

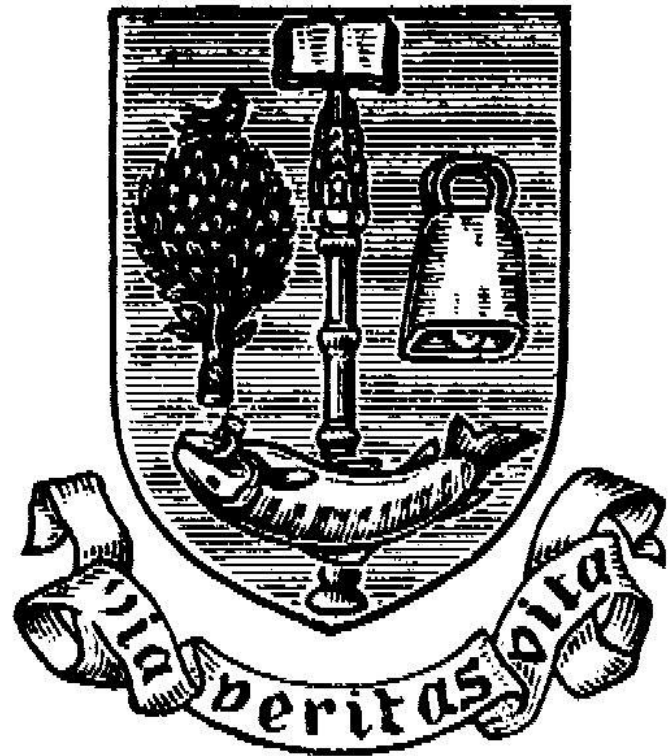
Freshwater Biology in Scotland: a Brief History

- Peter S Maitland
- University of Glasgow &
Fish Conservation
Centre
- SavingFish@sky.com



Original Scottish Universities

- St Andrews (1413)
- Glasgow (1451)
- Aberdeen (1495)
- Edinburgh (1583)



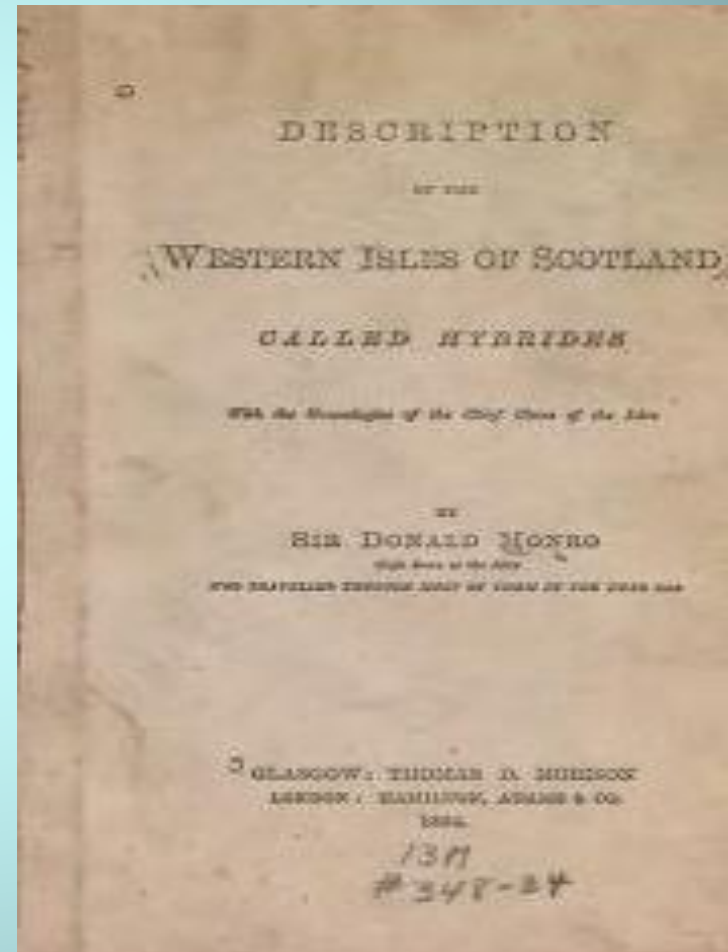
1498. Pedro de Ayala

- 'Great quantities of Salmon ... are exported.'
- Portal de Archivos Españoles, Carta de Pedro de Ayala a Miguel Pérez de Almazan.
Archivo General de Simancas, 52, 166 - 857V.



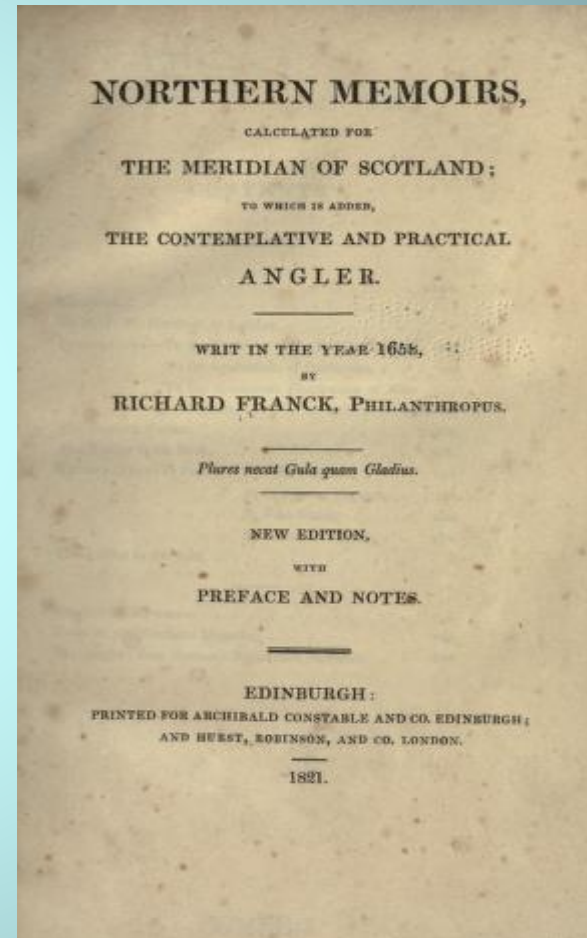
1549: Donald Munro

- ‘... the Water of Glenforsay, full of Salmond.’
- Munro, D. 1549.
Description of the Western Isles of Scotland called Hybrides. Glasgow, Morison.



