

The *Challenger* Medal Roll (1895)

(Updated March 22, 2009)

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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

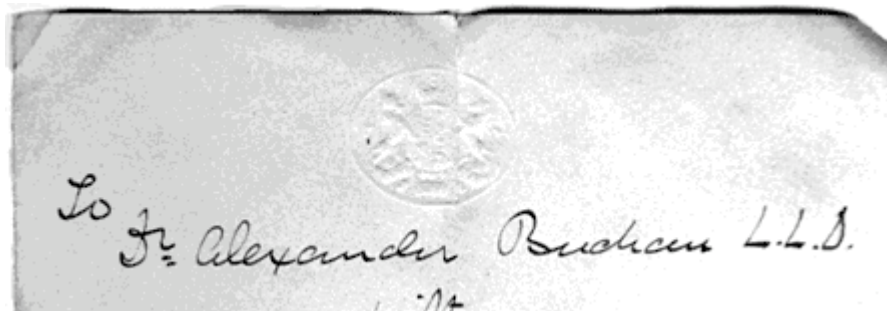
Jan.14 96

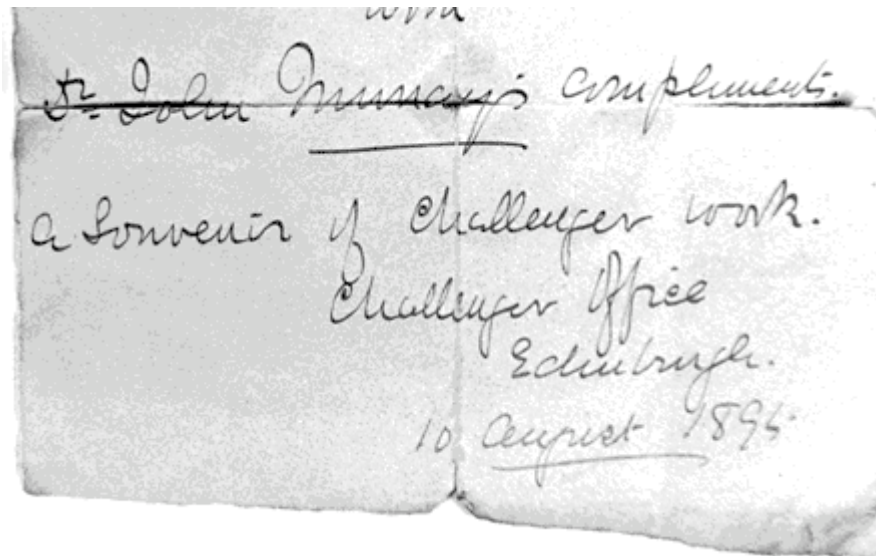
111 medals engraved
 1 Dr. Murray
 1 Mr. Irvine Smith
7 in office
 120

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 | <p>Medal sent to Captain Aldrich, HMS Hawke (Mediterranean Squadron), Admiralty, London.</p> <p>Medal known with document in the NMM Collection; named "PELHAM ALDRICH". Donated by Aldrich's great-nephew.</p> <p>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.</p> |
| 3) | ALLEN, Alfred
J. | Engineer | <p>Shown as Allan on the List. Medal sent to a residence, but then forwarded to the Admiralty.</p> <p>Medal known in Royal Naval Museum (Portsmouth) and named 'A.J. ALLEN'.</p> |
| 4) | BALFOUR,
Andrew F. | Sub-Lieutenant | <p>Medal sent to Commander Balfour, HMS <i>Penguin</i> (Australian Station), Admiralty, London. Balfour captained the <i>Penguin</i> from 1893-95. In 1895, he made three soundings in over 5,000 fathoms in the Kermadec Trench, the deepest obtained to that date.</p> |
| 5) | BETHNELL,
George R. | Lieutenant | <p>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.</p> |
| 6) | BROMLEY,
Arthur C.B. | Lieutenant | <p>Assistant Surveyor, 3rd Cl. Medal sent to Captain Bromley, HMS <i>Endymion</i>, (Channel Squadron), Admiralty, London.</p> |
| 7) | CAMPBELL,
Lord George G.
(1850-1915) | Sub-Lieutenant | <p>Log-Letters from The <i>Challenger</i> (London, 1877).</p> |
| 8) | CARPENTER,
Alfred | Lieutenant | <p>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.</p> |
| 9) | CHANNER,
Arthur | Sub-Lieutenant | <p>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.</p> |

