

Musel Joss

ARNOLD ROSS OCTOBER 26, 1936–DECEMBER 22, 2006

William A. Newman and Frederick R. Schram

(WAN) Scripps Institution of Oceanography, La Jolla, California 92093-0202, U.S.A. (wnewman@ucsd.edu);
 (FRS) Burke Museum, University of Washington, P.O. Box 1567, Langley, Washington 98260, U.S.A. (fschram@u.washington.edu)

Arnold Ross, a foremost scholar of the thoracican cirripeds, made substantial contributions to our knowledge of marine biodiversity. He not only had a keen eye when it came to distinguishing species, but also in recognizing their relationships and therefore in assigning them to higher taxa. He also discovered some remarkable morphological modifications, especially in the coral-inhabiting balanomorphs that, together with the tetraclitids, were his principal interests. There are some young cirriped systematists who will presumably fill the breach, but Arnold did set the bar rather high.

Little is know of Arnold's early life, except that he made contact with biologists and paleontologists in Florida as well New York before attending college, and he retained an early membership in the Paleontological Research Institution, New York, to the year before he died. He is survived by his mother, an older sister, a niece, and two former wives.

Unfortunately, he was camera shy, and we were only able to locate a few photos of him. There is a rather formal one at the San Diego Natural History Museum, but the likeness of the one taken on the bluff seaward of Scripps is pretty much how most of us would like to remember him.

Arnold published his first taxonomic paper in 1960 with Dr. H. Kelly Brooks of the Florida State Museum, Gainesville, on a fossil coral barnacle from Florida (Brooks and Ross, 1960). This was before being inducted into the Army (24 October 1960). He subsequently attended Columbia University (1962-1963), but then transferred to the University of Florida at Gainesville. While there, he also worked as a curatorial assistant at the Florida State Museum, and as a field collector for the Florida Geological Survey, before completing his Bachelor of Science degree in 1965. Between 1961 and 1965, he was sole or first author of 12 additional papers, mostly involving fossil barnacles of

Florida and environs, but including living forms from Hawaii (Ross, 1961), West Mexico (Ross, 1962) and North Carolina (Ross et al., 1964). Following his degree, he received the W.A. Tarr Award from Sigma Gamma Epsilon (1964) for meritorious work in Earth Science, and he rejoined his mentor, Dr. William K. Emerson, at the American Museum in New York, where he worked as a Senior Research Assistant and was elected a Fellow of the AAAS (1967). While retaining his love of fossils, the taxonomy, systematics, and morphology of living forms received his greatest attention for the rest of his life.

The first author (WAN) became acquainted with Arnold in 1961, in correspondence concerning the fossil coral barnacle he and Brooks had described (Brooks and Ross, 1960), and he visited him in Gainesville in the summer of 1964, where plans to revise the coral barnacles was initiated (Ross and Newman, 1973). In 1966, Arnold came to Scripps Institution of Oceanography, to work on Antarctic cirripeds (Newman and Ross, 1971; Ross and Newman, 1969a). He liked California and took a position as Curator and Chairman of the Department of Paleontology at the San Diego Natural History Museum (1968-1977), during which time he became an Adjunct Professor at San Diego State University while retaining professional ties with Scripps as a Research Associate. During this period, he was an author of 24 or so papers and one popular book (Ross and Emerson, 1974) involving barnacles. Several of the papers (Jackson and Ross, 1972a,b; Jackson et al., 1973; Ross and Jackson, 1972) were on living and fossil turtle barnacles with a former University of Florida classmate, Dr. Crawford C. Jackson, who was at the San Diego Natural History Museum at the time as editor of several scientific journals. Their friendship of 40 years, which included some rather hair-raising field trips in addition to laboratory research, persisted until Crawford's death in 2003. All seemed to be going extremely well in San Diego, but then there was a mid-life crisis of some sort focused around issues at the museum, and Arnold essentially disappeared from science between 1977 and 1994.

One day in 1994, after a hiatus of about 17 years, he stopped by Scripps to chat about getting back to barnacles, and as far as the literature was concerned, he must have been keeping up with it, as it seemed he had never been away. However, new skills were needed, so he took on word processing, computer-based cladistics, and the preparation of specimens for Scanning Electron Microscopy with alacrity, and it was not long before a stream of papers began to appear again. On the strength of his exceptional abilities and publication record, a proposal that he be examined for a doctorate degree at a prestigious European University was being favorably entertained (FRS), but Arnold eventually asked that it be withdrawn, much to the disappointment of his sponsors. Some years later, heart and circulatory problems that affected his legs began making it difficult to come into the laboratory, and by 2003 the stream of 34 or so papers of this period ended, as did his life a few years after that.