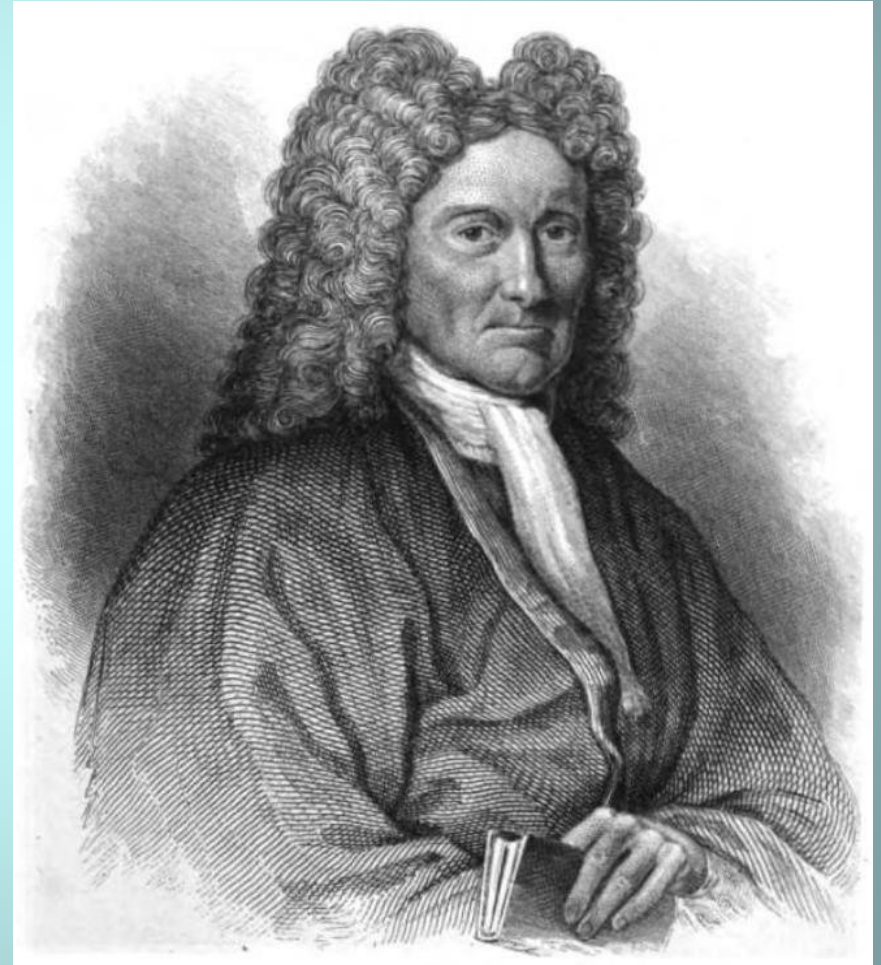
1649: Richard Franck

- ‘The memorable Anderwick, a rapid river of strong and stiff streams.’
- Franck, R. 1649. Northern Memoirs calculated for the Meridian of Scotland to which is added the contemplative and practical angler



1701: Robert Sibbald

- 'Loch Leven abounds with fine fish, such as salmon taken in summer. The gelletroch is a red-womb trout ..'
- Sibbald, R. 1684. *Scotia Illustrata sive Prodromus Historiae Naturalis*. Edinburgh.



1804: Thomas Thornton

- 'Loch Lomond, a most likely place for Pike'.
- *A Sporting Tour through the Northern Parts of England and Great Part of the Highlands of Scotland.* London.

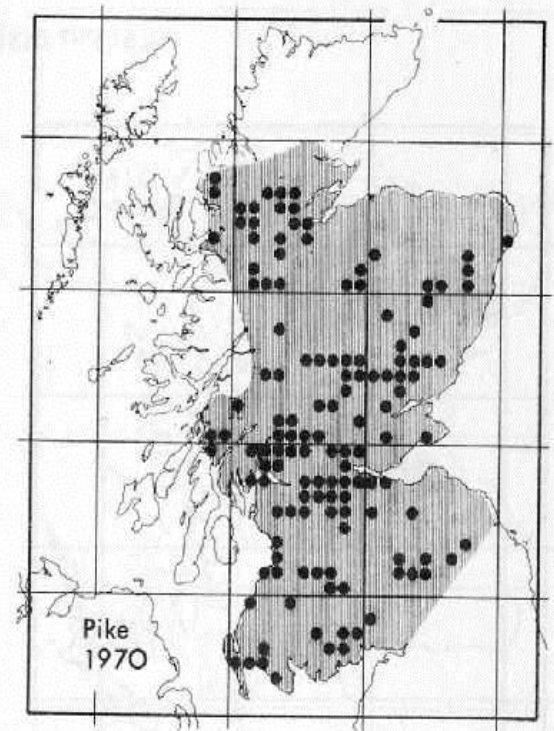
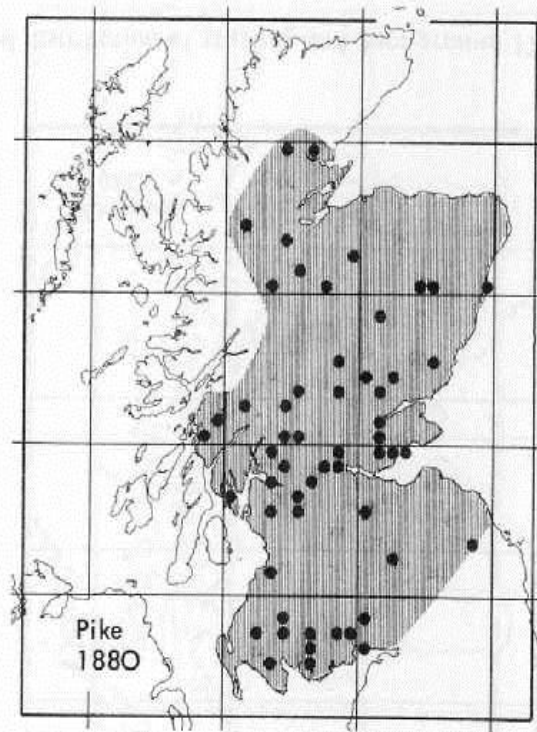
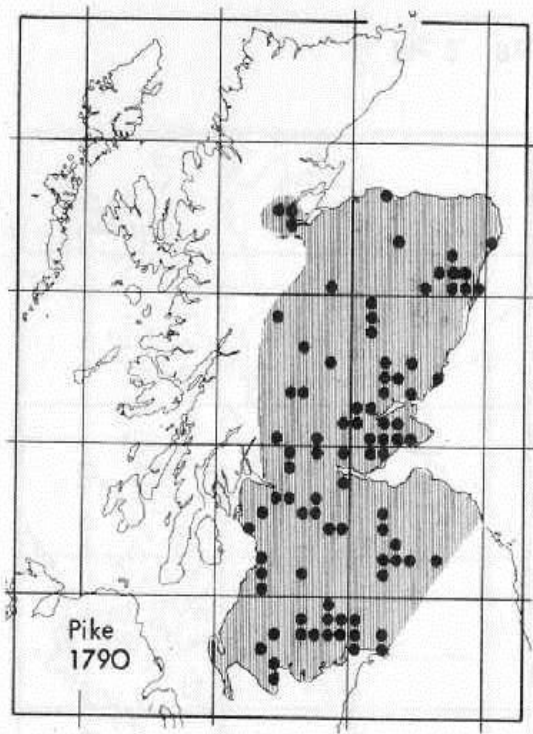


