A CHECKLIST AND REVIEW OF

STONEWORT RECORDS (CHARACEAE)

FOR WATSONIAN S E YORKSHIRE (VC61)

PRE-2020 DRAFT

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Introduction

There appears not to have ever been a checklist of stoneworts specific to vc61. The earliest published list, comprising only eight taxa, was included in Robinson 1902. There was no listing of stoneworts in Crackles, 1990 and they were not included in the compilation of Preston, Pearman and Dines, 2002 (Atlas 2000 project). Work is currently underway by the Botanical Society of Britain and Ireland (BSBI) to publish a 20-year update of Atlas 2000, which will include stoneworts recorded since 2000.

By not including stoneworts in Atlas 2000 an opportunity to demonstrate a century of recording history in vc61, although sparse, was missed. I had researched all known available local sources for records since 1902 and had started to look for, identify and publish records of taxa collected myself, in a history flourishing from the mid 1990s. Botanists from across Yorkshire (see Contributors) have sent material to me for identification since 2000, and records have been published by Henderson, and latterly by Henderson & Cook, in Bulletin of the Yorkshire Naturalists Union, and more recently by the BSBI.

The opportunity is now open to publish stonewort records 'centrally' in 2020 but recording in this niche field is still chaotic with records being submitted to different recording databases including some not referred to nominated BSBI recorders for verification before acceptance. These have escaped my attention and make this compilation incomplete.

This checklist and review pieces together records that have been published locally (see Sources) and some of those already mapped by the BSBI. It does not claim to be a comprehensive work or to be a closed document. Data for the 2020 (Atlas 2020) project will accrue until the end of 2019 and records materializing before then will be scrutinized and added.

In the course of writing it has become apparent that the aquatic environment of vc61 has been very extensively surveyed over the last 20 years (see Contributors) and that the few records that we have are representative of the distribution of the Characeae across the vice county. It should be noted that stoneworts tend to appear in a freshly dug or cleared body of water and remain for a few years before disappearing. To a certain extent mapping their occurrence is futile. This account includes examples of taxa that have re-appeared after a century of not being recorded indicating that there is still plenty of scope for finding taxa apparently new to the vice county.

Sources

Historical records were extracted from local publications as follows:

- Naturalist (1890-2000)
- Robinson (1902)
- Bulletin Yorkshire Naturalists Union
- Transactions of the Hull Scientific and Field Naturalists' Society

Identification Resources and Referees

Taxa examined by PJC were identified using Moore (1986) with reference, where necessary, to Allen (1950) and more recently to various sites on the internet. Taxa not previously seen, difficult to determine conclusively or important Red Databook (Stewart & Church, 1992) taxa were referred to Mr Albert Henderson and/or Dr N F Stewart for confirmation or determination as appropriate. There has been no attempt to store voucher material as this requires specialist curatorial technique.

Contributors

The following botanists and ecologists have contributed one or more records from their areas of interest and acknowledgement and thanks are duly recorded:

Dr Eric Chicken (RIP)

- studies of Yorkshire Wold dewponds and winterbornes (ephemeral fresh water).
- casual field studies (freshwater ponds, lakes and ditches).

Peter J Cook

- coastal wetland studies (brackish lagoons, ponds and soke dykes in Humber estuary).
- coastal grassland monitoring surveys (incidental ponds and ditches especially Flamborough and Buckton).
- agri-environmental surveys (farm ponds and fishing lakes).
- SSSI and Local Wildlife Site evaluation surveys (ponds, ditches, aggregate quarries).
- Planning/BREAMS surveys (urban/school ponds).
- Conservation project management (pond restoration).

Raymond Eades (RIP)

- estuarine and dockland bird watching and natural history studies (fresh and brackish water habitats Humber estuary, Spurn, Paull, Hull, Hessle, Ferriby and Brough).

Cedric Gillings

- General botany field work on the vc61/vc62 border (TA08/TA18); old R Hertford and cut.

Dr Ray Goulder

- Canal and waterway surveys (deep fresh water).
- North Cave Wetlands (aggregate quarries).

Martin Hammond

- Ecological assessments (fresh and brackish water sites)
- Water beetle research (fresh and brackish water sites)

Messrs David Broughton, Bill Dolling, Don Grant, Gabrielle Jarvis, Frank Kenington (RIP) and John Killingbeck.

