A LIST

OF

LAND AND FRESHWATER SHELLS,

FOUND AT SUTTON COLDFIELD,

BY

ALBERT WOOD,

(MEMBER OF THE CONCHOLOGICAL SOCIETY AND VESEY CLUB).

LEEDS:

TAYLOR BROTHERS, SOVEREIGN STREET.

1897.

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VESEY CLUB

DOMINUS MIHI ADJUTOR

SUTTON COLDFIELD

Dedication:

TO

MY FELLOW-MEMBERS OF THE VESEY CLUB,

THIS LIST IS

RESPECTFULLY DEDICATED

IN GRATEFUL RECOGNITION OF THE MANY PLEASANT AND

INTELLECTUAL HOURS SPENT IN THEIR SOCIETY

BY

THE AUTHOR.

A

LIST OF

LAND AND FRESH WATER SHELLS

FOUND AT

SUTTON COLDFIELD.

By ALBERT WOOD,

(Member of Conchological Society and Vesey Club).

THE intimate relationship existing between the Geology and Conchology of any given district is perhaps more marked than a casual observer would expect, and it is not until you actually begin to seek for snails in Sutton Park that you perceive their absence, and are then led to ask *why?*

Mr. C. J. Gilbert, in his capital paper on the Geology of Sutton Coldfield* says:—"I may be permitted to acknowledge the debt which Geology owes to the Botanist. I look upon these as truly twin sciences, there are many problems in Geology which a better knowledge of Botany

* Read before the Vesey Club, April 9th, 1890.

will help to solve. It is the Geology which determines the Botany and the Botany in its turn lights up the records of Geology.'

Now please bracket Conchology with Botany and make it a triple alliance and I will rest content. I spent many pleasant days and weeks looking for land shells, in the woods and on the heaths of our lovely park, but all in vain, there are none, and simply because there is no lime or chalk for them to build up their shell with. The whole area is covered with a sheet of conglomerate and sand, containing but a small portion of calcareous or carboniferous matter, hence the paucity of land snails, the few we find in the district are invariably in the neighbourhood of houses or gardens where lime has been more or less freely employed.

The same mode of reasoning will apply to the slugs for we find their internal " shells " are much thinner and softer than those taken from a carboniferous district like Dudley.

With the Freshwater Mollusca we have a different set of conditions. The water in running over and filtering through these beds of conglomerate, carries with it the available carboniferous matter, and so supplies to the aquatics the requisite materials for their shell structure. So the local conchologist will have to content himself with the Freshwater Mollusca, and I can confidently say he will be amply repaid for any amount of exertion he may feel inclined to expend in their pursuit. Every pool fairly swarms with various forms of molluscan life, many of which are considered rare, and all are beautiful.

Now please refer to the list of land shells appended, and you will notice the great preponderance of species in one locality (Mr. Thickbroom's woodyard). This is entirely owing to the constant arrival of timber from other districts bringing fresh supplies of eggs or young, coupled with the fact that this area has undergone many physical transformations; for many years the site of a bayonet grinding mill, then forge and rolling mill, and for 150 years a timber yard and saw mill, and now abounding in old stumps of trees tangled with nettles and coarse herbage, together with a liberal supply of old building materials.

In conclusion please understand this list is not put forward as a complete record of the district, as it will require years to dredge and examine the one hundred or so acres of water comprised within the Borough bounds, so there is ample scope for any amount of intelligent and diligent pursuit.

Through the courtesy of the Borough Surveyor, C. F. Marston, Esq., A.M.I.C.E., I am enabled to append the following table showing the approximate acreage of the various pools within the Borough—of half-an-acre and upwards in extent—the first eleven only of which have been examined for the purpose of this paper.

	a.	r.	p.
Blackroot Pool	12	0	17
Bracebridge pool	16	1	29
Windley Pool	10	1	13
Longmore Pool	7	3	16
Keepers Pool	2	0	37
Spademill or Powell's Pool	28	2	34
Mr. Elliot's Park House Pool	0	2	19
Crystal Palace Pools	1	2	1
Hill Hook Mill Pool	3	2	17
Hill Hook Marlpits	1	1	7
Skinners Pool	0	2	12
Holland Pool	2	1	14
New Hall Moat and Pool	0	3	6
Pens Pool	6	3	5
Moor Hall Pool	1	0	19
Foxhill House Pool...	0	3	4
Lindridge Pool	3	2	37
Langley Pool	5	1	19
Langley Hall Pool and Moat	1	3	26
Peddimore Hall Pool and Moat	0	3	25
Total	109	0	7