1791: Statistical Account of Scotland

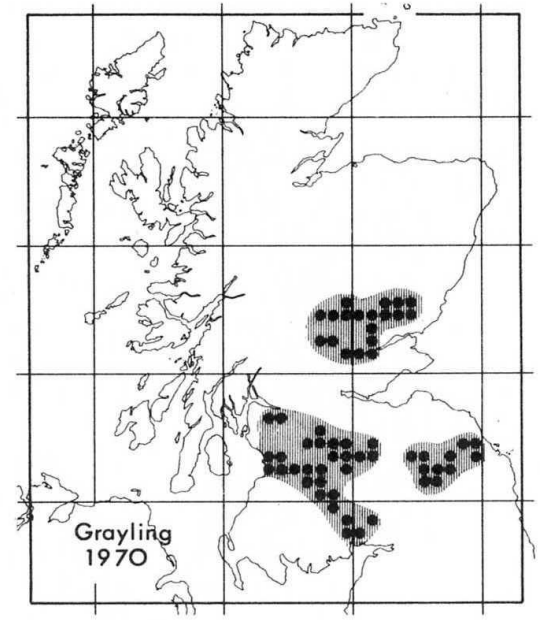
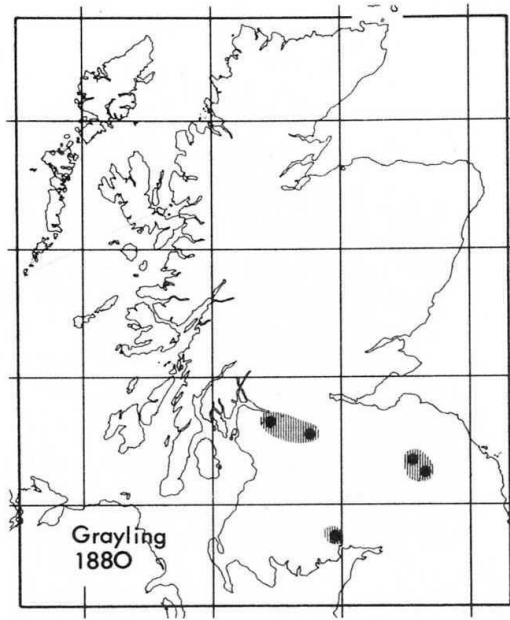
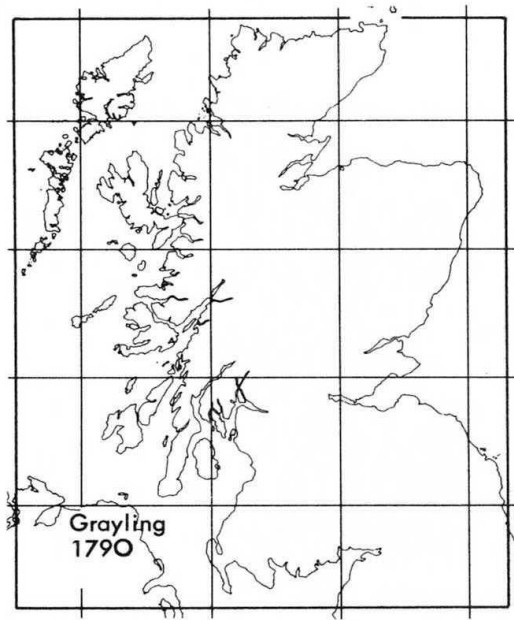


‘The River Ythan
abounds in falmon,
trout and flounders.
In it are innumerable
beds of mufcles, ‘
Duff, W. 1791-99.
Parish of Foveran. 16,
62-70. *Statistical
Account of Scotland,*

Distribution of Pike in Scotland 1790-1970



Grayling: Changing Distribution



Private Publications

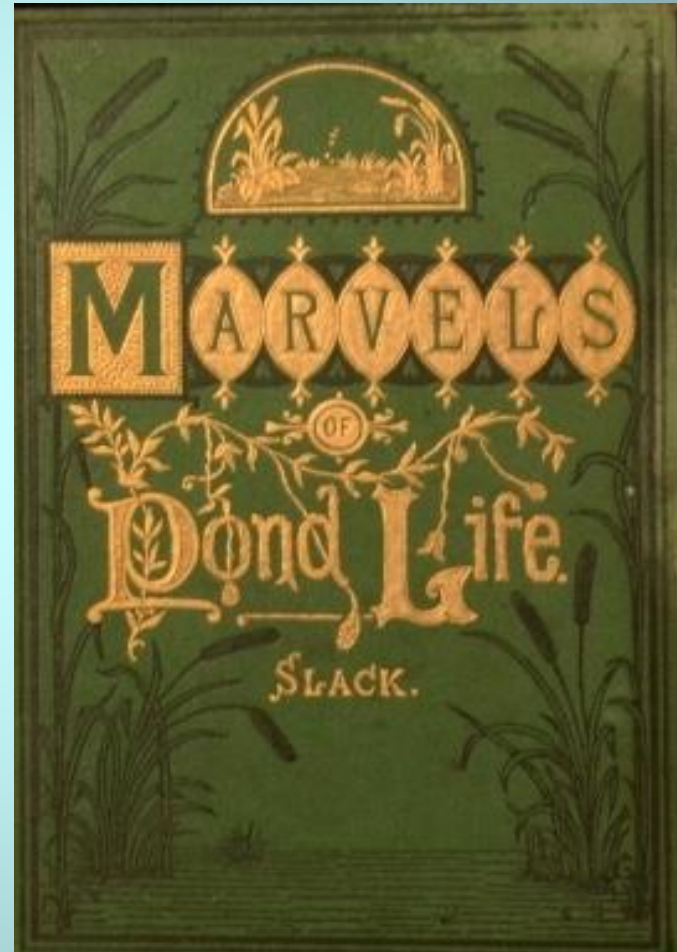
- Fraser, A. 1833. *Natural History of the Salmon, Herrings, Cod, Etc.* Inverness, Carruthers.
- Jardine, W. 1835. *Illustrations of Scotch Salmonidae.* Edinburgh.
- Cairncross, D. 1862. *The Origins of the Silver Eel.* London.

Journals

- Drummond, A. 1803. On the natural history of the Salmon. *Transactions of the Highland Society*, 2, 394-411.
- Knox, R. 1834. Observations on the natural history of the salmon, herring and vendace. *Transactions of the Royal Society of Edinburgh*, 12, 462-518.
- Peach, C.W. 1872. On the so-called tailless trout of Islay. *Report of the British Association*, 41, 133-134.

1878: Henry J Slack

- *Marvels of Pond-Life or, a Year's Microscopic Recreations Among the Polyyps, Infusoria, Rotifiers, Water-Bears, and Polyzoa*
- By Henry J. Slack
- 1878 - London - Groombridge and Sons.



Sir Herbert Maxwell

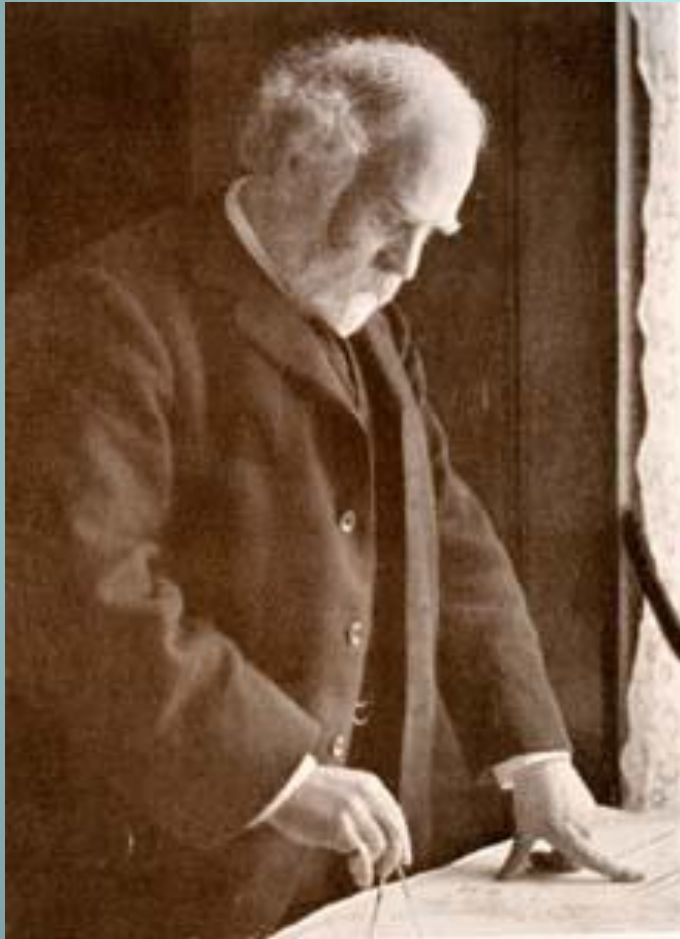
- Maxwell, H. 1904.
- *British Freshwater Fish*, Hutchinson.
- Maxwell, H. 1897.
- *Memories of the Months*, Arnold.