- incidental finds from various sites.

Checklist

This list follows the nomenclature of Bryant, Stewart and Stace (2002) without synonyms. This is a list pertinent to the British Isles. Its presentation in full serves to demonstrate the paucity of taxa in vc61 as well as to accommodate insertion in a later issue.

Order: CHARALES
Family: CHARACEAE
Tribe: CHAREAE
Genus: CHARA

Chara aculeolata **(Hedgehog Stonewort)**
Robinson lists the taxon *L. polycantha*, recorded at Staddlethorpe in 1878 by H. R. Moiser. There is no prior introduction of "L." as an abbreviation for a genus and neither *Lamprothamnium* nor *Lychnothamnus* had such an epithet. The combination *C. polycantha* A. Braun nom. illegit. was in use at that time, used concurrently with *C. aculeolata,* the correct and still current combination.

This isolated record is dubious but not improbable.

C. aspera
C. baltica
C. braunii
C. canescens

***C. connivens* (Convergent Stonewort)**
A collection of material with connivent (strongly incurved) branches was taken by PJC from a pond of mildly brackish water near Channel Farm, Sunk Island (TA21) in 2004. Some of the material was monoecious and the collection was hastily ascribed to atypical *C. globularis* and discarded. Unfortunately, the possibility of a mixed collection was not investigated and *C. connivens* remains feasible.

This is a rare species with geographically nearest records in the Yarmouth area; vc61 is within the geographic range.

***C. contraria* (Opposite Stonewort)**
C. contraria var. contraria
Formerly *C. vulgaris var. contraria* nom. inval. in Moore 1986. This taxon has no historical record by this or any other name. Two recent records are known (SE83, 2007 and TA05, 2009).

C. contraria var. hispidula
This is a difficult taxon to identify given the number of similar, hispid taxa. Only the four most recent collections (TA08, 2008+; TA14, 1997+; TA17, 2010; and TA18, 2000 (+)) have been examined critically by PJC and referred for expert verification (+).

C. curta
C. denudata
C. fragifera

***C. globularis* (Fragile Stonewort)**
This was listed by Robinson as *Chara fragilis* and also by PJC occurring in one pond on North Cave Wetlands in both 2004 and 2007 as *C. globularis* var. *globularis* after Moore 1986. Two more records were added in 2007 for the Pocklington Canal in SE74. This is an uncommon taxon in vc61 with only three recent locality records, two of which are in the same body of water in adjacent tetrads.

***C. hispida* (Bristly Stonewort)**
This was listed by Robinson as occurring in a pond in Market Weighton in 1899. There has been some confusion with hispid stoneworts to the extent that records are dubious unless from reliable and tested sources.

Other records (TA13, 1988 and TA04, 1996) are both from reliable sources with one (1988) attested by Moore.

C. intermedia
C. muscosa
C. rudis

C. tomentosa
***C. virgata* (Delicate Stonewort)**
C. virgata var. annulata

C. virgata var. virgata
There are ten records for this taxon including six recorded as *C. globularis* var. *virgata.*
All records are post 1995 viz. SE86, 1996; TA22, 1996; TA04, 1996; TA32, 1998; TA22, 1998; TA22, 2001; SE83, 2007; TA23, 2008; TA08, 2009 and TA32, 2017.

It is interesting to note that the TA22 (Burstwick Gravel Pits) and TA32 (Hollym Carrs Nature Reserve) records demonstrate the persistence of this taxon in a given place.

***C. vulgaris* (Common Stonewort)**
C. vulgaris var. crassicaulis Material keying to this taxon according to Moore 1986 was collected from a pond at North Cave Wetlands (SE83, 2007) however there were features outside the key couplets which raised doubts and the identification was rejected pending examination of fresh material. Although this taxon is rare, vc61 is within its geographical range and the taxon is feasible.

C. vulgaris var. longibracteata
This is a very common taxon with 17 records, 11 of which are post 2000.

The post 2000 records are in hectads TA05, TA12, TA22, TA23, TA32, TA41 (x 2), SE64 and SE83 (x 3).

