

The *Challenger* Medal Roll (1895)

(Updated April 20, 2007)

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INTRODUCTION

My intention is to provide anyone who seeks it, useful information regarding the medal commemorating the 1872-76 worldwide voyage of HMS Challenger, which (in hindsight) celebrates the beginning of the modern science of oceanography. The author would be pleased to receive any additional information about the Challenger Medal, and in particular, be made aware of other existing examples of this medal. Please contact me at eloasis@earthlink.net.

BACKGROUND

"The objects of the Expedition have been fully and faithfully carried out. We always kept in view that to explore the conditions of the deep sea was the primary object of our mission, and throughout the voyage we took every possible opportunity of making a deep-sea observation. Between our departure from Sheerness on December 7th, 1872, and our arrival at Spithead on May 24th, 1876, we traversed a distance of 68,890 nautical miles, and at intervals as nearly

uniform as possible we established 362 observing stations."

Professor Sir Charles Wyville Thomson

But the work of the *Challenger* Expedition had only just begun. A group of specialists, men learned in their own subjects, would spend years describing and drawing the specimens that filled storehouses and laboratories. Then, the daunting task of publishing the results fell for the most part on the shoulders of John Murray. For the authors of the *Challenger Reports*, they "...received nothing more than a copy of the publication and a small honorarium to cover their expenses. In further appreciation it was resolved that a *Challenger* medal be struck (sic). The Treasury refused to pay for it and John Murray had the medal designed and executed at his own expense and himself sent replicas to those who had shared in the expedition or in the preparation of the Report. He himself was honoured by the Royal Society when he was admitted Fellow in 1896. Official commendation by the Government was deferred until 1898, when the Queen conferred to John Murray the rank of KCB [Knight Commander, The Most Honourable Order of the Bath] in recognition of his outstanding contributions to science." ¹

Contemporary writings in the journal *Nature* stated the medal, "...is being presented by Dr. John Murray to the naval officers of the expedition, the contributors of memoirs to the report[s] on the scientific results of the expedition, and to members of the civilian scientific staff, as a souvenir of *Challenger* work." ² There were instances where medals were issued to individuals who fell outside this scope. One person concerned was Laurence Pullar. He had an engineering and business background, was a man of wealth, and took a broad view of public service. Pullar was also a life-long friend of Murray, and a Fellow of both the Royal Society and Royal Society of Edinburgh.

NUMISMATIC DETAILS OF THE *CHALLENGER* MEDAL ³

Obverse: Commemorates the voyage. In the center is a head and shoulders left-facing profile of the Roman goddess of wisdom and war, Minerva (in one of her many roles). Next to her is the image of an owl, her sacred bird (which is why wisdom is associated with owls). ⁴ These figures are superimposed upon a globe with lines of latitude and longitude. I know of at least one example of the medal with only the lines of longitude on the globe. ⁵ Partially encircling Athena and the owl is what appears to be an evergreen laurel branch; to the Greeks and Romans the laurel symbolised acquired immortality, both in battle as well as in the arts. ⁶ The whole is bordered by water, indicating the Expedition's round-the-world voyage. Figures from the sea include the Roman god of the sea, Neptune, who is grasping what appears to be a bottom sampler trawl in his right hand (disclosing treasures from the deep). He cradles his trident in the left hand. A stylized dolphin is close by, and two mermaids support a long ribbon, which carefully conceals their charms. The ribbon bears the words: VOYAGE OF H.M.S CHALLENGER/1872-76. (*Fig. 1*) All images courtesy of St. Columba's Hospice, Challenger Lodge, Edinburgh.

Reverse: Commemorates work on the *Challenger Reports*. The central figure is a standing armored knight, throwing the gauntlet from his right hand into the sea (presumably to Neptune), whose trident appears above the waves - this being the crest of *H.M.S. Challenger*. The trident is partially wrapped in a long ribbon, which extends the entire circumference of the reverse. The ribbon bears the wording: REPORT ON THE SCIENTIFIC RESULTS OF THE CHALLENGER EXPEDITION 1886-95. (*Fig. 2*)

Size: 75 mm (3 inches).

Metal: bronze (*possibly* also manufactured in silver, and though I have never seen an example in this metal, one example supposedly exists, and Brown states the medal was manufactured in silver). [7](#)

Designer and Sculptor: William S. Black (an Edinburgh artist who actively exhibited between 1881-97) and William Birnie Rhind, RSA (1853-1933/an Edinburgh sculptor). [8](#)

How manufactured: Cast.

Manufacturer: Unknown maker in Paris.

Naming: Recipient's first name and surname are engraved on the edge at six o'clock, in sans serif capital letters. Sometimes, only the first and middle initials are engraved.

Number Cast: Unknown.

Number Issued: The List of Recipients of the Challenger Medal., 120 medals were issued. Below, the List reveals the totals of issued medals from Aug. 29, 1895 through Feb. 15, 1897.

"Up till Aug. 29. [1895]

95 medal have been despatched (as per list)
4 without names (1 to Mr. Irvine Smith - Aug. 27.95)
1 " " taken to Holland by Mr.(sic) Murray
1 engraved Monteith [this is struck through]
100

Dec.16.1895.

107 medals engraved
1 Dr. Murray
1 Mr. Irvine Smith
11 in office
120

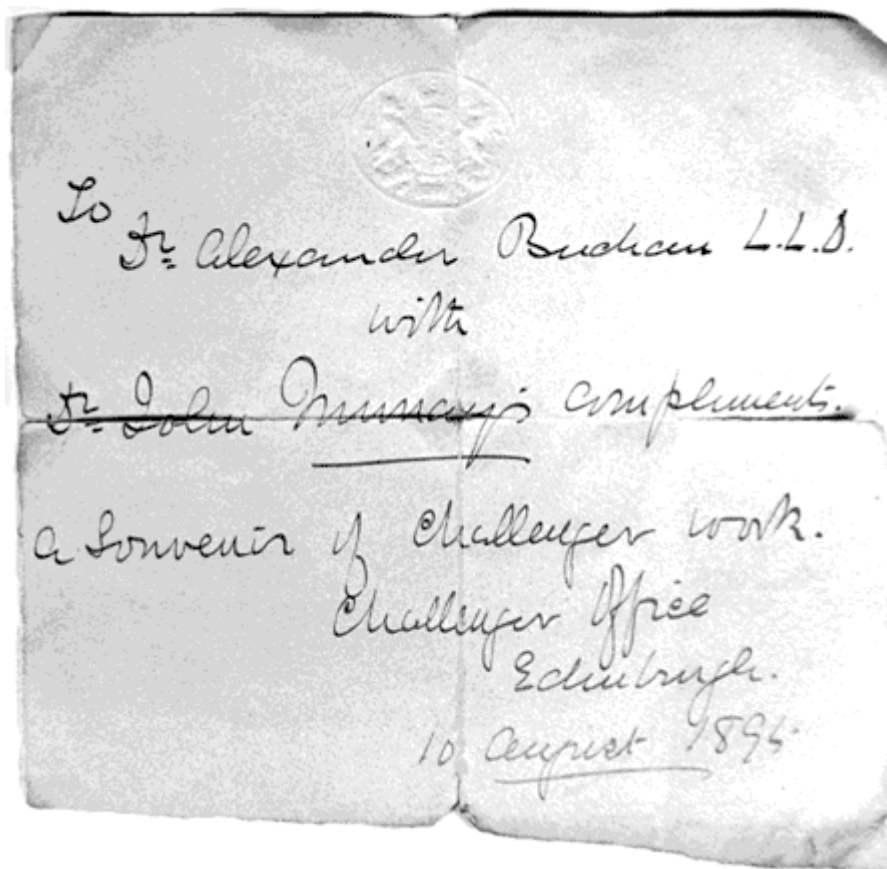
Jan.14 96

111 medals engraved
1 Dr. Murray
1 Mr. Irvine Smith
7 in office
120

Feb. 15 97

118 medals engraved
1 Dr. Murray
1 Mr. Irvine Smith
120"

The medal was issued from the *Challenger* Office, Edinburgh, in a fitted hinged case, which has "James Crichton & Co., 47 George St., Edinburgh" printed on the white fabric of the inside lid. It comes with a simple handwritten document noting the recipient's name, and that it is a souvenir of Challenger work. [9](#) (Fig. 3) Several medals were hand delivered by Dr. Murray, but the majority of them were sent by post.