Natural History Societies

- Berwickshire Naturalists' Club (1831)
- Montrose Natural History & Antiquarian Society (1836)
- Orkney Natural History Society (1837)
- Glasgow Natural History Society (1851)
- Dumfriesshire and Galloway Natural History & Antiquarian Society (1862)
- Aberdeen Natural History Society (1868)
- Edinburgh Naturalists' Field Club (1869)
- Inverness Scientific Society & Field Club (1875)
- Stirling Natural History & Archaeological Society (1878)
- Perthshire Society of Natural Sciences (1881)
- Buchan Field Club (1887)
- Buteshire Natural History Society (1908)

Bathymetric Survey of Scottish Lochs



- **Sir John Murray** was a pioneering Scottish oceanographer, marine biologist and limnologist. He is considered to be the father of modern oceanography.
- Established marine laboratories at Granton and Millport.

John Murray & Fred Pullar



Airthrey Loch



Pullar Gravestone at Logie Kirk



Bathymetric Survey (1910)

BATHYMETRICAL SURVEY
OF THE
SCOTTISH FRESH-WATER LOCHS

CONDUCTED UNDER THE DIRECTION OF

SIR JOHN MURRAY
K.C.B., F.R.S., D.S.C., F.R.C.S.

AND

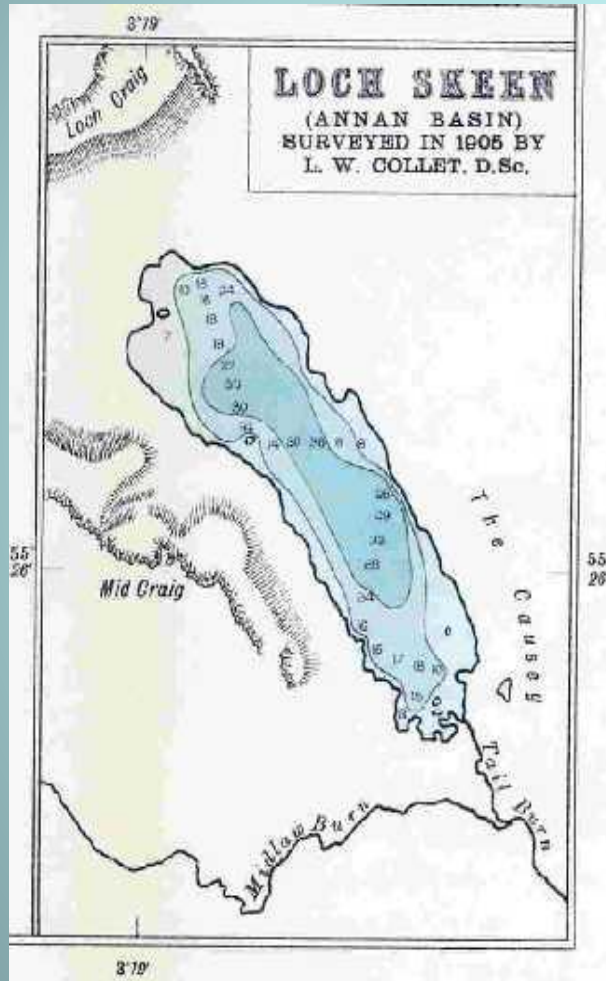
LAURENCE PULLAR
F.R.S.E., F.R.C.S.

DURING THE YEARS 1897 TO 1909

Dedicated
TO THE MEMORY OF
FREDERICK PATTISON PULLAR
WHO WAS DROWNED
WHILE ATTEMPTING TO SAVE THE LIVES OF OTHERS
ON 15TH FEBRUARY 1901
AT THE AGE OF TWENTY-FIVE YEARS

*He took an active part in the initiation
of this systematic survey of the
Scottish Fresh-water Lochs*

Bathymetric Maps



- LOCH SKEEN
- A typical example of one of the 562 bathymetric maps which Murray & Pullar published in 1910.

Papers from the Bathymetric Survey

Chrystal, G. 1906

Chrystal, G. & Wedderburn, E.M. 1905

Collet, L.W. & Johnston, T.N. 1906

Martin, C.H. 1907a, 1907b, 1907c

Murray, J. 1905a, 1905b, 1905c, 1905d,
1906a, 1906b, 1907a, 1907b, 1908

Wedderburn, E.S. 1903, 1904, 1907a,
1907b, 1907c, 1908, 1909, 1910, 1912

Wedderburn, E.S. & Watson, W. 1909

Wesenberg-Lund, C. 1905

West, G.S. 1905, 1906, 1909

Williamson, W. 1907

Arcteonais lomondi

- Martin, C.H. 1907.
- Notes on some Oligochaeta found on the Scottish Loch Survey.
- Proceedings of the Royal Society of Edinburgh, 28, 21-27.