C. vulgaris var. papillata
This is a very common taxon frequently occurring mixed with *C. vulgaris var. vulgaris* and *C. vulgaris var. longibracteata.* There are 27 records, 19 of which are post 2000.

The post 2000 records are in hectads TA08 (X2), TA12, TA23, TA24, TA41 (X 2), SE64, SE74 (x2), SE83 (X 9).

The relatively high number of records is due to the contribution of 9 records from different ponds on the North Cave Wetlands which tends to exaggerate the frequency of this taxon.

C. vulgaris var. vulgaris and C. vulgaris ag.
There are 5 records for *C. vulgaris var. vulgaris* post 2000. This name is applied to those plants that fall within the general concept of *C. vulgaris* but do not have the combinations of characters displayed by the individual varietal taxa. All 5 records arise from recent more critical examination to differentiate from *C. vulgaris ag*. to which many collections were historically dismissed. Currently, 'good' records have been recorded from SE87, SE83 (x2), TA31 and TA41.

***C. vulgaris ag*.** has usually been applied to poor quality material that cannot be definitely ascribed to any particular variety as well as material that could, with more critical examination, have been ascribed to *C. vulgaris var. vulgaris*. There are 10 such records including the putative *C. vulgaris var. crassicaulis, vide supra.*

Genus: LAMPROTHAMNIUM
Lamprothamnium papulosum

Genus: NITELLOPSIS
Nitellopsis obtusa

Tribe: NITELLEAE
Genus: NITELLA
Nitella capillaris
N. confervacea

N. flexilis
Described by Robinson as not infrequent in Holderness drains and in Cottingham beck, this taxon has declined significantly. Only two records are known, each post 2000 viz. Kilnsea (TA41), 2005 and near Hagg Wood, Dunnington (SE65), 2017.Samples of *N. flexilis* deserve very thorough evaluation to differentiate from *N. opaca.*

N. gracilis
N. hyalina

N. mucronata
N. mucronata var. gracillima
There are 8 records for this taxon, all post 2000 as follows: TA04, 2000; TA05, 2000, SE74, 2000 and SE74 (x4), 2007. These are in Leven, Driffield and Pocklington canals.

N. mucronata var. mucronata
A sample of *N. mucronata* not fully compliant with the description for *N. mucronata var. gracillima* and with some features of *var. mucronata,* collected by Ray Goulder in Leven Canal in 2005 was referred to both Albert Henderson and Dr N F Stewart. Identification was not conclusive to either taxon and is noted as *N. mucronata* sensu lato.

N. opaca
N. spanioclema
N. tenuissima

N. translucens
Robinson lists one record by C Waterfall from Skipwith Common, SE63, in 1900. No other record has been found until a sample was submitted by Ray Goulder from Pocklington Canal, SE73 in 2002, the first and only for more than a century.

Genus: TOLYPELLA
***Tolypella glomerata* (Clustered Stonewort)**
This is listed in Robinson as occurring abundantly in a dyke near Haltemprice, Cottingham. Coincidentally there is a record for *T. intricata* (q.v.) in the same region. The close similarity of these two taxa raises some doubt as to the veracity of the identification of either.

A record in Kilnsea (TA41) by Slater (1881) was published in *Naturalist*. This appears to have been refound by Sledge (1937) in the same place. It was again re-found by PJC in three distant locations in Kilnsea in 1998, 2001, 2005 and 2017.

T. intricata

Robinson lists one record by C. Waterfall in a ditch at Dunswell (TA03, 1901).

In 2010 PJC received material collected by Martin Hammond from a pond near Thixendale (SE86). This proved to be *T. intricata*, confirmed by Albert Henderson and Dr N F Stewart. The pond is now under management to conserve and protect this species.

Stewart and Church (1992) list a record for TA02 but little is known of this.

T. nidifica

***T. prolifera* (Great Tassel Stonewort)**

Most accounts have this taxon as critically endangered with only a few records scattered across southern England. However, there is a pre-1959 record in BSBI Handbook 5 corresponding with SE84, and Stewart and Church (1992) list a record for SE84, but little is known of this. No local record for this location has been found.

Recently, (2007) two records have been collected and noted for the Pocklington Canal (SE74) by D Broughton. These records are feasible given the history of its occurrence in this area but the importance of this taxon is such that expert confirmation is required before committal to record.

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