

# The *Challenger* Medal Roll (1895)

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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](mailto: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."<sup>1</sup>

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."<sup>2</sup> 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<sup>3</sup>

**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).<sup>4</sup> 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.<sup>5</sup> 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.<sup>6</sup> 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).<sup>7</sup>

**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).<sup>8</sup>

**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

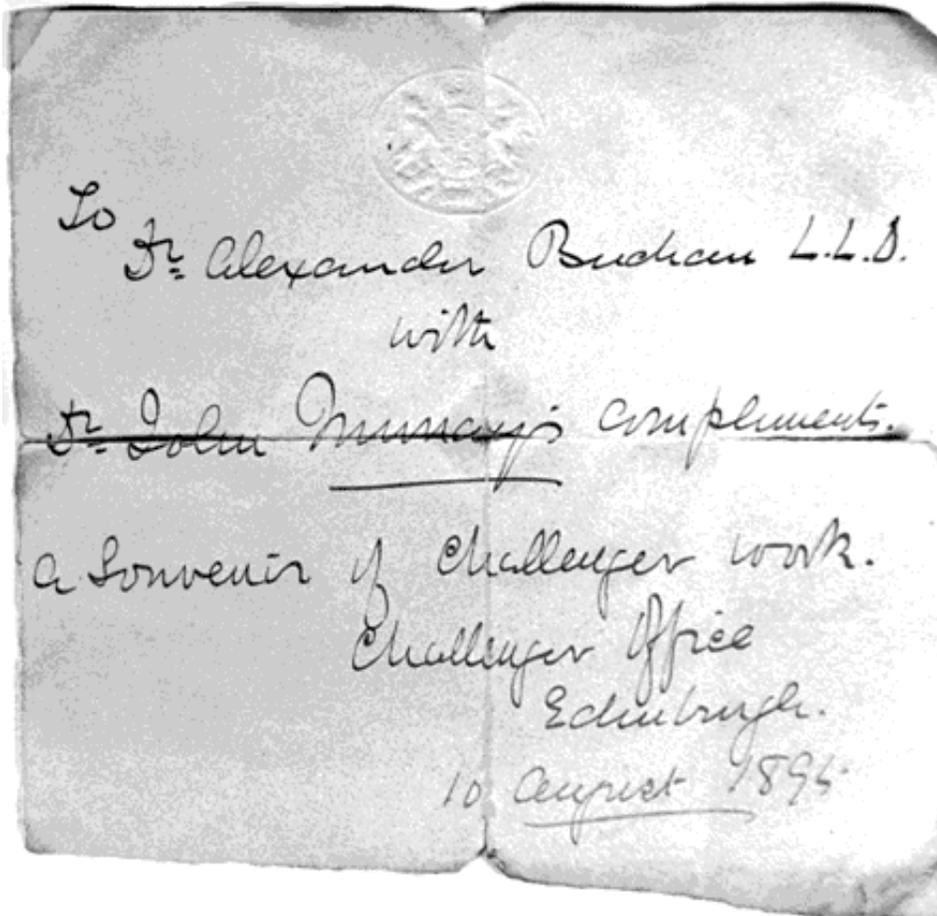
Jan.14 96

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. <sup>9</sup> (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.

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## 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. 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. <a href="#">Son</a> – 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 <i>Vampire</i> 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 <i>Vampire</i> ; 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. & A. Mussett of Lincoln's Inn, London.
2) ALDRICH, Pelham (1844- 1930)	First Lieutenant	Medal sent to Captain Aldrich, HMS Hawke (Mediterranean Squadron), Admiralty, London. Medal known, in case of issue and with document, in the NMM Collection; named "PELHAM ALDRICH". Donated by Aldrich's great-nephew. <a href="#">10</a> 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 All <u>a</u> n 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'.
4) BALFOUR, Andrew F.	Sub- Lieutenant	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.
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	<i>Log-Letters from "The 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 *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 (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 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 (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) SLOGGETT, Henry Charles (1852-1905) Sub-Lieutenant 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 (?-1906) Engineer Medal delivered to Therapia, St. Andrews Road, Southsea. *The Cruise of HMS Challenger* (London, 1880).
- 21) SWIRE, Herbert (1851-1934) Sub-Lieutenant Medal sent to Commander Swire, HMS Australia, Southampton. *The Voyage of the Challenger* (two volumes, limited edition; London, 1937).
- 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, 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, 1839-1924) Thomas H. (1839-1924) 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 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 11<sup>th</sup> 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.

## 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.	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; 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.<sup>11</sup> 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.
- 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, Member of the Medal known. Named "T. W. FULTON". MD (1884); FRSE.

	Thomas Alexander Wemyss (1855-1929)	Editorial Staff.	
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); MRJA.
55)	HARMER, Sidney Frederic (1862-1950)	Cephalodiscus.	Zoologist; FRS (1898).
56)	HEMSLEY, William Botting (1843-1924)	Botany of the Expedition.	Medal known. 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.	Medal known. Named on edge "A.A.W. HUBRECHT"; in original red leather case of issue. 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. <sup>12</sup> 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 Medal known within a large group of medals awarded to Mill. 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 *An Introduction to the Study of Seaweeds* (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- Deep-sea Deposits; Geologist and Petrographer. Bigsby Medal (London Geological Society, 1885).