Handwritten note, Alexander Buchan Medal

[Click on image for larger view.](#)

CHALLENGER MEDAL ROLL

Assembling a complete medal roll presents various challenges. Laurence Pullar's award is but one example, as he did not (as far as I am aware) fit the criteria for the award, and yet he received a medal. Two other problems derive from the article in *Nature*. These writings state that Murray was presenting medals "...to the naval officers of the expedition, the contributors of memoirs to the report[s] on the scientific results of the expedition, and to members of the civilian scientific staff, as a souvenir of *Challenger* work." Firstly, there are nine individuals included in Walter Crane's *Challenger Expedition Reports. Portraits of the Contributors, Reproduced from the Photographs Presented by Them to John Murray, etc.* (1897), who do not appear on the *List of Recipients of the Challenger Medal*, and there seems no apparent reasons for their omissions. The second problem is whether or not "contributors" included their assistants; perhaps in some cases the answer was yes, but in others no. Frederick Gordon Pearcey had one foot in each of the two worlds, as he was a Domestic 3rd Class in the Royal Navy, and an Assistant to the Naturalists onboard. His shipmate, Writer Richard Wyatt, must have significantly helped in the recording of data, and was thus rewarded with the medal. One recipient was a certain "Miss Sclater", who was quite likely Philip L. Sclater's daughter, but this cannot be confirmed. I cannot find links with the Expedition or subsequent scientific work among several individuals at the end of the Roll, but more research and time will undoubtedly unmask their roles. Please note that naval

ranks shown are those existing at the time of the Expedition.

NAVAL PERSONNEL

	NAME	RANK	NOTES
1)	ABBOTT, William J.	Actg. Asst. Engr.	Medal sent to HMS St. George, Simon's Bay, Cape of Good Hope. Entitled to the East and West Africa Medal 1887-1900/Benin 1897 (Fleet Engineer/HMS <i>St. George</i>).
2)	ALDRICH, Pelham (1844-1930)	First Lieutenant	Medal sent to Captain Aldrich, HMS Hawke (Mediterranean Squadron), Admiralty, London. Medal known with document in the NMM Collection; named "PELHAM ALDRICH". Donated by Aldrich's great-nephew. 10 Promoted to Commander after Expedition. Entitled to the Arctic 1875-76 Medal (First Lieut., HMS <i>Alert</i>). Commanded the Western Sledge Party (Ellesmere Island) during the Arctic Expedition. Captain's Good Service Pension, November 1894. Rear Admiral, 1898. Admiral Superintendent of Portsmouth Dockyard, 1899-1902. Attended the departure of the Royal Coffin from Gosport, at the funeral of Queen Victoria, 1 February 1901. CVO (1902). Admiral 1907. Retired 1908. Aldrich's journal is in the RGS archives.
3)	ALLEN, Alfred J.	Engineer	Shown as Allan on the List. Medal sent to a residence, but then forwarded to the Admiralty.
4)	BALFOUR, Andrew F.	Sub-Lieutenant	Medal sent to Commander Balfour, HMS <i>Penguin</i> (Australian Station), Admiralty, London. Balfour captained the Penguin from 1893-95. In 1895, he made three soundings in over 5,000 fathoms in the Kermadec Trench, the deepest obtained to that date.
5)	BETHNELL, George R.	Lieutenant	Medal sent to Commander Bethell, 43 Curzon Street, Mayfair, London. Also entitled to the Egypt 1882-89 Medal/no bar and Khedive's Star 1882 (Lieut., HMS <i>Minotaur</i>). Later an MP for Holderness Division, Yorkshire, for many years.
6)	BROMLEY, Arthur C.B.	Lieutenant	Assistant Surveyor, 3rd Cl. Medal sent to Captain Bromley, HMS <i>Endymion</i> , (Channel Squadron), Admiralty, London.
7)	CAMPBELL, Lord George G. (1850-1915)	Sub-Lieutenant	Log-Letters from The <i>Challenger</i> (London, 1877).
8)	CARPENTER, Alfred	Lieutenant	Medal sent to Commander Carpenter's agent in Westminster, London. Received the Albert Medal, 2nd Cl. during the Expedition (Stanley Harbour, Falkland Islands, Jan. 20, 1876), and awarded the RHS Bronze Medal for the same incident. DSO and specially MID for services during the annexation of Burma, and received the thanks of the Government of India. Entitled to IGS/Burma 1885-7 (Commander-in-Charge of the Marine Survey of India, 1884-September 1889); Egypt 1882-89 Medal/no bar (Commander, in command of the survey vessel <i>Myrmidon</i>) and Khedive's Star, 1884-86. In 1889, received a letter from the Indian Government recording their appreciation of his

- valuable services. FRMS; FZS.
- 9) CHANNER, Arthur Sub-Lieutenant Medal sent to Captain Channer, Light House Department, Colombo, Ceylon. Entitled to IGS/Burma 1885-7, when Assistant Superintendent of the Indian Marine Survey, and served with the Naval Brigade (MID). Assistant Superintendent, First Grade, Indian Marine Survey, May 1882 to August 1887.
 - 10) HAVERGALL, Arthur (1851-?) Sub-Lieutenant Assistant Surveyor 1st Cl. Medal sent to Captain Havergal, Hydrographic Department, Admiralty, London. Specially promoted to Lieutenant for services during the Expedition.
 - 11) HIGHAM, Robert Actg. Carpenter Medal sent to HMS *Victory*, Portsmouth.
 - 12) HOWLETT, William A. Asst. Engr. 2nd Cl. Medal sent to HMS *Grafton*, Chatham.
 - 13) HYNES, John Asst. Paymaster Medal sent to HMS *Northampton*, Sheerness.
 - 14) MACLEAN, George Staff Surgeon Medal sent to Surgeon-General Maclean, RN Hospital, Haslar, Gosport.
 - 15) MACLEAR, John Fiot Lee Pearse (1838-1907) Commander Contributor to the Narrative. He was second-in-command throughout the entire voyage, and was afterwards promoted to Captain. Assistant Surveyor, 2nd Class. Medal delivered by Dr. Murray. Retired Vice-Admiral, 23 August 1897. Entitled to Crimea/Sebastopol, Baltic, Turkish Crimea Medals (Midshipman/HMS *Algiers*), China 1857- 60/Taku Forts 1860 (Lieutenant/HMS *Sphinx*), Abyssinia 1867-68 (First Lieut./HMS *Octavia*). He is reputed in *Dictionary of National Biography 20th Century* and *The Times'* obituary to have served as a Naval Cadet on HMS *Castor* during the South African War, 1850-53, but he is not on the Medal Roll. In addition, a photograph of Maclear wearing his miniature medals does *not* show him with the South Africa 1834-53 Medal. Admiral 1903.
 - 16) NARES, George Strong (1831-1915) Captain (1872-74) Contributor to the *Reports*. Medal delivered by Dr. Murray. Also entitled to the Arctic 1818-55 Medal (Mate/HMS *Resolute*/1852-54) and Arctic 1875-76 Medal (Captain, HMS *Alert* - Commander of the Expedition). FRS (1875), RGS Founder's Gold Medal (1877). Gold Medal of the Société de Géographie de Paris. KCB upon his return from the Arctic Expedition. Vice-Admiral on the Retired List in 1892.
 - 17) PEARCEY, Fredk. Gordon Domestic, 3rd Cl. Assistant to scientists, with duties in the chemical laboratory. Employed by the Challenger Commission upon his return of the Expedition. Contributor to the *Reports*. Along with Writer 3rd Cl. Richard Wyatt, one of only two other ranks to receive the medal.
 - 18) RICHARDS, R.R.A. Paymaster Medal delivered to Erlands, Crondall, Hants. Unpublished journal rests in the archives of the RGS.
 - 19) SLOGGERT, Henry Charles (1852-1905) Sub-Lieutenant Medal sent to Honolulu, Sandwich Islands. Later resigned his commission and went to medical school in Edinburgh. Dr. Sloggett, his wife and daughter, arrived in Honolulu in 1896, having come from the state of Washington. In 1900, he helped

