**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** 1

**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). 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. 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. 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). 2

**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.

<table>
<thead>
<tr>
<th>Date</th>
<th>Medals Engraved</th>
<th>Officials</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>Dr. Murray</td>
<td>7 in office</td>
</tr>
<tr>
<td>1</td>
<td>Mr. Irvine Smith</td>
<td>120</td>
</tr>
</tbody>
</table>

Jan. 14 96

<table>
<thead>
<tr>
<th>Date</th>
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<th>Officials</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>Dr. Murray</td>
<td>7 in office</td>
</tr>
<tr>
<td>1</td>
<td>Mr. Irvine Smith</td>
<td>120</td>
</tr>
</tbody>
</table>

Feb. 15 97

<table>
<thead>
<tr>
<th>Date</th>
<th>Medals Engraved</th>
<th>Officials</th>
</tr>
</thead>
<tbody>
<tr>
<td>118</td>
<td>Dr. Murray</td>
<td>120&quot;</td>
</tr>
<tr>
<td>1</td>
<td>Mr. Irvine Smith</td>
<td></td>
</tr>
</tbody>
</table>

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. 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

<table>
<thead>
<tr>
<th>NAME</th>
<th>RANK</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) ABBOTT, William J.</td>
<td>Actg. Asst. Engr.</td>
<td>Medal sent to HMS St. George, Simon's Bay, Cape of Good Hope. Medal known within a family group. Named “W.J. ABBOTT” (case of issue); East and West Africa Medal 1887-1900/Benin 1897 (“W.J. ABBOTT, FL. ENGR: H.M.S. ST. GEORGE.”), mounted as worn; Order of the Brilliant Star (Zanzibar/Commander’s neck badge); Masonic Royal Naval Lodge Past Master’s Jewel, Royal Alfred Lodge No. 420, top brooch engraved “BRO.W.J.ABBOTT.PM.97” (97th Past Master), silver gilt, London hallmarks with date letter “b” for 1897. Son – Commander William St. George Abbott – 1914-15 Star (“LIEUT. W. ST. G. ABBOTT. R.N.”), British War Medal and Victory Medal (“LIEUT. W. ST. G. ABBOTT. R.N.”), swing mounted as worn. Also entitled to the Defence and War Medals 1939-45. Together with an HMS Vampire silver brooch, Birmingham hallmarks, with date letter “s” for 1917; tunic medal ribbon bar for First War trio; Royal Life Saving Society Bronze Proficiency Medal, reverse engraved “W. ST. G. ABBOTT JULY 1910” (fitted presentation case); an original photograph taken in wartime, showing him and fellow officers aboard a warship, believed to be HMS Vampire; and another photograph of him and his wife taken on their wedding day post war, wearing full dress uniform, and his 1914-15 trio; and two framed family crests, both hand done by W. &amp; A. Mussett of Lincoln’s Inn, London.</td>
</tr>
<tr>
<td>3) ALLEN, Alfred J.</td>
<td>Engineer</td>
<td>Shown as Allan on the List. Medal sent to a residence, but then forwarded to the Admiralty. Medal known in Royal Naval Museum (Portsmouth) and named 'A.J. ALLEN'.</td>
</tr>
<tr>
<td>4) BALFOUR, Andrew F.</td>
<td>Sub-Lieutenant</td>
<td>Medal sent to Commander Balfour, HMS Penguin (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.</td>
</tr>
<tr>
<td>5) BETHNELL, George R.</td>
<td>Lieutenant</td>
<td>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 Minotaur). Later an MP for Holderness Division, Yorkshire, for many years.</td>
</tr>
<tr>
<td>6) BROMLEY, Arthur C.B.</td>
<td>Lieutenant</td>
<td>Assistant Surveyor, 3rd Cl. Medal sent to Captain Bromley, HMS Endymion, (Channel Squadron), Admiralty, London.</td>
</tr>
<tr>
<td>8) CARPENTER, Alfred</td>
<td>Lieutenant</td>
<td>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...</td>
</tr>
</tbody>
</table>
1889); Egypt 1882-89 Medal/no bar (Commander, in command of the survey vessel *Myrmidon*) 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** Sub-Lieutenant (1851-?)
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 Quebec City, Canada. Higham's father was a shipbuilder in Rochester, Kent (the Higham Yard, which closed in 1907). Robert Higham rose to the rank of Chief Carpenter, retiring from the Royal Navy at Halifax, Nova Scotia (his last posting) in 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 Fiot Lee Pearse** Commander (1838-1907) 
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** Captain (1831-1915) 
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). FRAS (1875), RGS Founder’s Gold Medal (1877). Gold Medal of the Société de Geographie 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) **SLOGGETT, Henry Charles** Sub-Lieutenant (1852-1905) 
Medal sent to Honolulu, Sandwich Islands. Later resigned his commission and went to medical school in Glasgow. 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** Engineer (1796-1906) 