- François (1842-1903) Petrology of St. Paul's Rocks.
- 81) RIDLEY, Stuart Oliver (1853-1935) Monaxonida. Medal known. Named "S.O. RIDLEY". Spongiologist. MA; FLS.
- 82) SALVADORI PALEOTTI, Count Adelar 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. Medal known. Named "P.L. SCLATER". 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 known. Named "W.T. THISELTON DYER". Sent to the Royal Gardens, Kew. Paired with The Clarke Medal (Royal Society of New South Wales), named "WILLIAM TURNER THISELTON DYER, C.M.G., M.A., B.Sc., F.R.S., F.L.S., 1892." (with lid and inner medal pad of titled case). Director of Kew (1885-1905). FRS

(1880); KCMG (1899); CIE (1892). 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. 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) 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	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.
109) MONTEITH, ? Dr. James (1865-1934)		Medal known. Medal List states: "handed to Mrs. Monteith, per Lily Murray August 27, 1895".
110) MURRAY, Mrs.	Wife of Sir John Murray	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).

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 <i>Report</i> . <sup>13</sup> 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 Medal</i> by Murray. To date, however, the author has not uncovered any direct link between Pullar, the <i>Challenger Expedition</i> or the <i>Reports</i> .
113) RICHARDS, George Henry, (1820-1896)	Rear Admiral	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)
114) THE ROYAL SOCIETY		Medal known. Sent to Burlington House, London.
115) SCOTT, A.R.	?	Medal known, in case of issue. Hand delivered to recipient at the Challenger Office. Acknowledged in the <i>Challenger Reports</i> for his assistance.
116) SCLATER, Miss Annie	Assistant?	Presumably the daughter of Philip Lutley Sclater. Acknowledged in the <i>Challenger Reports</i> for her assistance.
117) SMITH, Irvine	?	Issued unengraved.
118) TURBYNE, Alexander (?-1905)	Merchant Captain	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 Medal</i> . 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 gun accident in East London, South Africa, on 15 July 1905.
119) WEIR, Mrs. Amelia	?	Sent "C/O James Murray, Supt. Can. Pac. Rl [Canadian Pacific Railroad], Winnipeg, Manitoba'. Acknowledged in the <i>Challenger Reports</i> 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*.

- 1) COX, Richard Boatswain In charge of stores.
- 2) CROSBIE, Staff Surgeon  
Alexander
- 3) FERGUSON, Chief In charge of engines.  
James H. Engineer
- 4) HARSTON, Sub- Son of an RN Captain. Henry Harston died on June 6, 1876, and according to the death  
Henry Cuthbert Lieutenant certificate, he committed suicide 'as a result of taking chloral while in a state of temporary  
Eagles (1852-76) insanity'.
- 5) LLOYD, Sub- Retired Commander on Sept. 15, 1899. Emergency List, 1901. Cmdr., Tyneside Division,  
Edward W. Lieutenant 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, Asst. Surgeon  
Alfred
- 7) OLDHAM, Sub-  
Cecil F. Lieutenant
- 8) WESTFORD, Carpenter  
Fredk. W.

**CIVILIAN SPECIALTY  
SCIENTISTS**

**NOTES**

- 9) BATE, Charles Macrura. Invertebrate Zoologist and practicing Dentist. Licentiate Royal College of Surgeons; President,  
Spence Odontological Society (1885). FRS (1861); FLS.  
(1819-89)
- 10) BRADY, Henry Foraminifera. FRS (1874); FLS; FGS.  
Bowman  
(1835-91)
- 11) CARPENTER, Orbitolites. Physiologist who published extensively in fields as far apart as mental physiology, microscopy,  
William marine biology and religion. Lyell Medal (1883). CB; MD; LLD; FRS (1844); FGS. Father of  
Benjamin Philip Herbert Carpenter.  
(1813-85)
- 12) CASTRACANE Diatomaceae. Biologist. He was one of the first to introduce micro-photography into the study of biology.  
degli  
Antelminelli,  
ConteFrancesco  
(1817-99)
- 13) DAVIDSON, Brachiopoda. Palaeontologist. FRS (1857)-Royal Medal (1870); FGS-Wollaston Medal (1865); Honorary  
Thomas degree by the University of St. Andrews (1882); FLS; VPPS.  
(1817-85)
- 14) GARROD, Anatomy of Vertebrate Zoologist. FRS (1876).  
Alfred Henry Carphophaga.  
(1846-79)
- 15) HAY, Arthur Birds of the The *Ornithological Works of Arthur, Ninth Marquis of Tweeddale* (1881). Served as a soldier  
(9th Marquis of Philippines. in India and the Crimea. President of the Zoological Society of London. FRS (1871).  
Tweeddale)  
(1824-78)
- 16) MIERS, Edward Brachyura. Curator of the Natural History Museum in London (1872-85). FZS; FLS.  
John  
(1851-1930)
- 17) WHITE, Francis Pelagic Entomologist. MD; FLS.  
Buchanan Hemiptera.  
(1842-94)

## 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 (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.

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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 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

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Dr. Tony Everton  
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Mr. Daniel Fearon  
Ms. Heather Jagers  
Ms. Alice Keirby  
Barbara Leith  
Ms. Miranda Lowe  
Ms. Gillian Morgan  
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Mr. Graham Nye  
Mr. Mark Sikes  
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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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