		organized the Honolulu Microscopic Society. He was also a member of the Medical Association of Hawaii and its president in 1903.
20)	SPRY, William James Joseph (?-1906)	Engineer Medal delivered to Therapia, St. Andrews Road, Southsea. <i>The Cruise of HMS Challenger</i> (London, 1880).
21)	SWIRE, Herbert (1851-1934)	Sub-Lieutenant Medal sent to Commander Swire, HMS Australia, Southampton. <i>The Voyage of the Challenger</i> (two volumes, limited edition; London, 1937).
22)	THOMSON, Frank Tourle (1875-76)	Captain In charge of survey. Contributor to the <i>Reports</i> . Medal sent to Thomson at The Palace, Hampton Court, London.
23)	TIZARD, Thomas H. (1839-1924)	Staff Cmdr. Asst. Surveyor, 1st Cl. Contributor to the Narrative and Meteorological Observations. Medal delivered by Dr. Murray. Probably entitled to the Baltic Medal. CMG (Queen's Birthday, June 3, 1899). Shown on the 1901 and 1907 Retired Lists with a CB, but this may be in error for the CMG. FRS; FRGS.
24)	WYATT, Richard	Writer, 3rd Cl. A Chief Petty Officer rating. Medal delivered to 113 Powerscourt Road, Portsmouth. Along with Domestic 3rd Cl. Fredk. G. Pearcey, one of only two other ranks to receive the medal. On April 4, 1873, Wyatt discovered Schoolmaster Adam Ebbels in his hammock, dead from apoplexy (stroke).

CIVILIAN SCIENTISTS

	NAME	TITLE(S)	NOTES & SPECIALTIES
25)	BUCHANAN, John Young (1844-1925)	Chemist & Physician	Contributor to the <i>Reports</i> . Specific Gravity of Ocean Water. FRS (1887).
26)	MOSELEY, Henry Nottidge (1844-91)	Naturalist	Zoologist and Anthropologist. <i>Notes by a Naturalist on HMS Challenger</i> (London, 1880). Contributor to the Narrative. Hydroid and other Corals; Phosphorescent Organ of Ipnops. Royal Medal (1887); MA; FRS (1877); FZS; FLS.
27)	THOMSON, Sir Charles Wyville (1830-82)	Director of Civilian Scientific Staff	Medal awarded posthumously sent to a Miss Dawson (presumably a relative). Contributor to the <i>Reports</i> . First Editor of the <i>Reports</i> . Introduction of the <i>Zoological Reports</i> . FRS (1869). Sir Wyville Thomson was an important proponent for ocean research in the 1860s that ultimately led to the <i>Challenger</i> Expedition. He was Chief Scientist for the dredging voyages of HMS <i>Porcupine</i> and <i>Lightning</i> , and authored <i>The Depths of the Sea</i> in 1873, which summarized the findings of these voyages and presented a case for a global oceanographic voyage of exploration.
28)	WILD, John James (1828-1900)	Artist & Secretary	<i>At Anchor: A Narrative of Experiences Afloat and Ashore During the Voyage of H.M.S. Challenger from 1872 to 1876</i> . (London, 1878). <i>Thalassa, an Essay on the Depth, Temperature, and Currents of the Ocean</i> . (London, 1877). Contributor to the <i>Reports</i> . A Swiss national.

- 29) WILLEMOES-SUHM, Naturalist Dr. Rudolf von (1847-75) Medal awarded posthumously and sent to his mother. Marine Biologist. died at sea of erysipelas, age 28, Sept. 13, 1875, on passage to Tahiti, and was buried at sea. A memorial tablet given to the family by Thomson, Murray, Buchanan, Moseley and Wild, now rests at the family burial place in Bad Segeberg (about 30 miles south of Kiel).

CONTRIBUTORS TO THE REPORTS.

There was a conscious decision to invite the world's premier specialists to conduct the investigations and write the various *Challenger Reports*. This was done at the vigorous insistence of J. J. Thomson, who experienced considerable pressure to give a more prominent role to British scientists.

CONTRIBUTORS TO THE REPORTS

	NAME	SPECIALTIES AND/OR POSITIONS	NOTES
30)	AGASSIZ, Alexander (1835-1910)	Echinoidea.	Marine Zoologist and Oceanographer. FRS (1891). Agassiz performed extensive explorations in the U.S. littoral areas prior to the <i>Challenger</i> expedition. He was an advisor and valuable assistant to Thomson immediately following the expedition, and participated in cataloging of the specimens and forming the initial plans for the <i>Challenger</i> reports.
31)	ALLMAN, George James (1812-98)	Hydroida.	Marine Zoologist. Royal Medal (1873); Brisbane Gold Medal (1877); Conningham Gold Medal (1878); The Linnean Medal (1896). MD; LLD; FRCSI; FRS (1854); FRSE; MRJA; CMZS.
32)	BEDDARD, Frank Evers (1858-1925)	Isopoda.	Member of Editorial Staff. Naturalist to the Challenger Expedition Commission (1882-84). MA; DSc; FRS (1892); Prosector of the Zoological Society (1884-1915); FRSE; FZS.
33)	BERGH, Rudolph (1824-1909)	Nudibranchiata; Marseniadae.	Invertebrate Zoologist. MD.
34)	BRADY, George Stewardson (1832-1921)	Copepoda; Ostracoda.	MD; FRS (1882); FLS; FGS.
35)	BROOK, George (1857-93)	Antipatharia.	Medal awarded posthumously and sent to his wife. FLS; FRSE.
36)	BROOKS, William Keith (1848-1908)	Stomatopoda.	American Zoologist known for his research into the anatomy and embryology of marine animals. Elected a Member of the National Academy of Sciences in 1884.