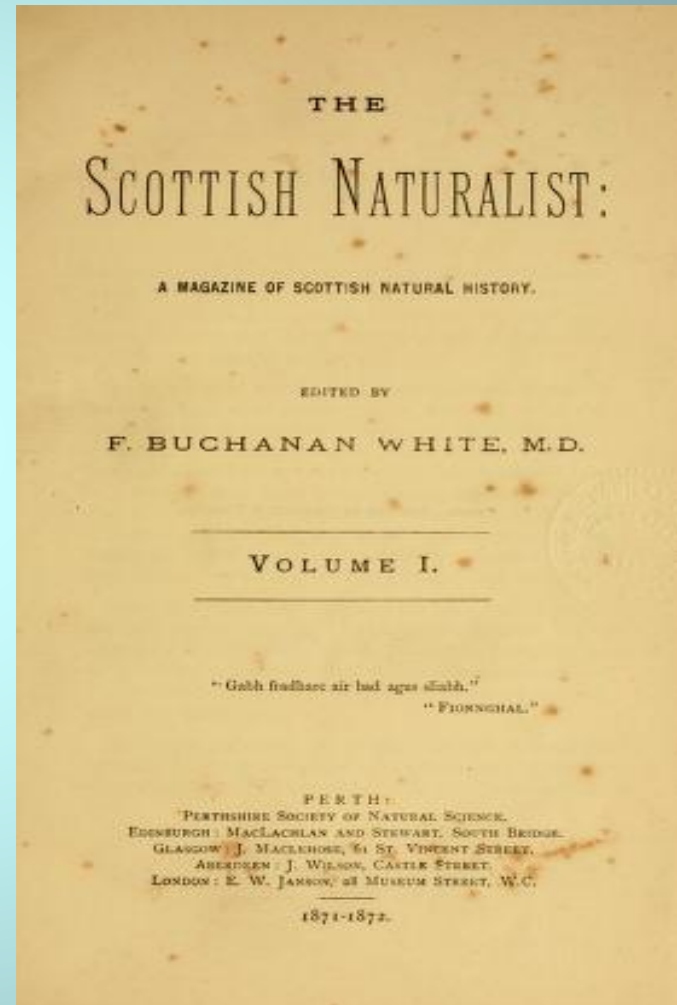
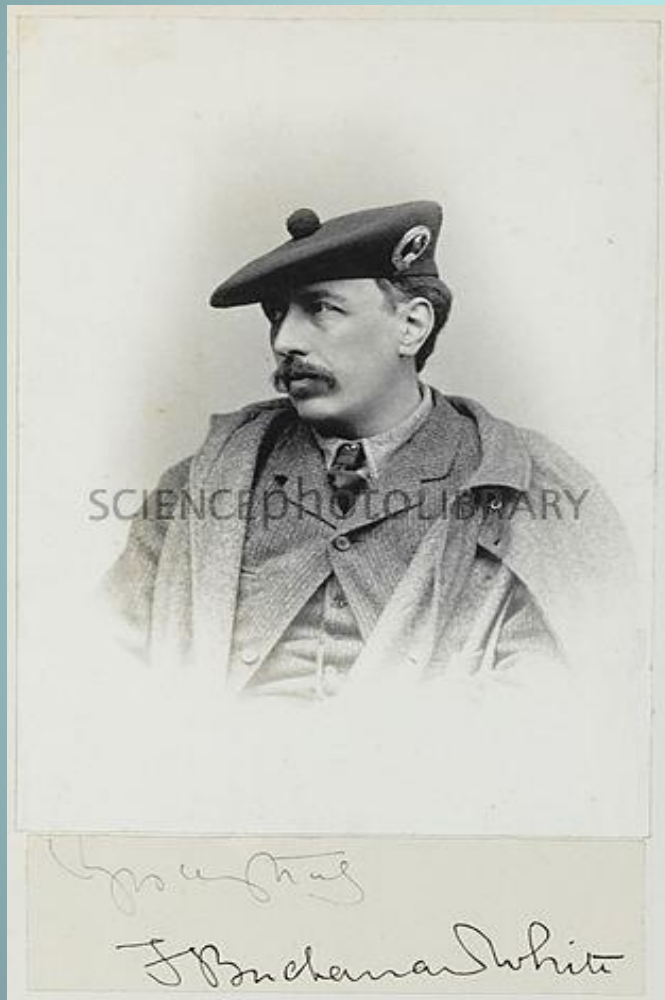


Captain W N McClean

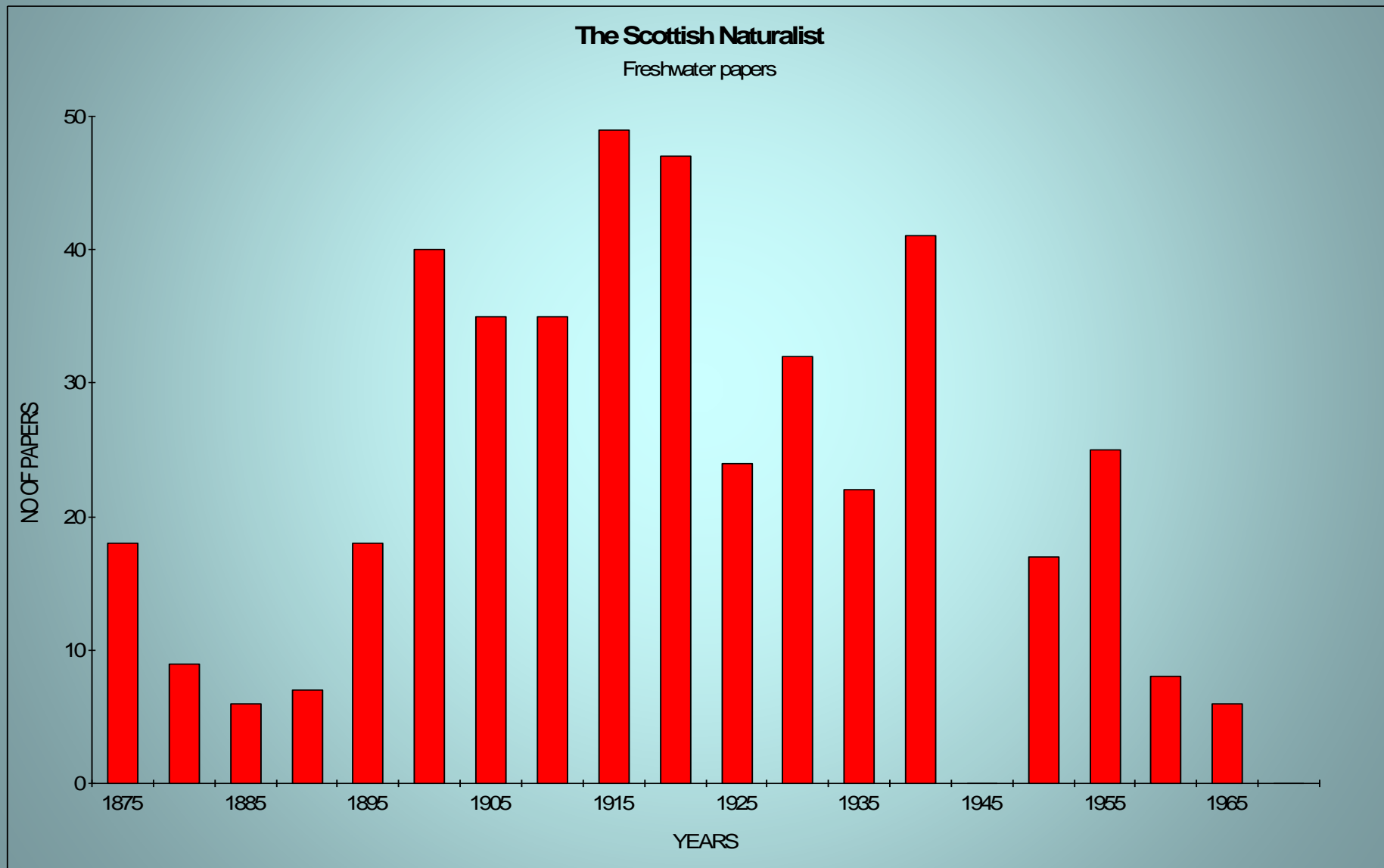


- 1913: River Garry - first river flow gauge.
- 1915: War service
- 1929: Gauging river flow in Scottish rivers – Garry, Moriston, Ness & Foyers, Dee
- 1935: Inland Water Survey Committee appointed

