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"THE CARE OF THE COLLECTION"

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Shell collections are usually made either because of the beauty of colour and variety of form of shells without any regard to science, or because the collector is or wants to become a conchologist. This paper relates only to collections in the second category.

Forming a Collection.

On the question of whether one should begin by specializing in only one or more genera, or by aiming at a general collection, we can only quote, with gratitude, the advice given long ago by the late J.R. le B. Tomlin to one of the present authors, namely "Begin with a general collection. It will give you a far greater grasp of conchology than you can get from specializing, which you can always do later".

Normally, a collection is built up in the following ways:-

(i) Field work. This is a subject in itself and it will not be developed here. The collector must learn to know the sites and seasons for exploration and the gear, such as bottles, tubes, boxes, dredge, notebook, etc., that he must carry. Participation in the Society's field excursions is an excellent way of getting experience, and better than any written instructions.

(ii) Exchange carries responsibility for both parties in that each risks his reputation for accuracy (and honesty) so be sure that with anything that you offer you send accurate data on naming and locality and limit your exchanges to people whom you consider to be reliable. To ensure pre-knowledge of good data, it is best to exchange written lists before actually exchanging shells. Be sure that your parcels are very carefully packed.

(iii) Purchase or gift. Named shells with reliable data can be obtained from dealers, mostly overseas, and unnamed shells may be picked up in "junk" shops and the like, which brings us to the question of whether any shell without full data should have a place in a collection.

In the view of the present writers, a shell which can be identified, but with no data, is better than no shell at all. If one were fortunate enough to spot an orange cowry offered for a few pence, as the writers have done, but with no data at all, surely it would be sensible to place it in the collection, and similarly with less valuable finds. However, avoid cluttering your collection with specimens of which you know neither the names or the localities.

Sometimes one acquires an old collection, often dirty, in disarray and with loose mixed-up labels, and such a find is both a challenge to one's knowledge and an opportunity for research. Cleaning, detaching from mounts, the study of scripts on labels, and identification must follow such an acquisition, but much valuable material, either for the collection or exchange, may be the result.

Treatment of Specimens.

Molluscs should be collected alive and in perfect condition, and the shells systematically cleaned out and dried. This is best done by dropping them into boiling water and leaving them there for a few seconds, after which the animal tissues can usually be easily removed with tweezers, a pin, or a small knife. Pins of various sizes may be twisted spirally with a pair of pliers so as to penetrate most shapes of shells. A small hook can be made on the tip by heating the pin in a gas flame, and then pressing to the required shape on a hard object such as a coin.

Experience alone will be your guide in treatment. In difficult cases or small transparent gastropods, the tissues can be dissolved out with dilute caustic soda, but the immersion should be brief because the alkali will attack the shell rather quickly. A trial treatment of a few valueless specimens will help in learning the knack. Very small species, such as the Rissoidae or some of the minute Hydrobiidae, are best treated by immersing them in alcohol to de-hydrate them partially, and then allowing them to dry out thoroughly in a warm place.

Incrustations, residues of old adhesive from mounting tablets, stains and dirt may be removed by washing with detergent and gentle work with a knife and an old tooth-brush, but care should be taken never to remove any of the periostracum. On no account should a shell be polished or ground off - if the lip of a specimen is broken, leave it so and do not attempt to grind it level. The surface and colour of a dull shell may be brought up by vaseline applied very sparingly and then rubbed off, but varnish should never be applied to a shell, however bad its surface condition may be.

Slugs and the soft parts of other molluscs, may be preserved for the collection by relaxing them by drowning for a day and then storing them in a mixture of 70% alcohol and water, plus a little added glycerine. For operculates, the operculum should be lightly gummed on to a tight pad of cotton-wool inserted in the mouth of the shell, care being taken to ensure that the operculum is in its natural position and with the correct side outwards.

Identifying Specimens.

Identification is probably the hardest and best drill in the making of a conchologist, and his choice lies between two roads - that of literature, and that of comparison with reference collections. The former clearly depends on the literature that the collector has at his disposal, and it may be added that every serious collector should try gradually to build up his own library. As to the latter, the national collection at South Kensington is unrivalled, but other museum collections are good runners-up.

As a useful alternative to museum visits, one may be able to seek the advice of fellow conchologists, either by correspondence or by examination and discussion of their collections.

Diagnosis of species can be very hard work, involving, as it does, not only familiarity with taxonomy, but also keen perception, and the knowledge of very special terminology. The following are a few useful aids.