37)	BUCHAN, Alexander (1829-1907)	Atmospheric and Oceanic Circulation.	Meteorologist. Medal known with document, held at St. Columba's Hospice, Challenger Lodge, Edinburgh. Secretary of the Scottish Meteorological Society in Edinburgh. MA; LLD. FRS (1898).
38)	BUSK, George (1807-86)	Polyzoa.	Medal known. Named "GEORGE BUSK", and awarded posthumously. Ex-Surgeon, Royal Navy. Parasitologist, Zoologist and Palaeontologist. RS Royal Medal (1871); GS Wollaston Medal and Lyell Medal. X Club Member. ¹¹ FRS (1850); FGS. Busk appears in the group photograph of the Royal Society's scientific party onboard the Challenger (December 1872).
39)	CARPENTER, Philip Herbert (1852-91)	Comatulæ and Stalked Crinoids.	Medal awarded posthumously and sent to his wife. Crinoidologist (Zoologist & Palaeontologist). FRS (1885); FLS. Son of William Benjamin Carpenter (1813-85), a physiologist who contributed to the <i>Reports</i> , but is oddly absent from <i>Challenger</i> Medal List.
40)	CHUMLEY, James	Secretary to the Director & Editor.	Acknowledged in the <i>Challenger Reports</i> for his assistance.
41)	COMBER, Thomas	Contributor to the Narrative.	
42)	CREAK, Ettrick W. (1835-1920)	Magnetical Results.	Medal sent to Staff Commander Creak, Hydrographic Department, Admiralty, London. Medal exists to 'E.W. CREAK'. Promoted to Second Master, Dec. 9, 1858. Captain, RN, in 1901, and Director of Compasses in the RN's Hydrographer's Dept. Instructions for the set of magnetic instruments used by the 1901-04 British National Antarctic Expedition were supplied by Creak. FRS (1885); KCB (1901). MD; FRS (1891); FRSE.
43)	CUNNINGHAM, Daniel John (1850-1909)	Marsupialia.	
44)	CUNNINGHAM, Joseph Thomas (1859-1935)	Contributor to the Narrative.	Posted to the Royal College of Surgeons, London.
45)	DENDY, Arthur (1865-1925)	Monaxonida.	Zoologist. BSc; FRS (1908); FLS.
46)	DITTMAR, William (1833-92) (Wilhelm)	Composition of Ocean Water.	Chemist. FRS (1882); FRSE (1863); Fellow, Institute of Chemistry; Chemical Society of London's Graham Medal; Hon. LLD, Edinburgh University.
47)	FINSCH, Friedrich Hermann Otto (1839-1917)	Birds of Tongatabu and the Fiji Islands.	Naturalist. The Finsch Crater on the Moon is named in his honor.

48)	FORBES, William A.	Anatomy of Tubinares; Birds of Cape York, &c.	FLS; FGS; MBOU. Posted to Mrs. Forbes.
49)	FULTON, Thomas Alexander Wemyss (1855-1929)	Member of the Editorial Staff.	Medal known. Named "T. W. FULTON". MD (1884); FRSE.
50)	GIBSON, John	Analysis of Manganese Nodules.	
51)	GRAFF, Ludwig Von (1851-1924)	Myzotomida.	Zoologist.
52)	GÜNTHER, Albert Charles Lewis Gotthilf (1830-1914)	Shore Fish; Pelagic Fish; Deep-sea Fish.	MA; MD; PhD; FLS; FRS (1867). Royal Archive Winner (RS, 1878).
53)	HAECKEL, Ernst (1834-1919)	Radiolaria; Deep-sea Medusae; Deep-sea Keratosa.	Biologist & Philosopher. MD; PhD.; Hon. FRSE.
54)	HADDON, Alfred Cort (1855-1940)	Polyplacophora.	Zoologist & Anthropologist. Regarded as one of modern British anthropology. FRS (1899); MRJA.
55)	HARMER, Sidney Frederic (1862-1950)	Cephalodiscus.	Zoologist; FRS (1898).
56)	HEMSLEY, William Botting (1843-1924)	Botany of the Expedition.	Botanist and Taxonomist. FRS (1889).
57)	HENDERSON, John Robertson (1863-1925)	Anomura.	Medal known.
58)	HERDMAN, William Abbott (1858-1924)	Member of Editorial Staff. Tunicata.	Marine Zoologist and Oceanographer. President of the Liverpool Geological Society (1898-1900), being awarded the Society's Silver Medal (1922). Knighted (1922). DSc; FRS (1892); FLS; FRSE.
59)	HERTWIG, Richard Karl Wilhelm Theodor von (1850-1937)	Actiniaria.	Zoologist. Knighted (1910).
60)	HOEK, Paulus P.C. (1845-1914)	Cirripedia; Pycnogonida.	Marine Zoologist. Member, Royal Academy of Sciences (Netherlands).
61)	HORSLEY, Reginald Ernest	Member of Editorial Staff.	
62)	HOYLE, William Evans (1855-1926)	Member of Editorial Staff. Cephalopoda.	Malacologist. MA (Oxon.); MRCS; FRSE.
63)	HUBRECHT, A.A.W. (1853-1915)	Nemertea.	Zoologist. LLD; CMZS.
64)	HUXLEY, Thomas Henry (1825-95)	Spirula.	Medal awarded posthumously and sent to his wife. FRS (1851); Royal Medal (1852); President of the Royal Society (1883-85). X Club member. ¹² Known as "Darwin's

			Bulldog".
65)	KÖLLIKER, Rudolph Albert Von (1817-1905)	Pennatulida.	FRS (1860); Copley Medal (1897); FMRS; Hon. FRSE.
66)	LANKESTER, Edwin Ray (1847-1929)	Invertebrate Zoologist	Medal sent to the Zoology Laboratory, University of Oxford. A disciple of Huxley, Lankester's father (Edwin) was medical doctor and friend of Huxley's. Director of London's Natural History Museum from 1898-1907. FRS (1875).
67)	LENDENFELD, Robert Von (1858-1913)	Phosphorescent Organs of Fish.	Spongiologist and Cnidariologist.
68)	LÉOPOLD, Alexandre Guillaume, Marquis de Folin (1817-96)	Caecidae.	Malacologist.
69)	LINSTOW, Otto Von (1842-1916)	Entozoa.	Helminthologist. MD.
70)	LYMAN III, Theodore (1833-97)	Ophiuroidea.	Naturalist. Served in the American Civil War as a Lieutenant-Colonel and Aide-de-Camp on Gen. George G. Meade's staff (1863-65).
71)	McINTOSH (M'Intosh), William Carmichael (1838-1931)	Annelida; Cephalodiscus; Phoronis.	Botanist and Marine Zoologist. Professor of Natural History, University of St. Andrews (1882-1917). MB; LLD; FRS (1877).
72)	Mill, Hugh Robert (1861-1950)	Contributor to the Narrative	Geographer and for years Librarian at the RGS.
73)	MILNE-EDWARDS, Alphonse (1835-1900)	Ornithologist and Carcinologist	Medal sent to the Natural History Museum, Paris.
74)	MURRAY, George Robt. Milne (1858-1911)	Cryptogamic Botanist	Published <i>An Introduction to the Study of Seaweeds</i> (1895). Posted to the British Museum, London.
75)	PARKER, William Kitchen (1823-90)	Development of the Green Turtle.	Marine Zoologist and Naturalist. FRS (1865); Royal Medal (1866).
76)	PELSENEER, Paul (1863-1945)	Pteropoda; Anatomy of Mollusca; Spirula.	Chemistry Teacher and Amateur Malacologist. DSc.
77)	PIGOTT, T. Digby (1840-1927)	Ornithology.	Medal known. Named "T. DIGBY PIGOTT". Ornithologist. CB (1890); Knighthood (1906).
78)	POLÉJAEFF, Nicolai Nikolaevich	Calcarea; Keratosa.	Spongiologist. MA.
79)	QUELCH, John Joseph (1854 - ?)	Reef Corals.	Zoologist. BSc (Lond.).
80)	RENARD, Alphonse-François (1842-1903)	Deep-sea Deposits; Petrology of St. Paul's Rocks.	Geologist and Petrographer. Bigsby Medal (London Geological Society, 1885).