At times Arnold could be sarcastic as well as extremely charming, depending on his mood, but generally he was a congenial fellow and most who got to know him personally became quite fond of him. More than one editor,

while commending his editorial skills as well as depth of knowledge, has remarked on his "quirky" sense of humor that at times might even have been considered outlandish. However, he had a bold, clear hand and this, combined with his expertise and considerable patience, made him a much-appreciated referee, especially among those whose native tongue was not English.

As can be seen from the list of taxa given below (Appendix II), proposed all or in part by Arnold, he was a highly innovative as well as productive systematist. He had a keen eye for functional adaptations as well as taxonomic characters, and one knew something was up when, sitting at the microscope or with some SEM photos in hand, he would say, "Now feast your ocular faculties on this" (WAN). More often than not, the discovery formed the basis for such papers as those on the coral-eating barnacles (Ross and Newman, 1969b, 1995; Ross, 2000b; Ross and Newman, 2000b), or a presumed ordinary coral barnacle that turned out to have similar morphological structures (Ross and Newman, 2000c) as a "bryozoan" symbiont (Ross and Newman, 1996a). Testimony that his works were much appreciated by others in the field is given by the numerous taxa named in his honor (Appendix III). While memories of Arnold will persist in the hearts of those who knew him, his works will endure in the annals of our science for all time to come.

APPENDIX I: PUBLICATIONS ON CIRRIPED TAXA BY ARNOLD ROSS AND CO-AUTHORS

Research Papers

Brooks, H. K., and A. Ross. 1960. *Pyrgoma prefloridanum*, a new species of cirriped from the Caloosahatchee marl (Pleistocene) of Florida. Crustaceana 1: 353-365.

Frick, M. G., and A. Ross. 2001a. An oft-told story: Man's impact on green turtles in the Caribbean, circa 1720. Marine Turtle newsletter 94: 11.

- ——, and ——. 2001b. Will the real *Chelonibia testudinaria* please come forward: An appeal. Marine Turtle Newsletter 94: 16-17.
- , _____, K. L. Williams, A. B. Bolten, K. A. Bjorndal, and H. R. Martins. 2003. Epibiotic associates of oceanic-stage loggerhead turtles from the southeastern North Atlantic. Marine Turtle Newsletter No. 101:
- Gibbson, M. L. et al. (including Newman, Ross and 62 other authors). 1999. The taxonomic richness of South Africa's marine fauna: a crisis at hand. South African Journal of Science 95: 8-12.
- Jackson, C. G., and A. Ross. 1972a. The occurrence of barnacles on the alligator snapping turtle, *Macroclemys temminckii* (Troost). Journal of Herpetology 5: 188-189.
- , and ______, 1972b. Balanomorph barnacles on *Chrysemys alabamensis*. Quarterly Journal of the Florida Academy of Sciences 35:173-176.
- ——, ——, and G. L. Kennedy. 1973. Epifaunal invertebrates of the ornate diamondback terrapin, *Malaclemys terrapin macrospilota*. American Midland Naturalist 89: 495-497.
- McLaughlin, P. A., A. Ross, A. J. Southward, and W. A. Newman. 2000. Dora Priaulx Henry, May 24, 1904-June 16, 1999. Journal of Crustacean Biology 20: 199-203.
- Newman, W. A., P. A. Jumars, and A. Ross. 1976. Diversity trends in coral-inhabiting barnacles (Cirripedia, Pyrgomatinae). Micronesica 12: 69-81
- —, and A. Ross. 1971. Antarctic Cirripedia. American Geophysical Union, Antarctic Research Series 14: 1-257.
- ———, and ———. 1976. Revision of the balanomorph barnacles; including a catalog of the species. Memoirs of the San Diego Society of Natural History 9: 1-108.
- —, and —, 1977a. Superfamilies of the Balanomorpha (Cirripedia, Thoracica). Crustaceana 32: 102.