21) **SWIRE, Herbert** Sub-Lieutenant (1851-1934) 

22) **THOMSON, Frank Tourle** Captain (1875-76) 
Medal known. Probably named “F.T. THOMSON” (case of issue), and exists with an old family chest containing many nautical diaries, certificates, logs, and private letters. Medal sent to Thomson at The Palace, Hampton Court, London. In charge of survey. Contributor to the *Reports*. 
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 (1839-?)**  
Writer, 3rd Cl. A Chief Petty Officer rating. Medal known within a group. Probably named “R. WYATT” and delivered to 113 Powerscourt Road, Portsmouth. Together with an Egypt and Sudan Medal 1882-89/Alexandria 11th July (dated reverse/Writer 1st Class/HMS Alexandra), Naval Long Service and Good Conduct Medal, and Khedive’s Star (1882); these three kept in a case.

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**CIVILIAN SCIENTISTS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE(S)</th>
<th>NOTES &amp; SPECIALTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>26) MOSELEY, Henry Nottidge (1844-91)</td>
<td>Naturalist &amp; Zoologist and Anthropologist. Notes by a Naturalist on HMS Challenger (London, 1880).</td>
<td>Contributor to the Narrative. Hydroid and other Corals; Phosphorescent Organ of Ipnops. Royal Medal (1887); MA; FRS (1877); FZS; FLS.</td>
</tr>
<tr>
<td>27) THOMSON, Sir Charles Wyville (1830-82)</td>
<td>Director of Civilian Scientific Staff</td>
<td>Medal awarded posthumously sent to a Miss Dawson (presumably a relative). Contributor to the Reports. First Editor of the Reports. Introduction of the Zoological Reports. FRS (1869). Sir Wyville Thomson was an important proponent for ocean research in the 1860s that ultimately led to the Challenger Expedition. He was Chief Scientist for the dredging voyages of HMS Porcupine and Lightning, and authored The Depths of the Sea in 1873, which summarized the findings of these voyages and presented a case for a global oceanographic voyage of exploration.</td>
</tr>
<tr>
<td>29) WILLEMOES-SUHM, Dr. Rudolf von (1847-75)</td>
<td>Naturalist</td>
<td>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).</td>
</tr>
</tbody>
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**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**

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIALTIES AND/OR POSITIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>30) AGASSIZ, Alexander (1835-1910)</td>
<td>Echinoidea.</td>
<td>Marine Zoologist and Oceanographer. FRS (1891). Agassiz performed extensive explorations in the U.S. littoral areas prior to the <em>Challenger</em> 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 <em>Challenger</em> reports.</td>
</tr>
<tr>
<td>31) ALLMAN, George James (1812-98)</td>
<td>Hydroida.</td>
<td>Medal known. Named “G.J. ALLMAN”. Marine Zoologist. Royal Medal (1873); Brisbane Gold Medal (1877); Conningham Gold Medal (1878); The Linnean Medal (1896). MD; LLD; FRCSI; FRS (1854); FRSE; MRIA; CMZS.</td>
</tr>
<tr>
<td>32) BEDDARD, Frank Evers (1858-1925)</td>
<td>Isopoda.</td>
<td>Member of Editorial Staff. Naturalist to the Challenger Expedition Commission (1882-84). MA; DSc; FRS (1892); Prossector of the Zoological Society (1884-1915); FRSE; FZS.</td>
</tr>
</tbody>
</table>
33) BERGH, Rudolph (1824-1909) | Nudibranchiata; Marseniidae. | 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.


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. 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).

43) CUNNINGHAM, Daniel John (1850-1909) | Marsupialia. | MD; FRS (1891); FRSE.


45) DENDY, Arthur (1865-1925) | Monaxonida. | Zoologist. BSc; FRS (1908); FLS.

46) DITTMAR, William (1833-92) | Composition of Ocean Water. | Chemist. FRS (1882); FRSE (1863); Fellow, Institute of Chemistry; Chemical Society of London's Graham Medal; Hon. LLD, Edinburgh University.