- 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. Medal known and in the possession of Higham's great-grandson in Canada. Higham's father was a shipbuilder in Chatham, Kent (Higham Shipyards, which closed c. 1904). Robert Higham rose to the rank of Chief Carpenter, retiring at Halifax, Nova Scotia (his last posting) in 1900 or 1901. He died in Montreal in 1934 and is buried in the Mount Royal Cemetery in that city.
- 12) HOWLETT, William A. Asst. Engr. 2nd Cl. Medal known. 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 Fiott 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 Engineer Medal delivered to Therapia, St. Andrews Road, Southsea. *The Cruise of HMS Challenger* (London, 1880).
James Joseph
(?-1906)
- 21) SWIRE, Herbert Sub-Lieutenant Medal sent to Commander Swire, HMS Australia,
(1851-1934) Southampton. *The Voyage of the Challenger* (two volumes,
limited edition; London, 1937).
- 22) THOMSON, Captain In charge of survey. Contributor to the *Reports*. Medal sent to
Frank Tourle (1875-76) Thomson at The Palace, Hampton Court, London.
- 23) TIZARD, Staff Cmdr. Asst. Surveyor, 1st Cl. Contributor to the Narrative and
Thomas H. Meteorological Observations. Medal delivered by Dr.
(1839-1924) 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, Writer, 3rd Cl. A Chief Petty Officer rating. Medal delivered to 113
Richard 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>Thalasa, an Essay on the Depth,
Temperature, and Currents of the Ocean</i> . (London, 1877).
Contributor to the Reports. A Swiss national. |
| 29) WILLEMOES-SUHM,
Dr. Rudolf von
(1847-75) | Naturalist | 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) Comatulae 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 *Reports*, but is oddly absent from *Challenger* Medal List.
- 40) CHUMLEY, James (1861-1948) Secretary to the Director & Editor. Acknowledged in the *Challenger Reports* 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 Member of the Editorial Staff. Medal known. Named "T. W. FULTON". MD (1884); FRSE.

- (1855-1929)
- 50) GIBSON, John (1855-1914) Professor of Chemistry. Analysis of Manganese Nodules. Medal known. Educated at Edinburgh Academy, and afterwards studied chemistry at Heidelberg, Germany, under Bunsen, Kopp, Kirchoff and others, graduating in 1876 as Doctor of Philosophy. On returning to Edinburgh he became assistant under Professor Crum Brown at the University of Edinburgh. In 1881, he was appointed chief assistant in the laboratory where he taught for 11 years. In 1892, Gibson was appointed Professor of Chemistry at Heriot-Watt College, a post he held up to the day of his death.
- 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); MRIA.
- 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.

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| 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, Rudoph 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. |

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| 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 *Challenger Reports* 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 *Fram Expedition* (1893-96).
- 112) PULLAR, Laurence (1838-1926) Financer (?) 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 *Report*.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 *Challenger Medal* by Murray. To date, however, the author has not uncovered any direct link between Pullar, the *Challenger Expedition* or the *Reports*.
- 113) RICHARDS, George Henry, (1820-1896) Rear Admiral FRS (1866); CB (Civil/1871); Knighted (1877); KCB (1886); Arctic 1818-55 Medal (Commander/HMS *Assistance*/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 *Challenger* (December 1872)
- 114) THE ROYAL SOCIETY Sent to Burlington House, London.
- 115) SCOTT, A.R. ? Hand delivered to recipient at the Challenger Office. Acknowledged in the *Challenger Reports* for his assistance.
- 116) SCLATER, Miss Assistant? Presumably the daughter of Philip Lutley Sclater. Acknowledged in the *Challenger Reports* for her assistance.
- 117) SMITH, Irvine ? Issued unengraved.
- 118) TURBYNE, Alexander (?-1905) Merchant Captain In the *Report*, 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 *Challenger Medal*. At some point, Turbyne live aboard *The Ark*, a lighter converted into a floating laboratory by Murray. The *Ark* 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 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.
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.	<i>The 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. 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
 FRCSE - 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
SAGS - Swedish Anthropological & Geographical Society
VPPS - Vice President of the Palaeontographical Society

Acknowledgements

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

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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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Updated March 22, 2009