- —, and ——. 1977b. A living *Tesseropora* (Cirripedia, Balanomorpha) from Bermuda and the Azores: first records from the Atlantic since the Oligocene. Transactions of the San Diego Society of Natural History 18: 207-216.
- ——, and ——. 1998. Peduncular armament in the Scalpellomorpha (Cirripedia) and a new abyssal species from the East Pacific Rise. Journal of Crustacean Biology 18: 572-580.
- —, and —. 2001. Prospectus on larval cirriped setation formulae, revisited. Journal of Crustacean Biology 21: 56-77.
- ______, and J. S. Buckeridge. 2002. Deep-water scalpellomorph/coral symbiosis in the North Atlantic. Crustaceana 75: 517-525.
- ——, and A. J. Southward. 1999. Herbert George Stubbings, 1912-1999. Journal of Crustacean Biology 20: 204-206.
- Paulay, G., and A. Ross. 2003. An annotated checklist of the shallow water Cirripedia of Guam. Micronesica 35: 363-314.
- Pitombo, F. B., and A. Ross. 2002. A review of the *Hexacreusia* species complex: Eastern Pacific coral barnacles (Cirripedia, Balanomorpha). Arquivos do Museu Nacional, Rio de Janeiro 60: 89-94.
- Ross, A. 1961. A new cirriped from the Hawaiian Islands. Crustaceana 2: 208-212.
- ——. 1962. Results of the Puritan-American Museum of Natural History Expedition to western Mexico. 15. The littoral balanomorph Cirripedia. American Museum Novitates 2084: 1-44.
- . 1963a. A new Pleistocene *Platylepas* from Florida. Quarterly Journal of the Florida Academy of Sciences 26: 150-158.
- ——. 1963b. Chelonibia in the Neogene of Florida. Quarterly Journal of the Florida Academy of Sciences 26: 221-233.
- 1963c. Cirripedia from the Yorktown Formation (Miocene) of Virginia. Journal of Paleontology 38: 483-491.
- Virginia. Journal of Paleontology 38: 483-491.
 1965a. A new barnacle from the Tamiami Miocene. Quarterly Journal of the Florida Academy of Sciences 27: 271-277.
- . 1965b. Type locality of *Platylepas wilsoni* Ross. Quarterly Journal of the Florida Academy of Sciences 27: 278.
- . 1965c. Scalpellum gibbum Pilsbry (Cirripedia) in the Florida Miocene. Crustaceana 9: 219-220.
- . 1965d. A new cirriped from the Eocene of Georgia. Quarterly
- Journal of the Florida Academy of Sciences 28: 59-67.

 ——. 1965e. Acrothoracican barnacle burrows from the Florida
- Miocene. Crustaceana 9: 317-318.

 ——. 1965f. *Armatobalanus* in the Miocene of Maryland. Quarterly
- Balanidae. Crustaceana 11: 110.
- 1968a. Bredin-Archbold Smithsonian biological survey of Dominica. 8. The intertidal balanomorph Cirripedia. Proceedings of the United States National Museum 125(3663): 1-23.
- ——. 1968b. Notes on *Balanus humilis* Conrad, 1846. Quarterly Journal of the Florida Academy of Sciences 30: 173-176.
- . 1969. Studies on the Tetraclitidae (Cirripedia: Thoracica): Revision of *Tetraclita*. Transactions of the San Diego Society of Natural History 15: 237-251.
- ——. 1970. Studies on the Tetraclitidae (Cirripedia: Thoracica): A proposed new genus for the Austral species *Tetraclita purpurascens breviscutum*. Transactions of the San Diego Society of Natural History 16: 1-12.
- 1971a. Studies on the Tetraclitidae (Cirripedia: Thoracica): A new tetraclitellan from India. Transactions of the San Diego Society of Natural History 16: 215-224.
- ——. 1971b. A new genus of Chthamalidae (Cirripedia) from the southeastern Pacific island of San Ambrosio. Transactions of the San Diego Society of Natural History 16: 265-278.
- ——. 1973. Studies on the Tetraclitidae (Cirripedia: Thoracica): On the occurrence of *Tetraclitella karandei* in Taiwan. Crustaceana 23: 307-308.
- ——. 1975. Heteralepas cornuta (Darwin) in the eastern Pacific abyssal fauna (Cirripedia: Thoracica). Crustaceana 28: 17-20.
- ——. 1999a. Studies on the Tetraclitidae (Cirripedia: Balanomorpha). New species of *Tetraclita* from the Red Sea. Pakistan Journal of Marine Sciences 8: 1-13.
- ——. 1999b. On the occurrence of *Megabalanus stultus* (Darwin), 1854 (Cirripedia: Balanomorpha) in Taiwan: a reappraisal. Zoological Studies 72: 359-361.
- . 1999c. Notes on the coral-inhabiting barnacles of the Great Barrier Reef, Australia (Cirripedia: Pyrgomatidae). Memoirs of the Queensland Museum 43: 833-836.