81)	RIDLEY, Stuart Oliver (1853-1935)	Monaxonida.	Medal known. Named "S.O. RIDLEY". Spongiologist. MA; FLS.
82)	SALVADORI PALEOTTI, Count Adelaro Tommaso (1835-1923)	Birds of Ternate, Amboyna, &c.	Ornithologist. Last of the original Honorary Fellows of the AOU.
83)	SALVIN, Osbert (1835-98)	Steganopodes; Impennes; Procellariidae.	Ornithologist. The Godman-Salvin Medal of The British Ornithologists' Union is named after him.
84)	SARS, Georg Ossian (1837-1927)	Schizopoda; Cumacea; Phyllocarida.	Marine Biologist.
85)	SAUNDERS, Howard (1835-1907)	Laridae.	Ornithologist. FZS; FLS.
86)	SCHULZE, Franz Eilhard (1840-1921)	Hexactinellida.	Zoologist.
87)	SCLATER, Philip Lutley (1829-1913)	Birds of the Admiralty Islands, &c.	Ornithologist. FRS (1861); FLS; Co-founder of The Society for the Preservation of Wild Fauna of the Empire (1903).
88)	SELENKA, Emil (1842-1902)	Gephyrea.	Marine Zoologist.
89)	SLADEN, W. Percy (1849-1900)	Asteroidea.	Marine Zoologist. FZS; FLS; FGS.
90)	SMITH, Edgar Albert (1847-1916)	Lamellibranchiata; Heteropoda.	Malacologist. At the British Museum. FZS.
91)	SOLLAS, William Johnson (1849-1936)	Tetractinellida.	Geologist. Other scientific interests included zoological and anthropological subjects. In his later years, he became a leading authority in the latter. MA; DSc; LLD; FRS (1889).
92)	STEBBING, Thomas Roscoe Rede (1835-1926)	Amphipoda.	Cleric and Gentleman-Naturalist. MA; FRS (1896).
93)	STUDER, Theophil (1845-1922)	Alcyonaria.	Zoologist. MD and PhD.
94)	TAIT, Peter Guthrie (1831-1901)	Pressure Errors of the Thermometers; Physical Properties of Water.	Physicist and Mathematician. FRSE; Royal Society's Royal Medal (1886); Hon. Fellow of Edinburgh Math. Society.
95)	THÉEL, Hjalmar (1848-1937)	Holothurioidea.	Zoologist.
96)	THISELTON-DYER, Dr. William Turner (1843-1928)	Systematic Botanist	Medal sent to the Royal Gardens, Kew. Director of Kew (1885-1905). FRS (1880); KCMG; CIE. He was Sir Joseph Dalton Hooker's son-in-law.
97)	THOMSON, Sir John Arthur (1861-1933)	Translator of Zoological Reports.	Naturalist. Knighted (1930).

98)	TURNER, Sir William (1832-1916)	Cetacea; Pinnipedia; Human Skeletons.	Anatomist. MB; LLD; FRS (1877); FRSSL&E.
99)	WATERS, Arthur William (? - 1930)	Polyzoa.	Zoologist. FLS; FGS.
100)	WATSON, Morrison (1846-85)	Anatomy of the Spheniscidae.	Anatomist. MD; FRS (1884); FRSE.
101)	WATSON, Rev. Robert Boog (1823-1910)	Gasteropoda.	Medal known. Chaplain, Royal Army; Zoologist. LLD; FLS; FGS; FRSE.
102)	WRIGHT, Edward Perceval (1834-1910)	Alcyonaria.	Marine Zoologist. MA; MD; Sec. MRJA.

OTHER RECIPIENTS

	NAME	SPECIALTIES AND/OR POSITIONS	NOTES
103)	ANDERSON, W. S.	?	
104)	BLACK, William S.	Edinburgh Artist	Designer of the Challenger Medal
105)	DICKSON, Henry Newton (1866-1922)	Edinburgh hydrographer	Friend of Sir John Murray.
106)	FOSTER, Michael (1836-1907)	Physiologist	FRS (1872). KCB (1899). From 1881-1903, one of the secretaries of the Royal Society.
107)	GOSCHEN, Rt. Hon. George Joachim (1831-1907)	Member of Parliament	First Lord of the Admiralty (1871-74 and 1895-1900). Chancellor of the Exchequer (1886-1892). The latter position may be the reason he was issued a medal. Goschen may have assisted with funds to publish the <i>Reports</i> .
108)	IRVINE, Robert (1839-1902)	Chemist	FRSE. Co-authored papers in the Proceedings of the Royal Society of Edinburgh. Among others, he was one of the instigators of the Scottish Marine Station.
109)	MONTEITH, Dr. James (1865-1934)	?	Medal known. Medal List states: "handed to Mrs. Monteith, per Lily Murray August 27, 1895".
110)	MURRAY, Mrs.	?	Acknowledged in the <i>Challenger Reports</i> for her assistance. Evidently not Sir John Murray's wife.
111)	NANSEN, Fridtjof (1861-1930)	Polar Explorer	Presented personally by Dr. Murray on Feb. 15, 1897. The medal was doubtlessly given in recognition of the oceanographic work carried out by Nansen during the <i>Fram</i> Expedition (1893-96).

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| 112) PULLAR,
Laurence
(1838-1926) | Financer (?) | <p>Medal known. Named "LAURENCE PULLAR". FRSE (1903) and FRGS; LLD, University of Edinburgh (1926) in recognition of his generosity in the promotion of scientific research. Pullar was a life-long friend of Sir John Murray, and this association drew him into his interest in scientific research. With Pullar's financial aid, a steam yacht was built and equipped for oceanographical work near the shores of Scottish sea-lochs, which enabled Murray to carry on these investigations for several years. This is but one example of Pullar's financial assistance toward the advancement of science. It is claimed in some writings that Murray did not tolerate the red tape of government, and when the Treasury became stubborn, he spent his own money to bring out volumes of the <i>Report</i>.¹³ It would seem possible that Pullar also put money toward the publishing, and perhaps as a result of these financial contributions, was given a <i>Challenger</i> Medal by Murray. To date, however, the author has not uncovered any direct link between Pullar, the <i>Challenger</i> Expedition or the <i>Reports</i>.</p> |
| 113) RICHARDS,
George Henry,
(1820-1896) | Rear Admiral | <p>FRS (1866); CB (Civil/1871); Knighted (1877); KCB (1886); Arctic 1818-55 Medal (Commander/HMS <i>Assistance</i>/1852-54). Richards had an extensive background as a surveying officer, and in 1864, was appointed Hydrographer of the Navy. He retired from the RN in January 1874, and in December of that year, served on a committee to plan the Arctic Expedition of 1875. Richards appears in the group photograph of the Royal Society's scientific party onboard the <i>Challenger</i> (December 1872)</p> |
| 114) THE ROYAL
SOCIETY | | <p>Sent to Burlington House, London.</p> |
| 115) SCOTT, A.R. | ? | <p>Hand delivered to recipient at the Challenger Office. Acknowledged in the <i>Challenger Reports</i> for his assistance.</p> |
| 116) SCLATER,
Miss | Assistant? | <p>Presumably the daughter of Philip Lutley Sclater. Acknowledged in the <i>Challenger Reports</i> for her assistance.</p> |
| 117) SMITH, Irvine | ? | <p>Issued unengraved.</p> |
| 118) TURBYNE,
Alexander
(?-1905) | Merchant
Captain | <p>In the <i>Report</i>, Turbyne is described as "being in charge of the Marine Biological Station at Millport" and having been for many years "Captain of Dr. Murray's steam Yacht 'Medusa' ". The Marine Biological Station at Millport was established on the Isle of Cumbrae in the Firth of Clyde, in the spring of 1885. The Report relates that Turbyne "worked for over 13 years under Dr. Murray's instructions (including 10 years consecutively)", conducting practical investigations "while matters strictly scientific were undertaken and prepared for press by men with a scientific training." The above would explain the award of the <i>Challenger</i> Medal. At some point, Turbyne live aboard The <i>Ark</i>, a lighter converted into a floating laboratory by Murray. The <i>Ark</i> marked the establishment of the Marine Station at Millport, the oldest in Scotland. Turbyne evidently went to work for the Fisheries Department of Cape Colony in 1898, and died as a result of a</p> |

- gun accident in East London, South Africa, on 15 July 1905.
- 119) WEIR, Mrs. ? Sent "C/O James Murray, Supt. Can. Pac. Rl [Canadian Pacific Railroad], Winnipeg, Manitoba'. Acknowledged in the *Challenger Reports* for her assistance.
- 120) One unengraved medal Taken to Holland by Dr. Murray.