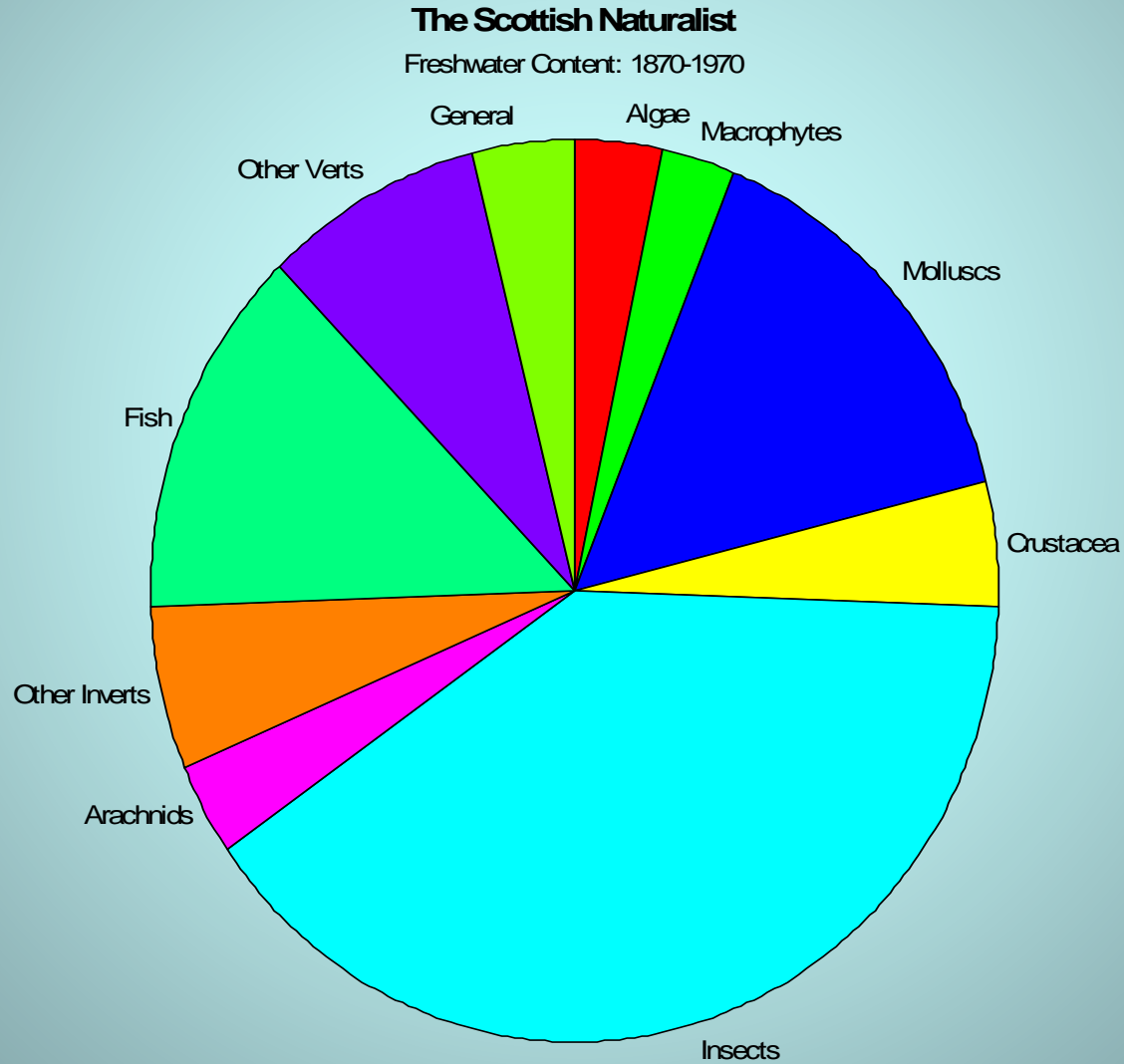
The Scottish Naturalist



Scottish Naturalist: Freshwater Papers

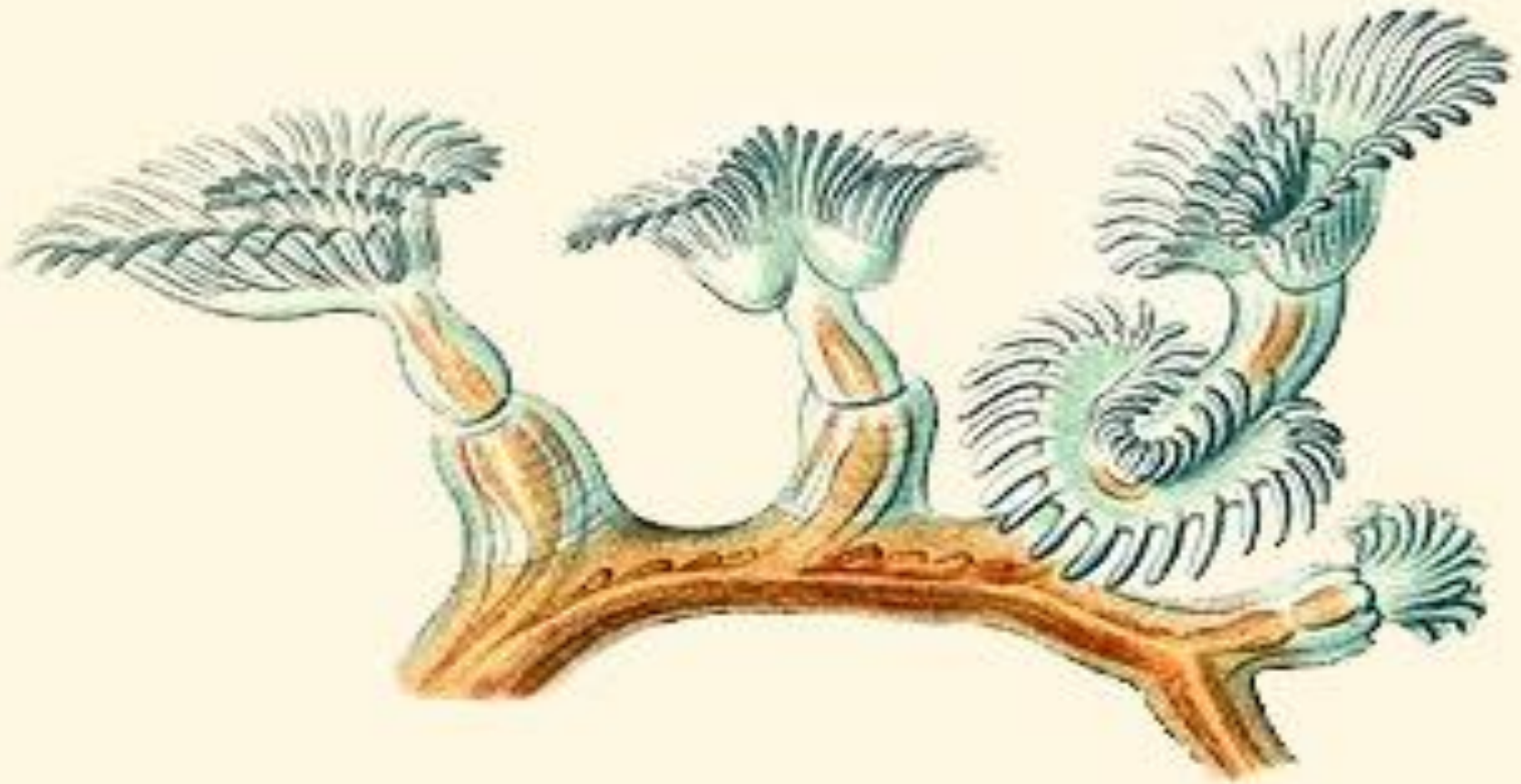


The Scottish Naturalist: topics

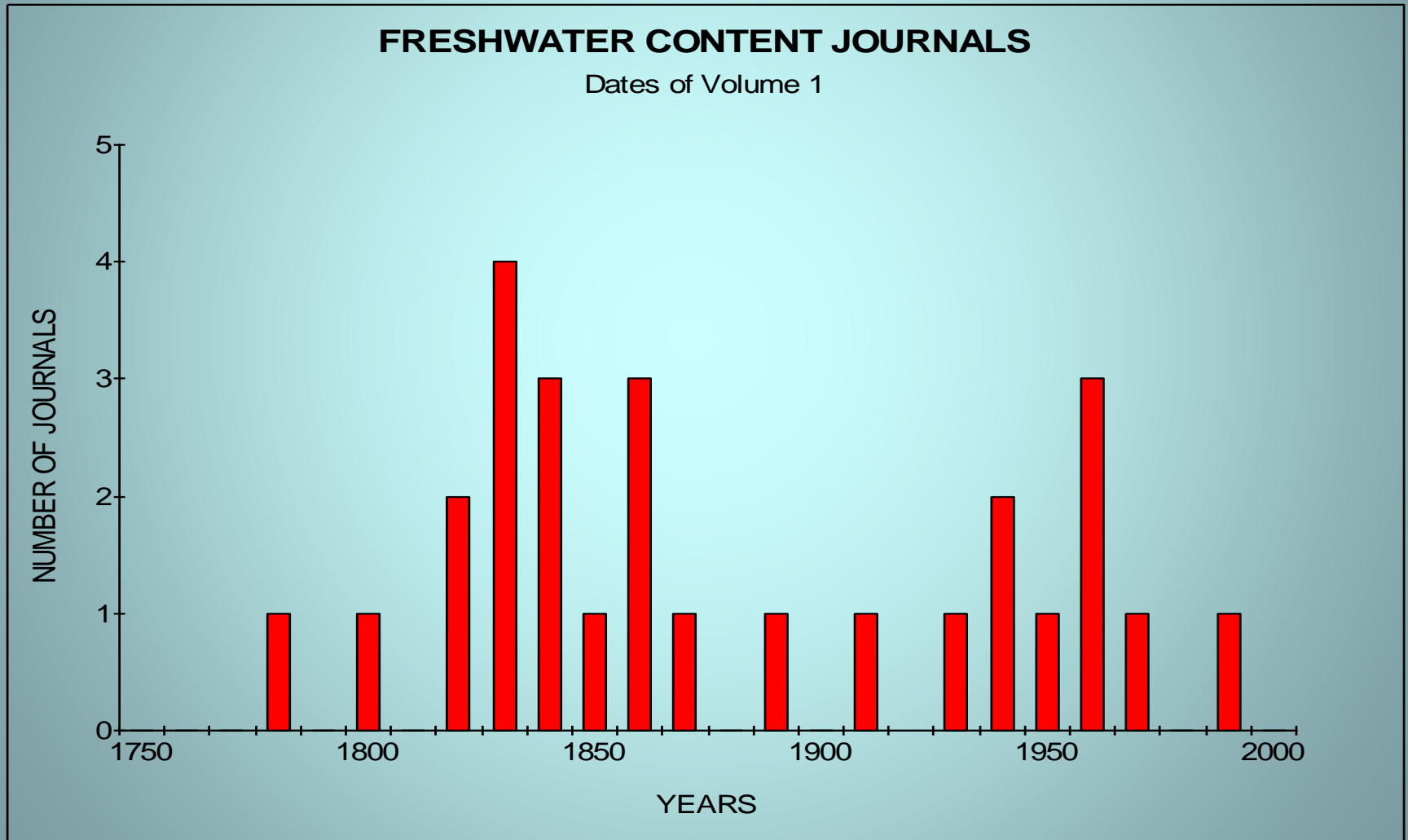




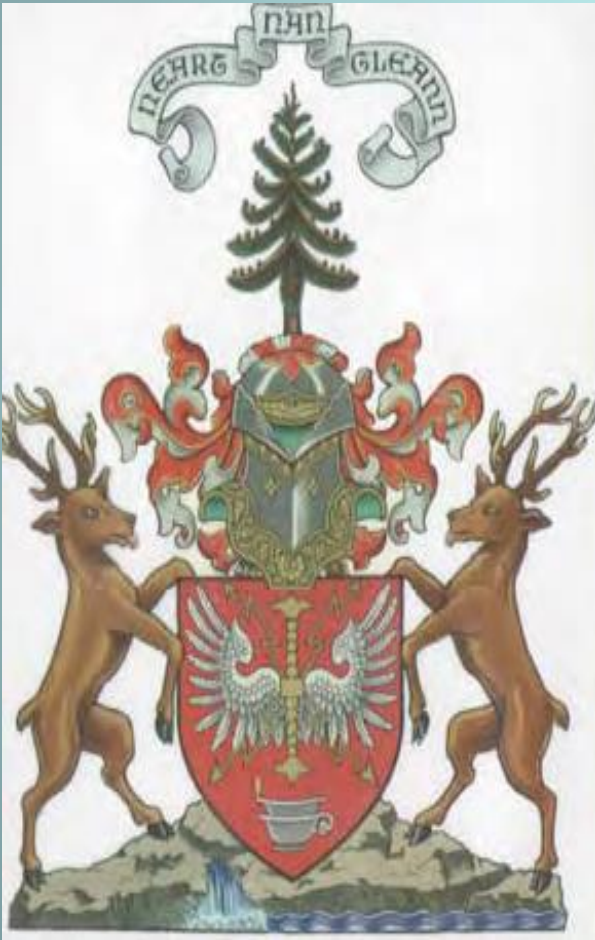
Bryozoa: Plumatella repens



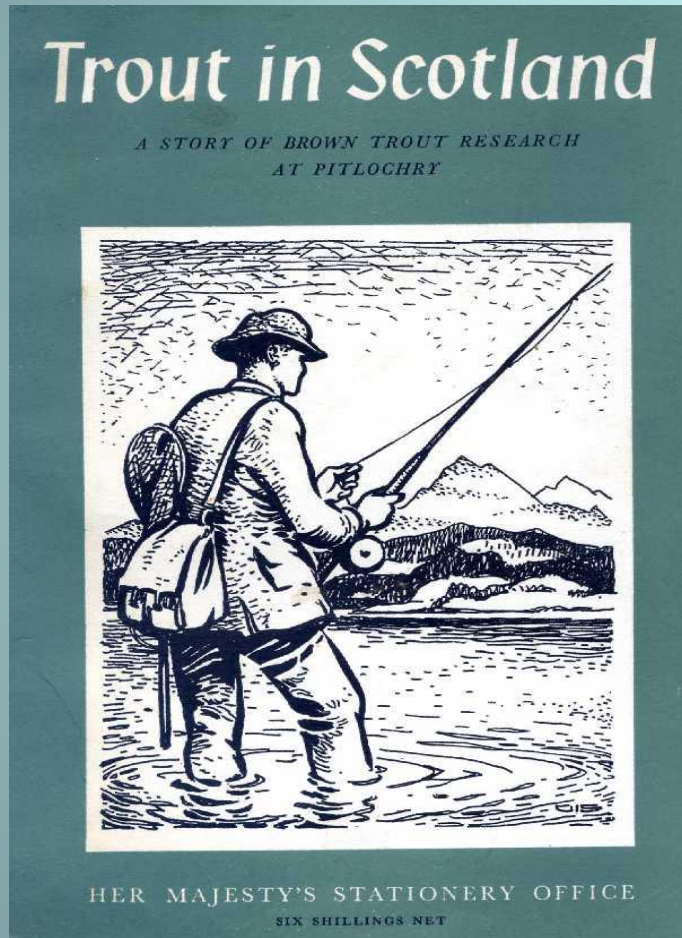
Journals with Freshwater Content



North of Scotland Hydro-Electric Board 1943



Brown Trout Research Laboratory 1948



The Nature Conservancy 1949



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

All of nature for all of Scotland
Nàdar air fad airson Alba air fad

River Purification Boards 1951



Post-War Developments

- North of Scotland Hydro-Electric Board 1943 (now SSE) (Tom Johnston)
- Brown Trout Research Laboratory 1948 (now FFL) (NSHEB & SHD)
- Nature Conservancy (Royal Charter 1949) (now SNH)
- River Purification Boards (1951 Act) (now SEPA)