- 1999d. Studies on the Tetraclitidae (Cirripedia: Balanomorpha); new species of Tetraclita from the Red Sea. Pakistan Journal of Marine Science 8: 41-53.
- . 1999e. Membranobalanus Hoek from Pliocene sediments of southern California (Cirripedia, Balanomorpha). Crustaceana 72: 351-361.
- ——. 2000a. *Arossella* Anderson, 1993: What is the type species (Cirripedia: Balanomorpha)? Sessile Organisms 16(2): 15-20.
- . 2000b. Coral-eating barnacles: Wall morphology and the description of two new species. Sessile Organisms 17: 45-56.
- , M. J. Cerame-Vivas, and L. R. McCloskey. 1964. New barnacle records for the North Carolina coast. Crustaceana 7: 312-313.
- ——, and C. G. Jackson. 1972. Barnacle fouling of the ornate diamondback terrapin, *Malaclemys terrapin macrospilota* Hay. Crustaceana 22: 203-205.
- ——, and W. A. Newman. 1967. Eocene Balanidae of Florida, including a new genus and species with a unique plan of "turtle-barnacle" organization. American Museum Novitates 2288: 1-21.
- ——, and ——. 1969a. Cirripedia. In, Distribution of selected groups of marine invertebrates in waters south of 35 degrees S. latitude. Antarctic Map Folio Series, American Geographical Society, Folio 11: 30-32, pl. 17.
- ______, and ______. 1969b. A coral-eating barnacle. Pacific Science 23: 252-256.
- ——, and ——. 1973. Revision of the coral-inhabiting barnacles (Cirripedia: Balanidae). Transactions of the San Diego Society of Natural History 17: 137-174.
- ——, and ——. 1995. A coral-eating barnacle, revisited (Cirripedia, Pyrgomatidae). Contributions to Zoology 65: 129-175.
- ———, and ———. 1996a. A new sessile barnacle symbiotic with bryozoans from Madagascar and Mauritius (Cirripedia: Balanomorpha): a unique case of co-evolution? Invertebrate Biology 115: 150-161 [+ cover photo].
- ——, and ——. 1996b. Elizabeth Carington Pope, 1912-1993. Journal of Crustacean Biology 16: 636-637.
- ——, and ——. 1996c. A unique experiment in four-platedness by a Miocene barnacle (Cirripedia: Balanidae) that Darwin considered improbable. Journal of Crustacean Biology 16: 663-668.
- ——, and ——. 1999. A new coral-inhabiting barnacle from Taiwan (Cirripedia: Pyrgomatidae). Zoological Studies 38: 387-390.
- ——, and ——. 2000a. A new coral-eating barnacle: the first record from the Great Barrier Reef, Australia. Memoirs of the Queensland Museum 45: 585-591.
- —, and —. 2000c. A reply to the preceding comments by L. B. Holthuis. Crustaceana 73: 631.
- ———, and ———. 2000d. *Pyrgoma kuri* Hoek, 1913: a case study in morphology and systematics of a symbiotic coral barnacle (Cirripedia: Balanomorpha). Contributions to Zoology 68: 245-260.
- ——, and ——. 2001a. The Catophragmidae: members of the basal balanomorph radiation. Sessile Organisms 18: 77-91.
- _____, and ______. 2001b. Cionophora—New records from a western Pacific coral-inhabiting barnacle of Astreopora. Zoological Studies 40: 204-205.
- ——, and ——. 2003. Coral barnacles: Cenozoic decline and extinction in the Atlantic/East Pacific versus diversification in the Indo-West Pacific, pp. 179-184. In, M. K. Kasim Moosa, S. Soemodihardjo, A. Nontji, A. Soegiarto, K. Romimohtarto, Sukarno and Suharsona (eds.), Proceedings 9th International Coral Reef Symposium 1: 179–184.
- —, and R. T. Perreault. 1999. Revision of the Tetraclitellinae and description of a new species of *Newmanella* Ross from the tropical western-Atlantic Ocean. (Cirripedia: Tetraclitoidea). Sessile Organisms 15(2): 1-8.
- —, and F. B. Pitombo. 2002. Notes on the coral-inhabiting Megatrematinae and the description of a new tribe, new genus and three new species (Cirripedia:Sessilia:Pyrgomatidae). Sessile Organisms 19: 57-68.
- ——, and T. Yamaguchi. 2001. Site selection, wall development and biogeography of *Galkinia indica*, and Indo-West Pacific coral-inhabiting barnacle. Biogeography 3: 59-68.
- Young, P. S., and A. Ross. 2000. Cirripedia, pp. 213-238. In, J. E. Llorente-Bousquets, González-Soriano and N. Papavero (eds.). Biodiversidad, Taxonomía y Biogeografía de Artrópodos de México: Hacia una síntesis de su conocimiento vol. 2. Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México, Ciudad de México.
- Zullo, V. A., W. A. Newman, and A. Ross. 1972. Kolosváry Gábor (Gabriel von Kolosváry) 1901-1968. Crustaceana 22: 96-102.