Addendum

Below are individuals who do not appear on the *List of Recipients of the Challenger Medal*, but who were evidently in every way entitled to the award, whether through participation in the voyage or having contributed to the *Reports*. Though it is possible that medals were not issued to some of these men due to their deaths, Busk, Carpenter and Huxley are a few examples of posthumously awarded medals. Perhaps some families could not be traced? As for the naval officers/warrant officers, excepting Commander Lloyd, it is possible that the other RN men had left the Service and could not be traced. But this again does not offer a certain answer to the question of why these men do not appear on the *List*.

ROYAL NAVY		RANKS	NOTES
1)	COX, Richard	Boatswain	In charge of stores.
2)	CROSBIE, Alexander	Staff Surgeon	
3)	FERGUSON, James H.	Chief Engineer	In charge of engines.
4)	HARSTON, Henry Cuthbert Eagles	Sub-Lieutenant (1852-76)	Son of an RN Captain. Henry Harston died on June 6, 1876, and according to the death certificate, he committed suicide 'as a result of taking chloral while in a state of temporary insanity'.
5)	LLOYD, Edward W.	Sub-Lieutenant	Retired Commander on Sept. 15, 1899. Emergency List, 1901. Cmdr., Tyneside Division, RNVR, April 1, 1905. In charge of Ordnance Dept. of Messrs. Armstrong, Witworth & Co., Elswick. CB (Civil) on the coronation of King George V, June 19, 1911.
6)	MARCOM, Alfred	Asst. Surgeon	
7)	OLDHAM, Cecil F.	Sub-Lieutenant	
8)	WESTFORD, Fredk. W.	Carpenter	
CIVILIAN SCIENTISTS		SPECIALTY	NOTES
9)	BATE, Charles Spence (1819-89)	Macrura.	Invertebrate Zoologist and practicing Dentist. Licentiate Royal College of Surgeons; President, Odontological Society (1885). FRS (1861); FLS.

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|---|---------------------------|--|
| 10) BRADY, Henry Bowman
(1835-91) | Foraminifera. | FRS (1874); FLS; FGS. |
| 11) CARPENTER, William Benjamin
(1813-85) | Orbitolites. | Physiologist who published extensively in fields as far apart as mental physiology, microscopy, marine biology and religion. Lyell Medal (1883). CB; MD; LLD; FRS (1844); FGS. Father of Philip Herbert Carpenter. |
| 12) CASTRACANE degli Antelminelli, Conte Francesco
(1817-99) | Diatomaceae. | Biologist. He was one of the first to introduce micro-photography into the study of biology. |
| 13) DAVIDSON, Thomas
(1817-85) | Brachiopoda. | Palaeontologist. FRS (1857)-Royal Medal (1870); FGS-Wollaston Medal (1865); Honorary degree by the University of St. Andrews (1882); FLS; VPPS. |
| 14) GARROD, Alfred Henry
(1846-79) | Anatomy of Carphophaga. | Vertebrate Zoologist. FRS (1876). |
| 15) HAY, Arthur (9th Marquis of Tweeddale)
(1824-78) | Birds of the Philippines. | The <i>Ornithological Works of Arthur, Ninth Marquis of Tweeddale</i> (1881). Served as a soldier in India and the Crimea. President of the Zoological Society of London. FRS (1871). |
| 16) MIERS, Edward John
(1851-1930) | Brachyura. | Curator of the Natural History Museum in London (1872-85). FZS; FLS. |
| 17) WHITE, Francis Buchanan
(1842-94) | Pelagic Hemiptera. | Entomologist. MD; FLS. |

Summary of Sir John Murray's Titles & Awards, Etc.

Note: Murray is *not* shown on the *List* as receiving a medal. This may well be an indication of the gentleman's modesty, as he evidently did not have a medal engraved for himself. Still, the total number of medals cast is unknown, so he more than likely kept an un-named specimen for himself.

MURRAY, Sir John (1841-1914)	Naturalist	Considered the founder of modern oceanography. Seven of the 50 volumes of the <i>Challenger Reports</i> were written largely or entirely by Murray. He was also the Editor, contributor to the Narrative and wrote the Summary of Results. Deep-Sea Deposits. FRS (1896); FRSE. Cuvier Prize & Medal (Institute of France/1894); Humboldt Medal (Berlin Society of Geography/1895); Royal Medal (RS/1895); Founders Medal (RGS/1895); Neill Medal (RSE/1880); Makdougall-Brisbane Medal (RSE/1886); Order of Pour le Mérite for Arts & Sciences (Prussia/1898); Cullum Medal (AGS/1899); Clarke Memorial Medal (RSNSW/1901); Lütke Medal (IRSG/1904); Livingstone Medal (RSGS/1910); Grand Cross of the Royal Order of St.
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Olav (Norway/1910); Helen Culver Medal (GSC/1911); Vega Medal (SAGS/1912); Agassiz Gold Medal (Academy of Sciences, Washington/special copy/1913). Murray created the Alexander Agassiz Medal in honor of his friend. The medal is awarded for an original contribution in the science of oceanography. KCB (1898). In 1886, he put forth a plan to send two ships on a major Antarctic expedition. Although it was never put into action, eight years later, the RGS used his ideas to promote the British National Antarctic Expedition.

Abbreviations

Actg. - Acting
AOU - American Ornithologists' Union
Asst. - Assistant
CB - Companion of the Order of the Bath
CIE - Companion of the Most Eminent Order of the Indian Empire
Cmdr. - Commander
CMZS - Charter Member Zoological Society (?)
CVO - Commander Victorian Order
DSO - Distinguished Service Order
Engr. - Engineer
FGS - Fellow of the Geological Society
FLS - Fellow of the Linnean Society
FRCSI - Fellow of the Royal College of Surgeons in Ireland
FRGS - Fellow of the Royal Geographical Society
FRMS - Fellow of the Royal Meteorological Society
FRS - Fellow of the Royal Society
FRSE - Fellow of the Royal Society of Edinburgh
FRSSL&E - Fellow of the Royal Societies of London and Edinburgh
FZS - Fellow of the Zoological Society of London
GSC - Geographic Society of Chicago
Hon. - Honorary
IGS - India General Service Medal 1854-95
IRGS - Imperial Russian Geographical Society
KCB - Knight Commander of the Order of the Bath
KCMG - Knight Commander of the Most Distinguished Order of St. Michael and St. George
LLD - Legum Doctor (Doctor of Law)
MB - Bachelor of Medicine
MID - Mentioned in Despatches
MRCS - Member of the Royal College of Surgeons
MRIA - Member Royal Irish Academy
RHS - Royal Humane Society
RN - Royal Navy
RNVR - Royal Naval Volunteer Reserve
RS - Royal Society (London)
RSA - Royal Society of Arts
RSE - Royal Society of Edinburgh
RSGS - The Royal Scottish Geographical Society
RSNWS - The Royal Society of New South Wales

Acknowledgements

Ms. Clara Anderson
Dr. David C. Bossard
Dr. David M. Damkaer
Mr. Roy L. Davids
Dr. Margaret Deacon
Dix Noonan Webb (DNW)
Ms. Judith Farrington
Mr. Daniel Fearon
Ms. Heather Jaggers
Barbara Leith
Mr. Mark Sikes
Mr. John I. Simper
Ms. Barbara Tomlinson
Mr. Martin Wagner
Mr. Robert J. F. Watt
Mr. Bryan Williamson

absolute.Astronomy.com. 2005.

http://www.absoluteastronomy.com/encyclopedia/O/Ot/Otto_Finsch.htm

Alder, Jenny. 2005. *The Stebbing Collection*. Foyle Special Collections Library, King's College London. <http://www.kcl.ac.uk/depsta/iss/library/speccoll/stebbing.html>

<http://www.altavista.com>. 2005.