Freshwater Biological Association



- 1929: First discussed in Glasgow at a meeting of the British Association for the Advancement of Science.
- 1931: Wray Castle – first Laboratory
- 1950: FBA moves to Ferry House

1st Glasgow University Field Station

Rossdhu: 1946



Rossdhu Field Station: Interior



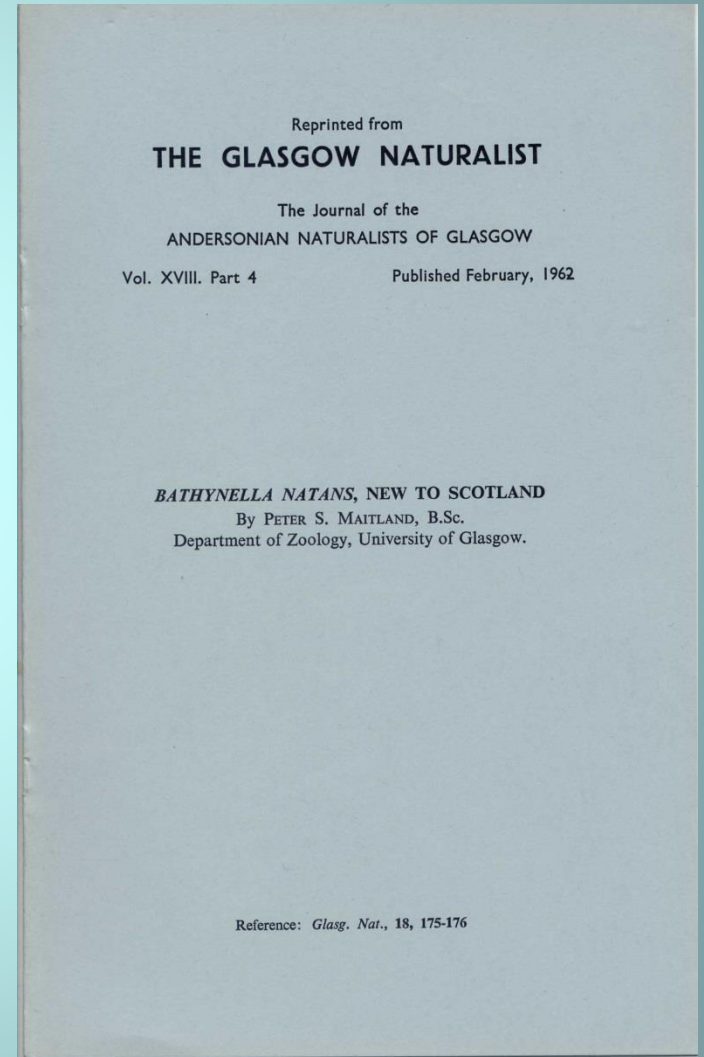
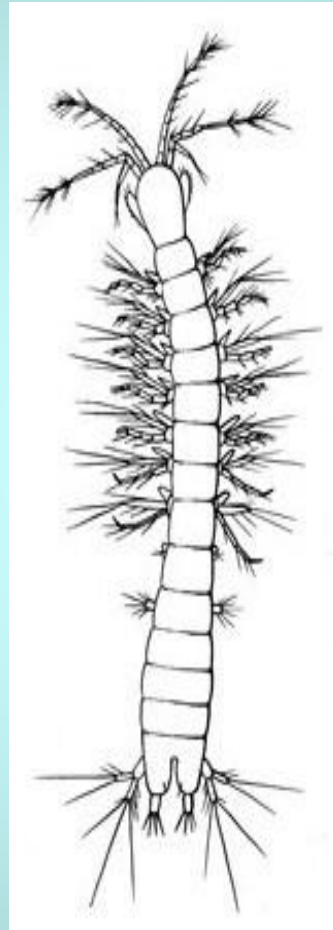
Harry Slack



University Field Station: SCENE



W D Russell Hunter



Scottish Freshwater Group



Three Men in a Car



SFG 1st Meeting

SCOTTISH FRESHWATER GROUP

The 1st Meeting of this Group will be held on Thursday 5th September, 1968, in the Department of Biology at the University of Stirling (situated on the A9, between Stirling and Bridge of Allan). All those interested are invited to attend and are requested to complete and return the attached slip so that appropriate arrangements can be made for the numbers participating.

Peter S. Maitland,
The Nature Conservancy,
12 Hope Terrace,
EDINBURGH, 9.

Scottish Freshwater Group

Programme

1030. Introductory remarks by Mr. K.A. Pyefinch, Chairman of the 1st Meeting.
1045. ~~Mr. J. Ian Waddington. 'Physico-chemical aspects of some research in the Clyde area'.~~ Mr Andrew Miller. 'Auto analysis in river pollution prescition work'.
1130. Dr. D.H.N. Spence. 'Light and the distribution of freshwater macrophytes'.
1215. Lunch, followed by an opportunity to view the University Buildings and Estate.
1430. Dr. H.D. Slack. 'The occurrence of Chironomus anthracinus in Loch Lomond'.
1515. Dr. H.J. Egglshaw. 'Estimates of the production of Salmon and Trout in highland streams'.
1600. Open discussion on the function and value of the Group.

Thanks to the University of Stirling



SFG Conveners



Freshwater Groups

- Scottish Freshwater Group
- London Freshwater Group
- FBA North East & Regional Freshwater Group
- West Midlands and North West England Freshwater Group
- East Anglian Freshwater Group
- Irish Freshwater Group

Scottish Freshwater Group: 25 Years

THE FRESH WATERS OF SCOTLAND

The 50th meeting



of the

**SCOTTISH
FRESHWATER
GROUP**

To be held at the UNIVERSITY OF STIRLING

2-3 FEBRUARY 1993

The Fresh Waters of Scotland

*A National Resource of
International Significance*

Edited by
**P. S. Maitland
P. J. Boon
D. S. McLusky**

 **WILEY**
Publishers Since 1807

SFG – 100th Meeting?

‘The Value of Fresh Water to Scotland’

- Public water supply £££ ?
- Bottled water £££ ?
- Whisky £££ ?
- Hydro-electricity £££ ?
- Fisheries £££ ?
- Aquaculture £££ ?
- Recreation £££ ?
- Scenic value £££ ?
- Education £££ ?
- ? £££ ?