Book

Ross, A. and W. K. Emerson 1974. Wonders of Barnacles. Dodd, Mead and Co., New York, 80 pp.

APPENDIX II: CIRRIPED TAXA PROPOSED ROSS AND CO-AUTHORS LISTED ALPHABETICALLY (EXTINCT TAXA ARE PRECEDED BY "†")

Family-group taxa:

Archaeobalanidae Newman and Ross, 1976: 38 Austrobalaninae Newman and Ross, 1976: 38 Bathylasmatidae Newman and Ross, 1971: 138 Bosciinae Newman and Ross, 1976: 59 Bryozobiinae Ross and Newman, 1996: 151 Catomerinae Ross and Newman, 2001: 82 Ceratoconchinae Newman and Ross, 1976: 39 †Emersoniine Ross, in Ross and Newman, 1967: 7 Euraphiinae Newman and Ross, 1976: 36 Hexelasmatinae Newman and Ross, 1976: 37 Hoekiini Ross and Newman, 1995: 133 Newmanellinae Ross and Perreault, 1999: 2 Platylepadinae Newman and Ross, 1976: 44 Pyrgominini Ross and Pitombo, 2002: 58 Pyrgopsellini Ross and Newman, 1995: 133 Semibalaninae Newman and Ross, 1976: 38 Tetraclitellinae Newman and Ross, 1976: 38

Waikalasmatidae Ross and Newman, 2001: 85

Genus-group taxa: *Aaptolasma* Newman and Ross, 1971: 158

Abathescalpellum Newman and Ross, 1971: 104 Ahoekia Ross and Newman, 1995: 146 Annandaleum Newman and Ross, 1971: 122 Australohoekia Ross and Newman, 2000: 358 Australscalpellum Newman and Ross, 1971: 130 Bathylasma Newman and Ross, 1971: 143 Brochia Newman and Ross, 1971: 133 Bryozobia Ross and Newman, 1996: 151 Cantellius Ross and Newman, 1973: 150 Catolasma Ross and Newman, 2001: 81 Cionophora Ross and Newman, 1999: 388 Cionophorus Ross and Newman, 2001: 204 (nomen novum) †Emersonius Ross, in Ross and Newman 1967: 7 Eohoekia Ross and Newman, 1995: 134 Eotetraclitella Ross and Perrault, 1999: 6 Epopella Ross, in Ross and Newman, 1970: 3 Galkinia Ross and Newman, 1995: 132 Gymnoscalpellum Newman and Ross, 1971: 105 Hiroa Ross and Newman, 1973: 153 Hoekia Ross and Newman, 1973: 161 Jehlius Ross, 1971: 269 Kathpalmeria Ross, 1965: 61 Litoscalpellum Newman and Ross, 1971: 108 Memagreta Ross and Pitombo, 2002: 64 Neopyrgoma Ross and Newman, 2002: 416 Neotrevathana Ross, 1999: 835 Newmanella Ross, 1969: 242 Notobalanus Ross, in Newman and Ross, 1976: 38 Parahoekia Ross and Newman, 1995: 137 Rosella Ross and Perrault, see Yamaguchiella †Tesseroplax Ross, 1969: 241 Tetrachaelasma Newman and Ross, 1971: 152

Species-group taxa (cited in the same combination as originally proposed): achituvi, Tetraclita, Ross, 1999: 44 acicularum, Arcoscalpellum, Newman and Ross, 1971: 43 andersonorum, Wanella, Ross, 1999: 835 aster, Parahoekia, Ross and Newman, 1995: 137

Yamaguchiella Ross and Perrault 1999: 5 (for Rosella, preoccupied)