<http://www.answers.com>

Archives Hub. 2005. Collection of Correspondence of Frank Evers Beddard (1858-1925)

<http://www.archiveshub.ac.uk/index.html>

Biographical Database of the British Chemical Community, 1880-1970

<http://www.open.ac.uk/ou5/Arts/chemists/person.cfm?SearchID=5086>

Boog-Watson, W.N. 1967. *Sir John Murray, A Chronic Student*. Edinburgh: University of Edinburgh Journal, Autumn.

Bourner, Karen. 2000. *Laurel or Bay - Laurus Nobilis*.

<http://www.geocities.com/Athens/Atlantis/3699/laurel.htm>

Brown, Laurence. 1987. *A Catalogue of British Historical Medals 1837-1901*. London: Seaby.

Brunton, Eileen V. Second Edition, 2004. *The Challenger Expedition, 1872-1876: A Visual Index*. London: The Natural History Museum.

George Busk.

<http://www.1911encyclopedia.org>

The Catholic Encyclopedia.
<http://www.newadvent.org/>

The Church of Jesus Christ of Latter-Day Saints (Census)
http://www.familysearch.org/Eng/Search/census/main_census.asp?indid=&spouse_id=

Clowes, Sir Wm. Laird. 1903. *The Royal Navy, A History From the Earliest Times to the Death of Queen Victoria*. (Vol. 7) London: Sampson Lowe, Marston and Company.

Coakley, F. (editor). *Who was Who?* 2004. *William Abbott Herdman, 1858-1924*.
<http://www.isle-of-man.com/manxnotebook/people/antiqarn/wherdman.htm>

Cook, G.C. 1997. *George Busk FRS (1807-1886), nineteenth-century polymath: surgeon, parasitologist, zoologist and palaeontologist*. Journal of Medical Biography. London: Royal Society of Medicine Press Ltd.

Crane, Walter. 1897. *Challenger Expedition Reports. Portraits of the Contributors, Reproduced from the Photographs Presented by Them to John Murray, etc*. London: Dulau & Co.

Davie, Peter (Compiler). 2001. *MALACOSTRACA Latreille, 1802*.
www.deh.gov.au/cgi-bin/abrs/fauna/details.pl

Dictionary of National Biography 20th Century. 1901-1911 Supplement.

Dr. Murray's Titles, Medals, &c. (handwritten document). Murray Library. The Natural History Museum, London.

Edinburgh University Data Library (Handlists of Manuscript Collections).
<http://datalib.ed.ac.uk/projects/scimss/webguide/handlist.html>

Eimer, Christopher. 1987. *British Commemorative Medals and their values*. London: Seaby.

Enersen, Ole Daniel. 2001. *Who Named It? Richard Karl Wilhelm Theodor von Hertwig*.
<http://www.whonamedit.com/doctor.cfm/2105.html>

Everson, Gordon R. 1978. *The South Africa 1853 Medal*. London: Samson Books Ltd.

Fact Monster. 2005.
<http://www.factmonster.com/ce6/people/A0848559.html>

Fellows of the Royal Society of Edinburgh. 2003.
<http://www-groups.dcs.st-and.ac.uk/~history/Societies/FRSE.html>

Gazetteer for Scotland. 2005.
<http://www.geo.ed.ac.uk/scotgaz/people/famousfirst2032.html>

The Geological Society.
<http://www.geolsoc.org.uk/template.cfm?name=geohome>

Gill, Mrs. 1880. *Six Months in Ascension: An Unscientific Account of a Scientific Expedition*. London: John Murray.

Hansson, Hans. G. undated. Biographical Etymology of Marine Organism Names.
<http://www.tmbi.gu.se/libdb/taxon/personetymol/petymol.b.html>

Hatch, Dr. Robert A. 2003. project bio-dic (*Darwin's Friends and Contemporaries*).
<http://http://web.clas.ufl.edu/users/rhatch/pages/13-NDFE/darwin/05-Darwin-friends.htm>

HMS *Challenger*.
<http://http://aquarium.ucsd.edu/challenger/introduction.cfm>

HMS *Challenger*. Quarterly List for the period Nov. 15 - Dec. 31, 1872 and Quarterly List for the period April 1 - June 12, 1876.

Illinois Mycological Association <http://www.ilmyco.gen.chicago.il.us/index.html>

International Journal of Naval History. 1996. *The German Challenger of Neptune*.
<http://www.ijnhonline.org/>

International Union of the History of Philosophy and Science Division of the History of Science Commission of Oceanography. 2000.
http://www.ijnhonline.org/volume3_number2-3_AugDec04/ocgr%20pdf%20archive/HISTOC12.pdf

Jensen, J. Vernon. 1970. *The X Club: Fraternity of Victorian Scientists*. The British Journal for the History of Science. Cambridge: Cambridge University Press.

Joslin, E.C., Litherland, A.R., Simpkin, B.T., 1988. *British Battles & Medals*. London: Spink & Son Ltd.

Kemp, Peter (editor). 1972. *The Oxford Companion to Ships & the Sea*.

King's College London College Archives. 2004.
http://www.aim25.ac.uk/cgi-bin/search2?coll_id=740&inst_id=6

Lancaster University Pamphlet. 1976.
<http://www.lancs.ac.uk/users/history/studpages/lanchhistory/vicky/turner.htm>

Edwin Ray Lankester (1847-1929) <http://www.nceas.ucsb.edu/~alroy/lefa/Lankester.html>

Linklater, Eric. 1972. *The Voyage of the Challenger*. New York: Doubleday and Company Inc.

List of Recipients of the Challenger Medal. August 1895 [- February 1897]. (handwritten document). Murray Library. The Natural History Museum (London).

Litherland, A.R. & Simpkin, B.T. 1990. *Spink's Standard Catalogue of British and Associated Orders, Decorations & Medals with Valuations*. London: Spink and Son Ltd.

Living Rocks of Mexico. 2004. *The Who's Who of Ariocarpus*.
<http://www.living-rocks.com/people.htm>

Mamiya Medical Heritage Center <http://hml.org/mmhc/mdindex/sloggett.html>

McManus, B. Minerva.
<http://www.vroma.org/~araia/minerva.html>

Meijer, T. 2004. *Ice-Age Molluscs*.
<http://web.inter.nl.net/users/Meijer.T/tm/paginas/an-arch-bpers-h.htm>

Missouri Association for Creation. 2004.
[http:// www.gennet.org/facts/haeckel.html](http://www.gennet.org/facts/haeckel.html)

Moore, P. G. 2002. *Capt. Alexander Turbyne and the origins of the Marine Station at Millport*. London, *The Linnean*.

Morgan, Daniel. 2001. *Descendants of James Bannerman*.
<http://www.mit.edu/~dfm/genealogy/bannerman.html>

The National Academies.
<http://nationalacademies.org/>

National Maritime Museum. Greenwich. Ms. Barbara Tomlinson, Curator, Antiquities.