48) FORBES, William A. | Anatomy of Tubinares; Birds of Cape York, &c. | FLS; FGS; MBOU. Posted to Mrs. Forbes.

49) FULTON, Member of the | Medal known. Named "T. W. FULTON". MD (1884); FRSE.
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Role</th>
<th>Contributions and Honors</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Gibson, John (1855-1914)</td>
<td>Professor of Chemistry,</td>
<td>Medal known. Educated at Edinburgh Acadamy, 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.</td>
</tr>
<tr>
<td>52</td>
<td>Günther, Albert Charles Lewis Gotthilf (1830-1914)</td>
<td>Shore Fish; Pelagic Fish; Deep-sea Fish.</td>
<td>MA; MD; PhD; FLS; FRS (1867). Royal Archive Winner (RS, 1878).</td>
</tr>
<tr>
<td>53</td>
<td>Haeckel, Ernst (1834-1919)</td>
<td>Radiolaria; Deep-sea Medusae; Deep-sea Keratosa.</td>
<td>Biologist &amp; Philosopher. MD; PhD.; Hon. FRSE.</td>
</tr>
<tr>
<td>54</td>
<td>Haddon, Alfred Cort (1855-1940)</td>
<td>Polyplacophora.</td>
<td>Zoologist &amp; Anthropologist. Regarded as one of modern British anthropology. FRS (1899); MRIA.</td>
</tr>
<tr>
<td>58</td>
<td>Herdman, William Abbott (1858-1924)</td>
<td>Member of Editorial Staff.</td>
<td>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.</td>
</tr>
<tr>
<td>60</td>
<td>Hoek, Paulus P.C. (1845-1914)</td>
<td>Cirripedia; Pycnogonida.</td>
<td>Marine Zoologist. Member, Royal Academy of Sciences (Netherlands).</td>
</tr>
<tr>
<td>61</td>
<td>Horsley, Reginald Ernest</td>
<td>Member of Editorial Staff.</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Hoyle, William Evans (1855-1926)</td>
<td>Member of Editorial Staff.</td>
<td>Malacologist. MA (Oxon.); MRCS; FRSE.</td>
</tr>
<tr>
<td>64</td>
<td>Huxley, Thomas Henry (1825-95)</td>
<td>Spirula.</td>
<td>Medal awarded posthumously and sent to his wife. FRS (1851); Royal Medal (1852); President of the Royal Society (1883-85). X Club member. Known as &quot;Darwin's Bulldog&quot;.</td>
</tr>
</tbody>
</table>
65) KÖLLIKER, Rudolph Albert Von (1817-1905) | Pennatulida. | FRS (1860); Copley Medal (1897); FMRS; Hon. FRSE.

66) LANEKSTER, 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. | Spongologist and Cnidariologist.

68) LÉOPOLD, Alexandre Guillaume, Marquis de Folin (1817-96) | Caecidae. | Malacologist.


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 | Medal known within a large group of medals awarded to Mill. Geographer and for years Librarian at the RGS.


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 Nikolaeевич (1854 - ?) | Calcarea; Keratosa. | Spongologist. MA.

79) QUELCH, John Joseph (1854 - ?) | Reef Corals. | Zoologist. BSc (Lond.).

François (1842-1903) Petrolgy of St. Paul's Rocks.


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.


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).


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.


97) **THOMSON, Sir John Arthur** (1861-1933)  
Translator of Zoological Reports.  

98) **TURNER, Sir William** (1832-1916)  
Cetacea; Pinnipedia; Human Skeletons.  
Anatomist. MB; LLD; FRS (1877); FRSSL&E.  

99) **WATERS, Arthur William** (? - 1930)  
Polyzoa.  
Medal known, held in the Manchester Museum. 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)  
Aleyonaria.  
Marine Zoologist. MA; MD; Sec. MRIA.  