Vertebroscalpellum Newman and Ross, 1998: 572

†Zulloa Ross and Newman, 1996: 663

Zulloana Pitombo and Ross, 2002: 91

atlantica, Tesseropora, Newman and Ross, 1977: 208 barnesorum, Tetraclita, Ross, 1999: 46 brintoni, Aaptolasma, Newman and Ross, 1971: 162 buccinum, Arcoscalpellum, Newman and Ross, 1971: 55 bulata, Brochia, Newman and Ross, 1971: 133 †calvertensis, Armatobalanus, Ross, 1965: 334 cardenae, Australhoekia, Ross and Newman, 2000: 589 chaos, Eohoekia, Ross and Newman, 1995: 134 chuangi, Ahoekia, Ross and Newman, 1995: 147 †cybosyrinx, Emersonius, Ross, 1967: 8 decima, Creusia, Ross and Newman, 1973: 155 djanae, Pyrgomina, Ross and Pitombo, 2002: 60 eltaninae, Neoscalpellum, Newman and Ross, 1971: 103 fissicarinatum, Litoscalpellum, Newman and Ross, 1971: 108 fornix, Hoekia, Ross and Newman, 1995: 140 fosteri, Hexelasma, Newman and Ross, 1971: 155 †georgiana, Kathpalmeria, Ross, 1965: 63 gilmorei, Jehlius, Ross, 1971: 217 imbricotectum, Arcoscalpellum, Newman and Ross, 1971: 64 †imperialensis, Zulloa, Ross and Newman, 1996: 666 karandei, Tetraclitella, Ross, 1971: 217 kolosvaryi, Newmanella, Ross and Perrault, 1999: 3 latusculum, Arcoscalpellum, Newman and Ross, 1971: 66 leptoderma, Aaptolasma, Newman and Ross, 1971: 165 lynnae, Arossella, Ross, 2000: 18 microtrema, Ahoekia, Ross, 2002: 49 mortenseni, Hoekia, Ross and Newman, 1995: 144 multicostatum, Arcoscalpellum, Newman and Ross, 1971: 73 †multiseptatus, Balanus, Ross, 1964: 485 nyx, Eoĥoekia, Ross and Newman, 1995: 136 †obliquus, Balanus, Ross, 1964: 486 octavus, Cantellius, Ross and Newman, 1973: 155 †oppidieboraci, Balanus, Ross, 1964: 490 pandora, Memagreta Ross and Pitombo, 2002: 64 philippensis, Hoekia, Ross, 2002: 47 †prebrevicalcar, Balanus pacificus, Ross, 1964: 490 †prefloridanum, Pyrgoma, Brooks and Ross, 1960: 355 puritanae, Hexacreusia, Pitombo and Ross, 2002; 90 quintus, Cantellius, Ross and Newman, 1973: 153 schizmatoplacinum, Australscalpellum, Newman and Ross, 1971: 131 schizoplacinum, Neoscalpellum, Newman and Ross, 1971: 101 simplex, Litoscalpellum, Newman and Ross, 1971: 114 soongi, Cionophora, Ross and Newman, 2001: 388 southwardi, Tetrachaelasma, Newman and Ross, 1971: 152 spinum, Vertebroscalpellum, Newman and Ross, 1998: 573 stubbingsi, Hiroa, Ross and Newman, 1973: 153 subquadrata, Tetraclitella divisa, Ross, 1961: 210 synaptos, Bryozobia, Ross and Newman, 1996: 151 †tamiamiensis, Balanus, Ross, 1964: 272 tanabensis, Ahoekia, Ross and Newman, 1995: 147 tarasovi, Gymnoscalpellum, Newman and Ross, 1971: 105 tomlinsoni, Cryptophialus, Newman and Ross, 1971: 25 triderma, Aaptolasma, Newman and Ross, 1971: 164 utinomii, Arcoscalpellum, Newman and Ross, 1971: 86 walleni, Litoscalpellum, Newman and Ross, 1971: 116 †wilsoni, Platylepas, Ross, 1963: 153

APPENDIX III: TAXA NAMED IN HONOR OF ARNOLD ROSS (LISTED CHRONOLOGICALLY):

rossi, Oxynaspis, Newman, 1972
rossi, Arcoscalpellum, Rao and Newman, 1972
rossi, Cryptophialus, Tomlinson, 1973
rossi, Calantica (Paracalantica), Rosell, 1976
Arossia, Newman, 1982
†rossi, Chesaconcavus, Zullo, 1992
Rossia, Anderson, 1992 (see Arossella)
Arossella Anderson, 1993 (for Rossia, preoccupied)
arnoldi, Tesseropora, Young, 1998
rossi, Barbascalpellum, Young, 2001

youngi, Megatrema Ross and Pitombo, 2002: 63