Finally let me express my thanks to the various owners, lessees and tenants of the pools already examined, for the use of boats and other facilities so readily granted. To the late and much-lamented Mr. Elliot whose ever genial smile and cordial welcome, did so much to neutralize one's sense of intrusion. To Mr. Marston, Mr. Townshend, Mr. Done, Mr. Pinfold, also to Mr. Thickbroom for permission to turn over the stumps and logs, etc., in his woodyard, and to the various other friends for their kind interest and encouragement.

MIDLAND LODGE,
SUTTON COLDFIELD, 1897.

LIST OF FRESH WATER SHELLS FOUND AT SUTTON COLDFIELD. ‡ Introduced 1896, as Skinners pool, the only *local* habitat, is being filled up.	Blackroot Pool.	Bracebridge Pool.	Windley Pool and Brook.	Longmore Pool.	Keepers Pool.	Spademill Pool.	Mr. Elliot's Pool.	Crystal Palace Pools and Brook.	Hill Hook Mill Pool and Brook.	Hill Hook Marlpits.	Skinners Pool.
Sphærium corneum *L.*... ...	×	×	×	×	×	×	×	×		×	×
S. corneum v. flavescens *Macgill.*									×		
S. corneum v. nucleus *Stud.* ...									×		
S. corneum v. scaldiana *Norm.*		×			×						
S. corneum v. minor			×								
Sphærium lacustre *Mull.* ...										×	
S. lacustre v. brochoniana *Bourg.*										×	
Pisidium amnicum *Mull.* ...	×	×	×				×	×			
Pisidium fontinale *Drap.* ...	×	×	×	×	×		×	×	×	×	
P. fontinale v. henslowana *Shepp.*	×	×	×		×			×	×	×	
P. fontinale v pulchella *Jenyns*			×		×						
Pisidium pusillum *Gmelin.* ...		×				×	×	×	×	×	×
P. pusillum v. obtusalis *Lam.*...		×					×	×	×	×	
Pisidium nitidum *Jen.*... ...									×	×	
Pisidium milium *Held*.... ...	×	×	×		×	×	×	×	×	×	×
Unio pictorum *L.*		‡			‡						×
U. pictorum v. latior *Jeff.** ...											×
Anodonta cygnea *L.*	×	×	×			×			×		×
A. cygnea v. arenaria *Schröter.*		×							×		
A. cygnea v. radiata *Mull.* ...		×									
Anodonta anatina *L.*	×		×	×		×				×	
A. anatina v. ventricosa *C. Pfr.*				×		×					
Bythinia tentaculata *L.* ...	×		×	×			×	×	×	×	×
B. tentaculata v. picta... ...									×	×	
B. tentaculata v. rufescens ...									×	×	
B. tentaculata v. decollatum *Jeff.*							×				
Valvata piscinalis *Mull.* ...		×	×				×	×			×
Planorbis nitidus *Jeff.*	×	×	×	×	×	×	×		×	×	
P. nitidus v. albida *Nelson* ...		×							×	×	

* Several measured $2\frac{1}{8} \times 5$ inches.