R. Winckworth, "The British Marine Mollusca", J.Conch. 19, 1932 et seq. A.E.Ellis "British Snails", Clarendon Press, reprint with additions to be published shortly. Iredale & O'Donoghue, Proc. malac. Soc. Lond. 15. (1932). T. Pain "A Short Glossary of Molluscan Terms." Conchological Society's "Papers for Students" No. 4. Although it is difficult to get, we suggest, B. & T. Burch's massive illustrated glossaries of terms which include those for the soft parts of molluscs and are published in Minutes of the Conchological Club of South California, No. 59, April 1946 and No. 105, November 1950. E. Step, "Shell Life" (Warne) of which a new edition is to be published shortly. N. Tebble "British Bivalve Shells" (B.M.N.H.)

Housing and Storing.

Cabinets, preferably with drawers of graded depths, are the optimum but they are expensive unless, perchance, offered second-hand at auctions. Alternatively, you can use an enclosed book-case or a chest of drawers, for either of which trays with stout card or plywood bases and thin wooden sides of the requisite depth can be made without difficulty. As a last resort, you can use drapers' stout card dress boxes, but whatever system you use, a label on each drawer or box should show clearly the names of the genera within.

Large shells are always a storage problem, and are best put in special deep drawers or boxes, several genera together.

With regard to housing the collection as a whole, individual species should be stored in glass-topped boxes or glass tubes. Shells should never be left loose or in open trays, for these methods collect dust and carry the grave risk of chaos if a trayfull should be inadvertently dropped. Also, because of dust and the risk of damage, shells should not be mounted on un-protected card or wooden mounts.

Glass-top boxes are neither easy to find or cheap, but transparent plastic boxes can be obtained from Alfred Stanley & Sons Ltd., Wednesday Road, Walsall, Staffs., from whom details of sizes and conditions of sale may be obtained.

Small flat-bottomed glass tubes with corks can be bought at most chemists, and their tendency to roll about can be cured by pushing a piece of fine wire through the cork and leaving it projecting about $\frac{1}{8}$ inch on either side. Minute shells may be put loosely beneath a plug of cotton wool in a tube, or, if there are only a few specimens, they may be gummed in various attitudes on one side of a slip of card, the other side of which bears the labelling. Such slips should be slightly narrower than the bore of the tubes, and be pushed into a slot about $\frac{1}{8}$ inch deep cut in the cork.

Glazing ready-made jewellers', confectionery and other card boxes is not difficult and only needs a glass cutter and a supply of this glass which can often be obtained in old picture frames at jumble sales or "junk" shops. This glass should be used, and not the usual 25 oz. or heavier kind used for windows.

The procedure is:- Invert the lid on a stout sheet of card, and with the point of a sharp pen-knife cut out the top, leaving the rim intact. With scissors, cut off any 'fluff' from the rim and the severed top. Place the trimmed top under a sheet of glass to guide the cutter, and allowing for half the width of the cutter head. Not much pressure is needed, and one stroke of the cutter for each cut should suffice. Then by tapping the glass with the cutter on the underside it should fall apart cleanly. Success will come with a little practice. Lastly, clean the shaped piece, press it into the rim of the box, and secure it with lantern slide binding strip or with scored passe-partout previously cut to the right width, depending on the depth of the rim.

Pill boxes can be neatly 'Glazed' by pushing out the top disk of the lid, leaving the circular collar, arranging the shell and label on cotton wool inside the box, covering these with thin cellophane with a generous overlap all round, and finally pressing down the collar over the lot, thus drawing the cellophane tightly over the shell and label.

White or lightly-hued shells look best on black cotton wool and dark specimens on white. Black wool is best obtained from the drapers in the form of black sheet wadding, sold by the yard, but as this material varies considerably in tint, you may have to try more shops than one before you find something sufficiently dark. For rectangular boxes cut sufficient layers of wadding to give the required depth and strip off the smooth skin of the wool before inserting it for otherwise it tends to lie unevenly in the box.

In the old days, when glass-top boxes were cheap, they were made in standard sizes so that by choosing multiple sizes one could pack them into a drawer without leaving any vacant spaces, but nowadays one has to press into service such boxes as one can obtain or make and it is not easy to fill a tray or drawer neatly

Labelling.

Each lot in the collection should have a clear label within the box or tube, written in Indian ink (for permanence) with a mapping pen on dead white card, preferably with a laid surface, as often found in

Christmas cards. Never put the label on the outside of the container lest dust or friction make it deteriorate, and avoid the practice of writing the data on the underside of your boxes; as far as possible both shells and label should be visible together without fumbling.

Usually there is only room on a box or tube label for the serial number (see below under recording) genus, species and locality of the specimen and, indeed, it is undesirable that a label should be overcrowded with too much small writing. Detailed information, therefore, should be entered in the catalogue or other records for the collection.

