history as valuable as dated letters and contracts in terms of the amount of information can be related to and derived. By using examples from the Midlands of England (UK) and the FENSCORE National Database the author hopes to show how collections have a value in providing new information of a social historical as well as a scientific interest.

There are many aspects that are illustrated and that will repay further study. For example collections represent scientific and personal fashions as well as the pursuit of science. The situation of the collector collecting varies; they may be on holidays, or commuting, or even coming under enemy fire! They may result from a personal part-time hobby or a full-time burning obsession. They may involve extreme personal danger or inspire extreme envy and theft. The paper attempts to show how the study of collections can both pose and answer questions which have great social and historical interest. Why do people collect? Is collecting a sexually dimorphic characteristic?

The sources of collections are also important. The geographical origins illustrate not only the favourite haunts of individual collectors but also, on the wider scale, the extent and wealth of worldwide contacts within the old 'empires' of Europe and the UK in particular. Contacts change over time. Whilst some of these contacts have declined in recent years others have grown; for example the rapidly increasing collections from Eastern Europe and selected third world countries reflect the increase in academic contacts with these areas.

Through this type of analysis the wealth of social data that are explicitly available within collections and some of the implicit connections with the wider social context can be shown, placing natural history collecting and collections more at the centre of worldwide human endeavour.

PRACTICAL EXAMPLES OF THE APPRAISAL AND VALUATION OF NATURAL HISTORY COLLECTIONS.

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Valuation in the natural history area and presentation of the numerical results in an appraisal report depends on a number of considerations. The use of photographs is sometimes the best indicator of what an object is and what it is not.

Examples of how photographs should be taken will be shown and the errors of description without photographs will be described.

THE CULTURE COLLECTION OF ALGAE AND PROTOZOA - A LIVING RESOURCE.

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Abstract

The primary remit of a protist collection, in this case micro-algae and free-living non-pathogenic protozoa, is broadly similar to that of other collections of biological material, that is to act as a depository and to make the material accessible for end-users, effectively a genebank. At the Culture Collection of Algae and Protozoa (CCAP), one of the UK microbial service collections, this involves collecting, maintaining and preserving the protists, and providing viable, authentic, documented cultures and their associated information to the scientific community.

The live cultures form the core of the collection. Their scientific value primarily lies in their current and past use in taxonomic and other research fields and the extensive literature published citing CCAP strain numbers. In terms of conservation of biodiversity, the collection arguably encompasses one of the largest degrees of biodiversity which can be found in any collection or genebank. This is particularly true for the algal collection which currently includes representatives of 50% of the algal species lodged in culture collections worldwide. They are also widely employed in teaching science at both secondary and tertiary levels of education.

The commercial value of cultures is more difficult to quantify. For those which are regularly employed commercially eg. *Selenastrum capricornutum* CCAP 278/4, which is used in ecotoxicity testing, a value could be calculated using its potential income generation from sales. Other commercially used organisms eg. those screened for novel pharmaceuticals, have the potential to generate substantial income, however the likelihood of a product being developed is low, even where pharmaceutical activities are observed. Most strains held in any major collection are probably of little direct commercial value, however, their scientific value and the costs which would be incurred in replacing the culture should it then be required demonstrates the necessity for their retention in the collection.

This paper discusses the above points in fuller detail and also focuses on the additional implications of maintaining a culture in a live or a preserved state.

Introduction.

The Culture Collection of Algae and Protozoa (CCAP) was founded by Professor Ernst Pringsheim at the Botanical Institute of the German University of Prague in the 1920's. Pringsheim and his cultures moved to England in the 1930's where the collection was enlarged and eventually taken over by E. A. George for Cambridge University. In 1970 these cultures formed the nucleus of the Culture Centre of Algae and Protozoa at Cambridge, financed by the Natural Environment Research Council (NERC). In 1986 the cultures and their associated activities were transferred to the Institute of Freshwater Ecology (IFE) Windermere laboratory (freshwater algae and all protozoa) and Dunstaffnage Marine Laboratory (DML) near Oban (marine algae). The CCAP currently maintains approximately 2000 strains of algae and protozoa at these two sites.

This paper discusses the various roles and functions of CCAP, a protist culture collection. Both primary and secondary roles of the collection and its associated scientists are detailed. The commercial, educational and scientific value of the algae and protozoa retained are also discussed. In the final section, future developments and the merits of maintaining a collection in a live or preserved state are discussed.