LIST OF FRESH WATER SHELLS FOUND AT SUTTON COLDFIELD. (*continued*).	Blackroot Pool.	Bracebridge Pool.	Windley Pool and Brook.	Longmore Pool.	Keepers Pool.	Spademill Pool.	Mr. Elliot's Pool.	Crystal Palace Pools and Brook.	Hill Hook Mill Pool and Brook.	Hill Hook Marlpits.	Skinners Pool.
Planorbis nautileus *L.*	×	×	×	×	×		×		×	×	
P. nautileus v. crista *L.* ...		×		×					×	×	
Planorbis albus *L.*	×	×	×	×	×	×	×	×	×	×	
Planorbis spirorbis *Mull.* ...			×						×	×	
P. spirorbis m. turricula ...										1	
P. spirorbis m. scalariforme *Tay.*									1		
Planorbis vortex *L.*	×	×	×	×	×	×	×	×			×
Planorbis carinatus *Mull.* ...	×	×	×		×			×	×		
Planorbis marginatus	×	×	×			×		×			×
Planorbis contortus *L.*			×							×	
Physa fontinalis *L.*	×	×	×		×	×	×	×	×		
Limnæa peregra (vars.) *Mull.* ...	×	×	×	×	×	×	×	×		×	×
L. peregra v. labiosa *Jeff.* ...					×						
Limnæa auricularia *L.*				×		×			×		
Limnæa stagnalis *L.*	×	×	×		×			×		×	
L. stagnalis var.								×			
Limnæa palustris *Mull.* ...				1	1					1	
Limnæa truncatula *Mull.* ...		×	×					×			
Velletia lacustris *L.*	×		×								
Ancylus fluviatilis *Mull.* ...	×	×	×	×			×	×			
A. fluviatilis v. albida *Jeff.* ...									×		
Succinea (on reeds)	×	×	×	×					×		

LAND SHELLS AND SLUGS FOUND AT SUTTON COLDFIELD.	Thickbroom's Woodyard, Windley District.	Hill District, Lanes and Hedgebanks.	Manor Hill District, Gardens and Hedges.	Rectory and Holland Road, Hedge Banks.	Bracebridge Cottage, Outhouses and Garden.
Arion ater *L.*...	×		×		×
Arion hortensis *Fér.*...	×				×
Arion subfuscus *Drap.*	×				×
Arion circumscriptus *Johnst.* ...	×				
Limax maximus *L.*	×				×
Agriolimax agrestis *L.*	×	×	×	×	×
Agriolimax lævis *Mull.*	×				
Vitrina pellucida *Mull.*	×				
Hyalinia cellaria *Mull.*	×				×
Hyalinia helvetica *Blum.*	×				
Hyalinia alliaria *Miller*	×				
Hyalinia nitidula *Drap.*	×	×			×
Hyalinia pura *Alder*...	×			×	
Helix rotundata *Mull.*	×	×		×	×
Helix aspersa *Mull.*	×		×		
Helix nemoralis *L.*	×	×		×	×
Helix hortensis *Mull.*	×		×	×	
Helix hispida v. hispidosa *Mousson.*	×		×	×	
Azeca tridens *Pult.*				×	
Cochlicopa lubrica *Mull.*	×			×	
(Succinea) see Fresh Water List. ...					

ON TWO REMARKABLE ATAVIC SPECIMENS OF *PLANORBIS SPIRORBIS* Müll.

By JOHN W. TAYLOR, F.L.S.

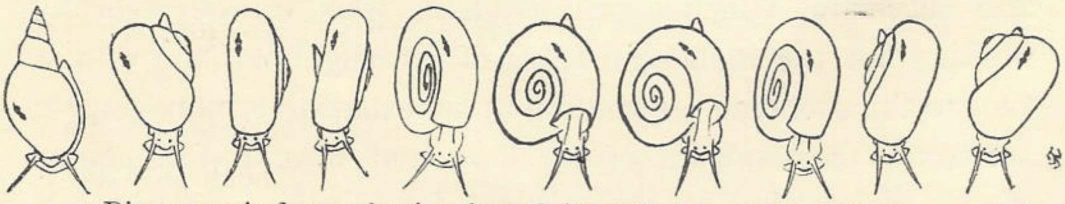
(Read before the Leeds Branch of the Conchological Society, March 20th, 1897).

Mr. Albert Wood, of Sutton Coldfield, a most enthusiastic and successful conchological student, who is systematically working out the molluscan fauna of his neighbourhood with a view to the eventual preparation of an exhaustive monographic account of the mollusca of the Park, and who, in furtherance of this object, has recently issued for private circulation an interesting epitome of the results he has attained up to the present time, has been fortunate enough to find almost simultaneously the two remarkable shells of *Planorbis spirorbis*, which form the subject of the present note, and are probably by far the most interesting specimens that have up to the present time rewarded his investigations.