Large unboxed specimens may have their labels affixed inside them by adhesive or cello tape.

You may acquire shells already labelled and in this case always keep the labels, putting them under the wool in the box or tube, for they may be valuable reference material, particularly if they are old. For instance, a label from the dealers Sowerby and Fulton, or Tomlin or the Bülow collection is usually presumptive evidence that the specimen is correctly named, besides showing you its origin. With practice one learns to recognise hand-writings on ready-made labels and even gets historical information from them. Nevertheless, a ready-made label should not be accepted as accurate until its information has been verified as far as possible.

Recording.

The owner of a small collection will know what he has, and probably has some notes relating to his shells, but as the collection grows, memory alone does not suffice, and some system must be devised whereby not only the owner but also anyone else into whose possession the collection may subsequently pass will be able easily and quickly to find any given species and all the information relating to it. In other words, the collection should be its own guide without the assistance of anybody's memory.

The labels, as already indicated, will convey some information but any data beyond that should be recorded elsewhere. A central catalogue with appropriate headings may be used for this, or some form of notebook supplementing a simpler catalogue may be used. Clearly, there are many ways of recording data, and you may prefer your own, but in case it may be of interest to others, here is the practice of one of the present writers:-

(1) Starting from No. 1, each new accession is numbered consecutively. This has the incidental advantages of showing whether the acquisition of the specimen is a recent or old one, and what the total number of specimens in the collection is - two concessions, perhaps, to mere vanity and the pride of possession.

(2) The main catalogue is a series of loose-leaf volumes, each page of which is headed with the family, genus, sub-genus or sections to which it relates. There are columns for the species in the collection, their localities, origins and serial numbers. Such features such as Juveniles, Paratypes, Topotypes, etc., are also brought out.

An extract from a sample page follows :-

	Section 1 Haliotis " 2 Teinotis	Section 3 Padollus " 4 Sulculus	HALIOTIS cont'd. p.3 Family Haliotidae.	
	1 fulgens (Phil.)	Magdalena Bay, W. Coast of Mexico	G.L.Wilkins	12085
	1 supertexta (Lischke)	Kematura, Sagami Prov. Japan, <u>PARATYPE</u>	Col. Peile Coll. (ex.Gooch Coll.)	12135
	1 ziczac (Rve.) = glabra (Chem.) var.	Andamans.	Col. Peile (ex.Coll. W.Wilmer)	12137
See also p.2	4 naevosa (Mart.)	Pt. Darwin. <u>JUVS.</u>	Lombe Taylor Coll	996A
See also P.1	1 tuberculata (Lin.)	Guernsey. <u>JUVS.</u>	Collected. A.B. Aug. 1937	108B

The A and B numbers indicate separate lots of the same species, for it is good to have a range of specimens to show variability of colour, form and locality.

(3) A separate record amplifies the information in the fourth Column (origin) examples being:- "Cypraeidae. Species marked S have been verified by F.A.Schilder". "Ex. the residues of the Bülow collection, which were sold at Stevens Auction Rooms, Covent Garden, London, in sale No.13532, May 1920". "Lombe Taylor = ex. coll. of Thos. Lombe Taylor of Starston, Norfolk. He is said to have purchased most of his material from Sowerby and Fulton". "I collected these at the Southern end of Lake Tiberias, Feby, 1925". Such additional items of information add to the value of the collection.

(4) Because the collection mentioned above by way of example is rather large - some 12,800 species housed in 25 cabinets, large and small, and several store boxes - there is a separate alphabetical guide showing the cabinet and drawer, or box, in which any given genus or section thereof will be found. A sample extract of this is:-

	Cabinet L	Drawer 25
Negulus		
Nenia. See Clausilia		
Neobeliscus	" (B	" Lft.6
	" (M	" 5
Neocyclotus (=Aperostoma)	" (B	" Rt.14
Neocglessula	" (X	" 4

Obviously a drawer guide like this is only needed for a large collection and the choice of loose-leaf books in preference to index cards is one of personal taste only. But some way or other of keeping records should be regarded as an essential accompaniment to a collection.

Sub-Collections.

Finally, reference should be made to some interesting "sideshows" that may be built up concurrently with the main collection. If one has a microscope, a collection of radulae is very desirable, and good radular slides may still be picked up occasionally at reasonable prices. Other lines are molluscan eggs, univalve shells ground away to show their internal structure (not a difficult process), self-repairs and broken shells of live inhabitants, malformations, commensals, disguises and results of attack by enemies. An alert collector will frequently encounter examples under one or other of these headings, all of which lead to a better understanding of the mollusca.

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