The Natural History Museum (London)
www.nhm.ac.uk/research-curation/collections-library/collections-management/

Nature. November 1885. *Presidential Address to the Royal Society*.
<http://aleph0.clarku.edu/huxley/UnColl/Nature/RS85.html>

Nature. 1895. *A Souvenir of "Challenger" Work*. London.

Naval Who's Who 1917. 1981 Reprint. Polstead, Suffolk. J.B. Hayward & Son.

Navigational Aids for the History of Science, Technology & the Environment (NAHSTE).
http://www.nahste.ac.uk/isaar/GB_0237_NAHSTE_P0380.html

Navy Lists. Various extracts 1844-79.
[http:// www.pbenyon1.plus.com/Nbd/Index.html](http://www.pbenyon1.plus.com/Nbd/Index.html)

Nichols, David. 2003. *A Biography of Percy Sladen (1849-1900)*.
<http://www.linnean.org/contents/publications/pubs/sladen.pdf>

North Dakota State University (Department of Entomology).
http://www.ndsu.nodak.edu/ndsu/rider/Pentatomoidea/Biographical/lit_cited.htm

Obituary Notices. 1928. *Proceedings of the Royal Society of Edinburgh*. Edinburgh: Neill and Company, Ltd.

The Open University.
[http:// www.open.ac.uk/](http://www.open.ac.uk/)

Poulsom, Lieut. Col. N.W. & Myres, CB, Rear Admiral J.A.L. 2000. *British Polar Exploration and Research: A Historical and Medallie Record with Biographies 1818-1999*. London. Savannah Publications.

Price, Brian. 1999. *Sir John Murray (1841-1914) - Founder of Modern Oceanography*.
<http://www.geos.ed.ac.uk/public/JohnMurray.html>

Rehbock, P.F. (editor). 1992. *At Sea with the Scientifics: The Challenger Letters of Joseph Matkin*. Honolulu: University of Hawaii Press.

Reid, Justin. 2004. Maclear Family Homepage.
[http:// www.users.bigpond.com/nebula72/](http://www.users.bigpond.com/nebula72/)

Report of the Scientific Results of the Voyage of H.M.S. Challenger, etc.
<http://www.19thcenturyscience.org/HMSC/HMSC-INDEX/index-linked.htm>

Rice, Tony (1986) *British Oceanographic Vessels 1800-1950* London: The Ray Society.

Rice, Tony. no date. *Fame and fortune: The pay of scientists and sailors on the Challenger (parts I and II)*. <http://www.soc.soton.ac.uk/OTHERS/CSMS/OCHAL/challpay.htm>

The Royal Botanical Gardens, Kew.
<http://www.rbgekew.org.uk/index.html>

The Royal Scottish Geographical Society.
<http://www.geo.ed.ac.uk/~rsgs/awards/LiviMed.htm>

The Royal Society.
<http://www.royalsoc.ac.uk/>

The Royal Society of New South Wales.
http://nsw.royalsoc.org.au/medals/clarke_medal.html

Ryne, Linn. Undated. Fridtjof Nansen: *Man of Many Faces*. <http://www.mnc.net/norway/nansen.htm>

St. Andrews University Library Special Collections. 2001. *William Charmichael McIntosh (1838-1931)*. <http://specialcollections.st-and.ac.uk/mssmcin.htm>

St. Columba's Hospice, Challenger Lodge. Edinburgh. Mrs. Pam Rodger, Appeals Officer.

Schmid, Rudolf. 2004. *Bamboozled by Botany, Beatrix Bypass Bigoted Biology, Begins Babying Bountiful Bunnies: or Beatrix Potter [1866-1943] as a Mycologist: The Period Before Peter Rabbit and Friends* <http://ist-socrates.berkeley.edu/~schmid/articles/Schmid1999--bamboozled.html>

Scottish United Services Museum. Edinburgh. Mr. Charles J. Burnett, Curator of Fine Art and Medals.

Shipley, Sir Arthur E. *Sir John Murray, A Great Oceanographer*.¹³

Sindemark, Karin. 1998. *Hjalmar Théel - mångsidig everttebratforskare*.
<http://www2.nrm.se/ev/dok/theel.html.se>

Sir Michael Foster http://64.1911encyclopedia.org/F/FO/FOSTER_SIR_MICHAEL.htm

Smith, Charles. 2005. The Alfred Russel Wallace Page.
<http://www.wku.edu/%7Esmithch/index1.htm>

Smith, Charles H. 2005. *Some Biogeographers, Evolutionists and Ecologists: Chrono-Biographical Sketches*. <http://www.wku.edu/~smithch/chronob/SCLA1829.htm>

Stadtarchiv Schaffhausen. <http://www.stadtarchiv-schaffhausen.ch/>.

StanKlos.com. 2000. Virtual American Biographies. <http://www.famousamericans.net>

The Times Obituaries., July 19, 1907 & Feb. 25, 1924.

Today in Science History. 2004.

[http:// www.todayinsci.com/cgi-bin/indexpage.pl?http://www.todayinsci.com/4/4_20.htm](http://www.todayinsci.com/cgi-bin/indexpage.pl?http://www.todayinsci.com/4/4_20.htm)

Trilling & Bloom. 1973. *Biography of Thomas Henry Huxley (1825-1895)*.
http://www.ub.rug.nl/eldoc/dis/science/e.t.buitenhuis/biography_of_thomas_henry_huxley.pdf

University of Bristol. 2005.
[http:// www.gly.bris.ac.uk/www/history/biogs/sollas.html](http://www.gly.bris.ac.uk/www/history/biogs/sollas.html)

Wikipedia. 2005.
http://en.wikipedia.org/wiki/Albert_von_Kolliker

Wilson, A. & McEwen. 1939. *Gallantry*. London: Oxford University Press.
[http:// www.zoonomen.net/bio/bios.html](http://www.zoonomen.net/bio/bios.html). 2005.

Footnotes

- 1 Boog-Watson, 1967.
- 2 Nature, 1895.
- 3 Ibid.
- 4 McManus.
- 5 P. Rodger, Appeals Officer, March 27, 1995.
- 6 Bourner, 2000.
- 7 Linklater, 1972 and Brown, 1987.
- 8 C. J. Burnett, Curator of Fine Art and Medals, Jan. 12, 1995, and Eimer, 1987.
- 9 Rodger, op.cit. and B. Tomlinson, Curator, Antiquities, Aug. 5, 1998.
- 10 Tomlinson, ibid.
- 11 The X Club was a dinner club formed in 1864 by nine eminent scientists, who had long been intimate friends, so they would not drift apart due to their various duties, and in order to further the cause of science. The Club held monthly meetings from October to June, and was extremely active for two decades, but this activity gradually lessened. The regular communication helped X Club members to gather their efforts on behalf of science against what they felt to be the obstructionist activities and ideas of conservative scientists, certain theologians, and non-scientific society figures. Members at the birth of the X Club were: George Busk (1807- 86), Joseph D. Hooker (1817-1911), Herbert Spencer (1820-1923), John Tyndall (1820-93), Edward Frankland (1825-99), Thomas Henry Huxley (1825-95), Thomas Archer Hirst (1830-92) and John Lubbock (1834-1913). William Spottiswoode (1825-83) became the ninth member of the Club at its second meeting. Much of the discussion at the meetings focused on the affairs of the Royal Society. By 1864, all were Fellows of the Royal Society, except Spencer who, due to principle and possible resentment, flatly refused to agree to his being nominated. The X Club exerted important influence in the Royal Society, in the British Association, in various other scholarly societies, in the Royal Institution, and in the publishing of scientific works.
- 12 Linklater, 1972

13 Shipley, Sir Arthur E. (Zoologist 1861-1927)

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Revised April 20, 2007