These specimens are of great interest, one being sinistrally and the other dextrally coiled ; but a careful study of their peculiarities shows both shells to be atavistic or reversions to the ancestral or primitive type of the species, as in this and similar carinate species we are able by a critical examination of the shell to confidently proclaim the mode of organization of the animal forming it, and by applying our knowledge to these two special cases we see the sinistral specimen to be a reversion to the original coiling natural to the species and in accord with its sinistrally organized inhabitant, while the dextral shell is a reversed monstrosity of the orthostrophically sinistral form.

For those who have not studied the subject it may be necessary to state that the *Planorbes* are sinistrally organized animals, primitively possessed of sinistrally coiled shells, but by the peculiar modification or specialization, known as hyperstrophy, the shell has become a dextral one, this change, however, not affecting the sinistral organization of the animal.

In the chapter upon Hyperstrophy in my "Monograph of the Land and Freshwater Mollusca of the British Isles," p. 110 *et seq.*, I have fully discussed the various modes of coiling to which the shells of *Planorbis* are liable, and shown that theoretically there are four possible modes of convolution, viz.: the simply dextral and simply sinistral coiling and the sinistral and dextral convolution due to atavism or reversion.



Diagrammatic figures showing the probable mode by which a sinistrally organized mollusk with a sinistral shell, as the primitive *Planorbis*, may become possessed of a dextrally coiled shell, although the contained animal retains its sinistral organization, as is evidenced by the heart persisting in its position on the right side of the body, as shown in the figures, and also by the sinistral position of the respiratory and other orifices.

The simply dextral or normal form of the species has arisen by hyperstrophic growth from the orthostrophically sinistral ancestor, the simply sinistral form being merely a reversed monstrosity of the type, the animal inhabitants being organized in a manner contradictory to that of their shells, the dextral specimens having sinistrally organized animals, and the simply sinistral monstrosities being tenanted by dextral animals, this anomaly being owing to the hyperstrophic growth which by transposing the relative positions of the apex and base of the shells changes the dextral shells to sinistral ones, and *vice versa*, without affecting the organization of the animal.

The atavic sinistrally coiled shells are reversions to the primitive form, and the atavic dextral shells the reversed monstrosity. These forms are due to a reversal of the hyperstrophic process and results in the original sinistral shell being reacquired and the animal again becoming in harmony with its shell.

Reversal in the direction of the coiling when not acquired by hyperstrophic growth or by atavism, is always accompanied by a corresponding reversal of the organization of the animal; the sinistral and dextral monstrosities of various species that are met with are usually of this character.

The **sinistral** *Planorbis spirorbis* found by Mr. Wood, was obtained early in December, 1896, from the overflow stream of the mill pool at Hill Hook, Sutton Coldfield. This stream is very clear, sustaining a rich vegetation, chiefly water-starwort and watercress, while the bed of the stream is thickly strewn with valves of *Pisidia* and *Sph. corneum*, var. *flavescens*.

Atavic Sinistral monstrosity of *Planorbis spirorbis* Müll. × 6, Hill Hook Mill Stream, Sutton Coldfield.

A careful study of this sinistral shell shows that it is not simply a reversed corkscrew monstrosity of the ordinary dextral form, with a dextral animal for its occupant, but a specimen whose peculiarities have arisen by a reversal of the hyperstrophic process, and which therefore represents the original orthostrophic form of the species, the animal being a sinistrally organized animal within a sinistrally coiled shell.

The **dextral** turreted specimen was obtained from the waters of an old marl pit, at Hill Hook, about the same time as the sinistral specimen, and is a much more interesting and remarkable shell.

Atavic Dextral monstrosity of *Planorbis spirorbis* Müll. × 6, MarlPit, Hill Hook, Sutton Coldfield.

To a superficial observer, the shell might be supposed to be merely a turreted monstrosity of the ordinary dextral form of the species, but like the sinistral specimen, this is also shown on critical examination to owe its chief peculiarity to this reversion to the ancient type, the primitively sinistral coiling having become reversed, as the shell has undoubtedly been formed by a dextrally organized animal, which has thus a shell coiled in harmony with the structure of the animal, proving it to be a dextral monstrosity of the atavic sinistral form.

In my discussion of this subject (*t. c.*, p. 112) I pointed out that of the four theoretically possible modes of convolution, only three were at that time known to exist, but this blank in our knowledge is now filled up by the discovery of this atavistically dextral form, which is, so far as I know, quite unique.