### OTHER RECIPIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIALTIES AND/OR POSITIONS</th>
<th>NOTES</th>
</tr>
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<tbody>
<tr>
<td>103) ANDERSON, W. S.</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>104) BLACK, William S.</td>
<td>Edinburgh Artist</td>
<td>Designer of the Challenger Medal</td>
</tr>
<tr>
<td>106) FOSTER, Michael</td>
<td>Physiologist</td>
<td>FRS (1872). KCB (1899). From 1881-1903, one of the secretaries of the Royal Society.</td>
</tr>
<tr>
<td>107) GOSCHEN, Rt. Hon. George Joachim</td>
<td>Member of Parliament</td>
<td>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 <em>Reports</em>.</td>
</tr>
<tr>
<td>108) IRVINE, Robert</td>
<td>Chemist</td>
<td>Medal known. 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.</td>
</tr>
<tr>
<td>109) MONTEITH, Dr. James</td>
<td>?</td>
<td>Medal known. Medal List states: &quot;handed to Mrs. Monteith, per Lily Murray August 27, 1895&quot;.</td>
</tr>
<tr>
<td>110) MURRAY, Mrs.</td>
<td>Wife of Sir John Murray</td>
<td>Acknowledged in the <em>Challenger Reports</em> for her assistance. Evidently not Sir John Murray's wife.</td>
</tr>
<tr>
<td>111) NANSEN, Fridtjof</td>
<td>Polar Explorer</td>
<td>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 <em>Fram</em> Expedition (1893-96).</td>
</tr>
</tbody>
</table>
112) PULLAR, Laurence (1838-1926)  
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. 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)  
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  

115) SCOTT, A.R.  
Medal known, in case of issue. Hand delivered to recipient at the Challenger Office. Acknowledged in the Challenger Reports for his assistance.

116) SCLATER, Miss Annie  
Presumably the daughter of Philip Lutley Sclater. Acknowledged in the Challenger Reports for her assistance.

117) SMITH, Irvine  
Issued unengraved.

118) TURBYNE, Alexander 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. Amelia  
Sent "C/O James Murray, Supt. Can. Pac. RI [Canadian Pacific Railroad], Winnipeg, Manitoba'. Acknowledged in the Challenger Reports for her assistance.

120) One unengraved medal  
Taken to Holland by Dr. Murray.

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**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.
1) COX, Richard
   Boatswain
   In charge of stores.

2) CROSBIE, Alexander
   Chief Surgeon
   In charge of engines.

3) FERGUSON, James H.
   Chief Engineer
   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'.

4) HARSTON, Henry Cuthbert
   Sub-Lieutenant (1852-76)
   Eagles

5) MARCOM, Alfred
   Asst. Surgeon

6) OLDHAM, Cecil F.
   Sub-Lieutenant

7) WESTFORD, Fredk. W.
   Carpenter

<table>
<thead>
<tr>
<th>CIVILIAN SCIENTISTS</th>
<th>SPECIALTY</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>9) BATE, Charles Spence (1819-89)</td>
<td>Macrura.</td>
<td>Invertebrate Zoologist and practicing Dentist. Licentiate Royal College of Surgeons; President, Odontological Society (1885). FRS (1861); FLS.</td>
</tr>
<tr>
<td>10) BRADY, Henry Bowman (1835-91)</td>
<td>Foraminifera.</td>
<td>FRS (1874); FLS; FGS.</td>
</tr>
<tr>
<td>11) CARPENTER, William Benjamin (1813-85)</td>
<td>Orbitolites.</td>
<td>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.</td>
</tr>
<tr>
<td>12) CASTRACANE degli Antelminelli, Conte Francesco (1817-99)</td>
<td>Diatomaceae.</td>
<td>Biologist. He was one of the first to introduce micro-photography into the study of biology.</td>
</tr>
<tr>
<td>13) DAVIDSON, Thomas (1817-85)</td>
<td>Brachiopoda.</td>
<td>Palaeontologist. FRS (1857)-Royal Medal (1870); FGS-Wollaston Medal (1865); Honorary degree by the University of St. Andrews (1882); FLS; VPPS.</td>
</tr>
<tr>
<td>17) WHITE, Francis Buchanan (1842-94)</td>
<td>Pelagic Hemiptera.</td>
<td>Entomologist. MD; FLS.</td>
</tr>
</tbody>
</table>
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 *Challenger Reports* 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 (RSG/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.

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**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 Meteorlogical 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
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)
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
Mr. Frank Draskovic
Dix Noonan Webb (DNW)
Dr. Tony Everton
Ms. Judith Farrington
Mr. Daniel Fearon
Ms. Heather Jaggers
Ms. Alice Keirby
Barbara Leith
Ms. Miranda Lowe
Ms. Gillian Morgan
Mr. Richard Noyce
Mr. Graham Nye
Mr. Mark Sikes
Mr. John I. Simper
Ms. Barbara Tomlinson
Mr. Andrew Traill
Mr. Martin Wagner
Mr. Robert J. F. Watt
Mr. Bryan Williamson


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**Footnotes**

1 Boog-Watson, 1967.


3 Ibid.

4 McManus.

5 P. Rodger, Appeals Officer, March 27, 1995.
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.